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The orbitals of consciousness. A neurosyntergic approach to the discrete levels of conscious experience

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A connection is traced from the behaviour of electrons existing only in particular locations (orbitals) around their nucleus, to discrete levels of conscious experience.

According to the syntergic theory, the structure of experience is the result of an interaction between an energetic field created by the brain (the neuronal field) and the energetic structure of space (the quantum field). Conscious experience appears when a central processor focuses this interaction. It is postulated that this focalization process can only arise in some discrete portions of the syntergic continuum, thus also activating discrete levels of conscious experience.

1. THEORETICAL INTRODUCTION

When the neuronal field (Grinberg-Zylberbaum, 1982) interacts with the quantum field (Capra, 1976) a hypercomplex energetic interference pattern is created (Grinberg-Zylberbaum, 1983). This interference pattern constitutes the energetic structure of perceptual experience. This energetic structure is not localized in space and, hence, its conscious appearance as an individual conscious experience requires a focalization operation. This focalization involves a new interaction between the interference pattern and the central processor responsible for activating a hypothetical directionality factor (Grinberg-Zylberbaum, 1981). The directionality factor stimulates a limited portion of the interference pattern, transforming its energetic structure into a qualitatively distinct perceptual experience. The purely energetic structure of the perceptual experience (the interference pattern in space) is thus transformed into the dimension of a vividly conscious experience. The central processor responsible the activity of the directionality factor is intimately

related to the Self, or real observer, known in different traditions as the Being, Self or Purusha (Ramana Maharshi, 1972; Vivekananda, 1975).

Both the neuronal field and the quantum field, together with their interaction, are located in a syntergic continuum (Grinberg-Zylberbaum, 1982). The extreme of low syntergy in this continuum is characterized by an energetic organization in which each of its elements contains small amounts of information of high coherence, poor connections between parts and restricted complexity. In contrast, in an organization of high syntergy, each one of its elements contains high amounts of information of high coherence, rich connections between parts and unrestricted complexity (Grinberg-Zylberbaum, 1981).

Theoretically, it is possible to postulate that the pattern giving rise to the energetic structure of experience appears throughout the syntergic continuum in an analogue, rather than in a discrete, form. Nevertheless, because the systems of thought that have studied the appearance of consciousness (Vivekananda, 1975; Epstein, 1978; Aurobindo, 1971) describe discrete levels of conscious experience, these empirical observations imply the existence of discrete levels in the creation of an interference pattern, or discrete levels of interaction between the central processor and a non-discrete interference pattern, thus giving raise to quantized levels of conscious experience.

2. THE ORBITALS OF CONSCIOUSNESS

In space, the structure of the syntergic continuum is related to the varying degree of concentration of the information contained in it. A mathematical abstraction, the so-called minimal quantum of space, is of help in understanding the syntergic structure. Each location in space can be conceived as a container, energised to hold some quantity of information. Take, for example, the visible information of the moon seen from the earth's surface. The minimal volume of space capable of containing the maximum visible information about the moon would be the minimal quantum of space for the moon at that specific distance. As the distance increases, the dimension of the quantum diminishes until, at an infinite distance from all objects, the minimal quantum of space is infinitesimal in dimension and contains coherent information relating to all the universe. This hypothetical place in space would constitute the extreme of high syntergy — the Aleph (Borges, 1970).

Similar, if not identical considerations, can be made in regard to the convergent organization of the brain (Grinberg-Zylberbaum, 1978). In it, relatively dispersed information at the retinal receptors level, converges in bipolar and later on in ganglionic cells, in which patterns of neuronal activity

are concentrated in what can be called neuronal algorithms. The same concentration of information takes place all along the primary, secondary and tertiary occipital cortex and later on in high integration polisensory structures, from where abstractions and language processes concentrate in coherent neuronal algorithms high amounts of previously disconnected information. Thus, a neurosyntergic continuum can be postulated in the brain.

The neurosyntergic organization of the brain unites with the syntergic organization of space by the creation, expansion and interaction of the neuronal field with the quantum field. The neuronal field appears as a result of all the neuronal interactions taking place inside the brain structure. This energetic field expands in space and incorporates in its structure the active neurosyntergic functioning level of the brain.

Nobody has ever recorded directly the neuronal field, nor its interactions with the quantum field, but all of us see one level of this interaction as the physical world that seems to surround us. This perceptual world is just one level of the neuronal-quantum field interaction. Other levels are the emotional, tactile, aural and the other qualitatively distinct modes of our conscious experience.

In holography, it is known that the same frequency of laser light used to create the holographic interference pattern is needed to recreate the holographic image (Caulfield and Lu, 1970). If another frequency is used, the resultant recreation is not a clear three-dimensional image but a blurred and chaotic one. There must be a frequency congruence in order to obtain a holographic image. Something similar must happen before the central processor is able to activate a distinct level and quality of experience whilst interacting with the interference pattern associated with the energetic structure of our prceptual experience. Probably, the neurosyntergic level of the neuronal field has to correspond with some level of the syntergic organization of space in order to create a coherent interference pattern. If, for example, the syntergic level of space is greater than the neurosyntergic level of the neuronal field, the central processor would give rise to an image of transparency in an empty space.

The neuronal field is able to change its levels over a continuum. The same thing is true of the quantum field. The central processor interacts without constraint with innumerable levels of energy patterns. What makes conscious experience behave in a discrete fashion is that the interaction between neuronal and quantum fields results in a congruent interference pattern only when both fields share a similar syntergic level. The orbitals of consciousness correspond to these permitted levels of interaction where the syntergy of the neuronal field corresponds with some syntergic level of the quantum field. An extreme example of this correspondence is unitary consciousness. This level of consciousness will be treated later on in some detail. Here, it is enough to

say that, theoretically, it appears when the neuronal field is able to interact with the Aleph. In other words, when the neuronal field combines with the quantum field at the highest syntergic level that the latter is able to reach.

In unitary consciousness, the neuronal and the quantum fields regain their original nature by becoming one indivisible field.

3. THE CENTRAL PROCESSOR

Recent experimental evidence (Grinberg-Zylberbaum, 1983) indicates that the neuronal field is able to interact with a crystalline structure whose lattice dimensions are of the order of the wavelength of x-rays. This finding is the first known indication relating to the physical characteristics of the neuronal field. It suggests that the neuronal field is able to vibrate at the frequency of x-rays, but it does not say that this is the limit of the frequencies that the neuronal field is able to reach.

If, as was said before, unitary consciousness implies an identity between the highest syntergic quantum field level (the Aleph) and the highest neuronal field level, the limits for the frequencies that the neuronal field is able to reach must be much higher than the ones associated with X-rays. In fact, these limits are not calculable for unitary consciousness, because the frequencies that can be reached by the quantum field are not bounded. If the central processor's function is to transform the purely energetic structure of experience into conscious experience, the nature of the central processor must be such that it is able to include the energetic structure of the interference pattern within itself, even when the neuronal field becomes identical with the quantum field at its highest syntergic level. If this is so, the possibility of a non-physical nature for the central processor must be considered seriously.

The central processor as a non-physical entity would then be able to transcend the possibly infinite level of frequency of vibration that the quantum field reaches in the Aleph. In other words, if the central processor belongs to a non-physical reality, then it would be conceivable that it could transcend the limits of frequency in the physical universe.

How and where a non-physical reality is able to interact with a physical one, remains a deep mystery that an energetic model (that states that an interaction exists between the central processor and the interference pattern) is unable to solve. The same mystery arises in the kabalistic formulation which states that God sends emanations from his being which illuminate and give life to the discrete spheres of consciousness (sephirot) in which we human beings live (Epstein, 1978).

The central processor can be conceived as pure consciousness. When the interaction between neuronal and quantum fields has a complex structure, the central processor transforms this energetic structure into an image replete with forms and details. When the interaction reaches its maximum syntergic level and becomes homogeneous, the central processor experiences everything as a reflection of itself and thus the experience that is activated is unitary consciousness.

Between each one of the qualitatively different modalities of perceptual experience (sound, light etc.) and unitary consciousness, several orbitals of consciousness exist. Still, consciousness remains unchanged in all the orbitals. The central processor (the observer) is always the same; what changes in every orbital is the content of consciousness. This content is determined by brain activity because the neuronal field is more stable than the quantum field and the syntergic level (of the neuronal field) is determined by the particular and specific level of brain activity. Instead, the quantum field varies its syntergic level over the whole continuum that its syntergy can cover. In fact, the whole syntergic continuum of the quantum field coexists simultaneously in space. Also, the central processor always remains the same because, belonging to a non-physical reality, its activity does not depend on any syntergic level of energetic field. These considerations lead to an important conclusion which is that, in the absence of brain activity (after death), the central processor is still able to interact, but now not with the energetic structure of experience (the interference pattern resulting from the interaction between the neuronal and the quantum fields), but only with the 'bare' quantum field.

The syntergic level with which, after death, the central processor is still able to interact, will depend on at which level of brain activity the individual was able to function while alive and hence, what level of consciousness he was able to reach. If the individual was able to experience unitary consciousness, his *post mortem* content of consciousness will be pure consciousness. The consciousness of Being does not need any interaction bwtween the central processor and the quantum field in order to exist.

What determines the level of consciousness in which a human being functions is a question that needs consideration from both the psychological and physical aspects.

4. PHYSICAL AND PSYCHOLOGICAL CONSIDERATIONS

Prince Louis de Broglie (Beiser, 1968) confronted, in physics, the problem of the existence of discrete orbitals in the atom. His solution was extraordinarily elegant. He stated that each electron has an associated wavelength and that only when the perimeter of an orbital is an exact multiple of this wavelength, does the electron not disappear from the orbital.

Forbidden orbitals are those whose lengths are not an exact multiple of the

electron's wavelength. In these, the electron suffers a self interference wave process and hence is unable to exist.

In the realm of consciousness, there are also self interference processes. Strictly speaking, there is only one energetic field and thus unitary consciousness should be the most natural if not the only level of consciousness. In it, the dichotomy between the idea of the existence of a physical versus a non-physical universe is dissolved in the perception of an all-encompassing and global consciousness, in which everything is included. In other words, the illuminated human being living in unitary consciousness sees everything as just different levels of the same consciousness. The rest of us do not live in unitary consciousness because we are not pure enough and our neuronal fields are heterogeneous. Memories, repressions and fears, as energetic components pollute the neuronal and quantum field interactions. We are the ones that divide and dichotomize the One consciousness into compartments and sections.

Self interference processes appear in the realm of consciousness when the divisions which we impose on the world resist unification by ourselves into new wholes. It is as if disperse experiences, each with its own life, became antagonistic to one another and thus their unification in higher syntergic patterns and algorithms became impossible. What could be a new and more powerful syntergic level, degenerates into a low syntergic pattern in which interference, lack of organisation and poor connections between parts obstruct the achievement of unity. To live in a 'forbidden' level of consciousness is the result of these self interference processes. The forbidden levels are the interfaces between orbitals and, in them, open energetic irradiation and absorption processes are the characteristic experiences. The 'sufferer' in a interface feels himself to be a product of external influences which are beyond his control.

I would like now to introduce two other considerations. One is related to the cymatic (Jenny, 1974) interactions between fields and structures, and the other to the Zeeman effect (Beiser, 1968).

Cymatics (1974) is a relatively new experimental approach, in which patterns that result from an interaction of vibrating fields with structures, are studied. If a sound at some specific frequency interacts with a metallic plate on which fine powder is located, the powder acquires the form of a pattern. If the frequency of the sound is increased, the pattern becomes more complicated but maintains a basic structure. When the frequency reaches some threshold, the pattern becomes three-dimensional. If the quantum field is conceived as a structure with which the vibrating neuronal field interacts, creating cymatic patterns, the differing levels of consciousness could be related to discrete cymatic like patterns. On the other hand, in esoteric psychology, it is said that man has different energetic bodies (Wilson, 1974). These bodies are related to

discrete levels of consciousness. Perhaps, what is called 'energetic body' is a stable cymatic pattern. If this is so, some masters (Wilson, 1974) were able to visualize what is, for the rest of us, invisible cymatic-syntergic interactions.

I believe that man is in a constant state of evolution towards higher syntergic levels of functioning, pointing to unitary and the Being consciousness. In this evolution, real suffering is a state of dichotomy and lack of unification. When some contents of experience are dissociated from the focalization action of the directionality factor of the central processor, the individual is internally divided and in a state of pain, tension and imbalance. If, on the contrary, he is able to accept all his experiences as real and as a genuine part of himself, he permits his convergent codifiers to unify everything within himself into a congruent algorithm that is able to be transformed by the central processor into an integrated and coherent self-conscious experience. The secret of achieving unification and high syntergic levels of consciousness is total acceptance.

We live in a very complex world in which we are stimulated by powerful information fields. The interaction of these fields create new levels of experience.

In physics it is observed that, when an atom interacts with a magnetic field, new spectral lines appear. This phenomenon is called the Zeeman effect (Beiser, 1968) and is similar to the new experiences that we were discussing before.

In fact, when the laws of consciousness are compared with the behaviour of elementary particles, the feeling is that these two extremes touch each other. How is it possible that such a complex phenomenon as consciousness behaves in a similar way to atomic particles? The similarity implies that both realms are a manifestation of One reality.

Other examples of these simil are the radiation or absorption of energy from and to an atom when the electrons change from one to another orbital (Beiser, 1968) and similar energetic interchanges when a subject is in an interface between the orbitals of consciousness. During their quantum jumps the electrons behave as if they were simultaneously in two orbitals (Beiser, 1968). In the realm of consciousness, something similar happens when a change in consciousness occurs and the mind of the observer is still in an interface between orbitals. The individual then feels as if he were simultaneously in two levels of consciousness and in none of them and, as we have said, during this process he is open to receive or radiate energy.

5. THE NATURE OF THE CENTRAL PROCESSOR

If the central processor is the Self, it is included within every process and

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thought of the mind. In fact, the central processor is the observer of the mind. It is not affected by thought, emotion, pleasure or pain because it is part of its nature to be able to testify all these changes in mind's activity without changing or losing its capacity to observe them.

When a human being identifies himself with the Self, he transcends every and all relative and temporal changes in mind activity and becomes part of a kind of unchangeable silence from whence experiences appear and are seen as miraculous happenings standing out from a ground of empty fullness, and at the same time forming part of an immense and all-encompassing pattern of relationships. To the question about the individual or collective nature of the central processor, nobody can give a final answer, but intuition feels that the observer in each one of us is the One Observer, the self in each one of us the One Self and the central processor in each one of us the One Central Processor.

To conclude, it is possible to postulate that the central processor does not abide in any space, is atemporal and belongs to a non physical reality and has no shape or form.

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Research notes and comments

Scientific explanation of wave vector collapse

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In his reply (Villars, 1983) to my research note (Lawden, 1983) on the role of observing instruments in quantum theory, Villars does little more than argue that his approach to the problem of wave vector collapse is logically consistent. He fails to meet my criticism that he has no scientific explanation for the phenomenon.

Thus, to meet my charge that he fails to provide a principle by which an observing instrument can be distinguished from all other physical systems, he states that such an instrument is recognizable by the circumstance that it functions as required of such an instrument by the axioms of quantum theory. According to his interpretation of the theory, then, there are two classes of physical system, (i) a larger class comprising the generality of physical systems to which the Schrödinger evolution law applies, and (ii) a much smaller class of observing instruments whose behaviour is governed by other laws. He admits that he is unable to separate these classes by appeal to any physical criterion and falls back on the definition that an observing instrument is a physical system which behaves as an observing instrument. However, such an instrument only behaves in this manner in very special circumstances, viz. when it interacts with the specific type of class-(i) system it is designed to measure — in all other circumstances, it behaves like an orthodox class-(ii) system. Thus, a polarizer is a class-(ii) system when it interacts with photons belonging to a properly positioned incident beam, but its behaviour in all other circumstances (e.g. when it is heated) is that of a class-(ii) system. Very mysterious!

Even though Villars may be able to establish that this interpretation is logically unassailable, this is not the only requirement of a scientific theory. If such a theory is to provide an acceptable explanation of the world, it must eschew occult elements as far as possible. Thus, if it were established that all babies born on a certain day of the year were more likely to become actors than