

# Psychedelic induced experiences as key to the understanding of the connection between magnetic body and information molecules?

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June 20, 2019

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### Abstract

There is a book about psychedelics titled as "Inner paths to outer space: Journeys to Alien Worlds through Psychedelics and Other Spiritual Technics" written by Rick Strassman, Slawek Wojtowicz, Luis Eduardo Luna and Ede Frecska. The basic message of the book is that psychedelics might make possible instantaneous remote communications with distant parts of the Universe. The basic objection is that light velocity sets stringent limits on classical communications. In TGD framework this argument does not apply. In the article a model for remote mental interactions is constructed using basic notions of TGD inspired quantum biology such as magnetic body, dark photons, and Zero Energy Ontology.

## 1 Introduction

There is a book about psychedelics titled as "Inner paths to outer space: Journeys to Alien Worlds through Psychedelics and Other Spiritual Technics" written by Rick Strassman, Slawek Wojtowicz, Luis Eduardo Luna and Ede Frecska [J1]. The basic message of the book is that psychedelics might make possible instantaneous remote communications with distant parts of the Universe. The basic objection is that light velocity sets stringent limits on classical communications. In TGD framework this argument does not apply. Second objection is that the communications require huge amount of energy unless they are precisely targeted. The third objection is that quantum coherence in very long, even astrophysical scales is required. In TGD framework these objections do not apply.

In Zero Energy Ontology (ZEO) communications in both directions of geometric time are possible and kind of time-like zig-zag curves make possible apparent superluminal velocities. Negentropic quantum entanglement provides second manner to share mental images, say sensory information remotely. The proposed model leads to a general idea that the attachment of information molecules such as neurotransmitters and psychedelics to a receptor as a manner to induce

a remote connection involving transfer of dark photons signals in both directions of geometric time to arbitrarily long distances. The formation of magnetic flux tube contact is a prerequisite for the connection having interpretation as direct attention or sense of presence. One can see living organisms as systems continually trying to build this kind of connections created by a reconnection of U-shaped flux tubes serving as magnetic tentacles.

The natural TGD inspired hypothesis about what happens at the level of brain to be discussed in sequel in detail goes as follows.

1. Psychedelics bind to the same receptors as the neurotransmitters with similar aromatic rings (weaker assumption is that neurotransmitters in question possess aromatic rings). This is presumably consistent with the standard explanation of the effect of classical psychedelics as a modification of serotonin uptake. This binding replaces the flux tube connection via neurotransmitter to some part of the personal magnetic body with a connection via psychedelic to some other system, which might be even in outer space. A communication line is created making among other things possible remote sensory experiences.

Magnetic fields extending to arbitrary large distances in Maxwell's theory are replaced with flux tubes in TGD framework. The magnetic bodies of psychedelics would carry very weak magnetic fields and would have very large  $h_{eff}$  - maybe serving as a kind of intelligence quotient.

2. This would be like replacing the connection to the nearby computer server with a connection to a server at the other side of the globe. This would affect the usual function of transmitter and possibly induce negative side effects. Clearly, TGD inspired hypothesis gives for the psychedelics much more active role than standard hypothesis. This mechanism could be a universal mechanism of remote mental interactions.
3. Psychedelics can be classified into two groups depending on whether they contain derivative of amino-acid trp with two aromatic rings or phe with one aromatic ring. Also DNA nucleotide resp. its conjugate have 2 resp. 1 similar aromatic rings. This suggests that the coupling between information molecule and receptor is universal and same as the coupling between the two bases in DNA double strand and consists of hydrogen bonds. This hypothesis is testable since it requires that the trp:s/phe:s of the information molecule can be brought to same positions as phe:s/trp:s in the receptor. If also protein folding relies on this coupling, one might be able to predict the folding to a high degree.
4. A highly suggestive idea is that molecules with aromatic rings are fundamental conscious entities at the level of molecular biology, and that more complex conscious entities are created from them by reconnection of flux tubes. DNA/RNA sequences and microtubules would be basic examples about this architecture of consciousness. If so, protein folding would be dictated by the formation trp-phe contacts giving rise to larger conscious entities.

I have published the material of the article for about two years ago at my homepage in the chapter [K1] of "TGD Based View about Consciousness, Living Matter, and Remote Mental Interactions" and this article written for about one year ago is revised.

## 2 Some background about psychedelics

Psychoactive drugs can be classified into three basic types. Some raise the activity level (excitation), some calm down (inhibition), and some change the character of consciousness profoundly. Psychedelics/hallucinogens [J1] belong to the third group. Psychedelics (such as psilocin, psilocybin, DMT, LSD) containing aromatic rings and many of them (such as psilocin, psilocybin, DMT) attach to serotonin receptors.

As the official term "hallucinogens" implies, psychedelic induced experiences are regarded as hallucinations in the materialistic world view although the denial of the reality of subjective experiences themselves requires a really hard-nosed skeptic. The title of the book reveals that the question posed in the book is whether these experiences could be about real world, kind of sensory input from distant parts of the Universe. The indigenous people using ayahuasca and similar

psychedelics have regarded these experiences involving meeting of representatives of other civilizations as perceptions about real worlds. Also Terence and Dennis McKenna, who are pioneers of systematic study of the effects of various psychedelics, shared this view. In the materialistic ontology of standard physics this kind of interpretation is of course excluded. That hallucinations are in question is “obvious”, too obvious actually!

The classical psychedelics are psilocin and psilocybin contained by mushrooms, DMT found in ayahuasca, and mescaline found in peyote cactus. DMT is an endogenous psychedelic and there is pumping of DMT through blood-brain barrier so that DMT could have important brain function.

The aromatic ring structures of psychedelics and neurotransmitters (<https://en.wikipedia.org/wiki/Neurotransmitter>) involved provide a more concrete view about the situation.

1. Classical psychedelics are derivatives of two basic chemical groups: tryptamine and phenethylamine which in turn derive from the amino-acids trp and phe.
2. Trp (<https://en.wikipedia.org/wiki/Tryptamine>) is characterized by pair of aromatic rings (6-cycle and 5-cycle). Psychedelic psilocin (<https://en.wikipedia.org/wiki/Psilocin>), psilocybin (<https://en.wikipedia.org/wiki/Psilocybin>), DMT (<https://en.wikipedia.org/wiki/N,N-Dimethyltryptamine>) have 2 aromatic rings. Neurotransmitter serotonin (<https://en.wikipedia.org/wiki/Serotonin>) has also two aromatic rings.
3. Phe (<https://en.wikipedia.org/wiki/Phenethylamine>) has single aromatic ring (6-cycle). Psychedelic mescaline (<https://en.wikipedia.org/wiki/Mescaline>) has single aromatic ring. Neurotransmitters dopamine (<https://en.wikipedia.org/wiki/Dopamine>) and norepinephrine have one aromatic ring. Note that both serotonin, dopamine, and norepinephrine (<https://en.wikipedia.org/wiki/Norepinephrine>) are associated with mood disorders: clearly control in long time scales is in question, which in TGD framework suggests very large size scales for the parts of magnetic body involved.
4. Remarkably, DNA and RNA nucleotides can be classified to those with two aromatic rings (pyrimidines A and G) and their conjugates with one aromatic ring (purines C, T and U). Note that also his and tyr are amino-acids ([https://en.wikipedia.org/wiki/Amino\\_acid](https://en.wikipedia.org/wiki/Amino_acid)) with single aromatic ring ([https://en.wikipedia.org/wiki/Simple\\_aromatic\\_ring](https://en.wikipedia.org/wiki/Simple_aromatic_ring)). Information molecules involve often aromatic rings. For instance, hormones involve often complex rings structures. Also hydrophobic second messengers (such as cAMP) ([https://en.wikipedia.org/wiki/Second\\_messenger\\_system](https://en.wikipedia.org/wiki/Second_messenger_system)) involve aromatic rings.
5. LSD ([https://en.wikipedia.org/wiki/Lysergic\\_acid\\_diethylamide](https://en.wikipedia.org/wiki/Lysergic_acid_diethylamide)), which is synthetic psychedelic, has 3 6-rings and one 5-ring.
6. The classification of the neurotransmitter receptors ([https://en.wikipedia.org/wiki/Neurotransmitter\\_receptor](https://en.wikipedia.org/wiki/Neurotransmitter_receptor)) provides further insights. They are classified into two groups. Ligand gated receptors can be excited and inhibited by certain neural transmitters. G-protein coupled receptors ([https://en.wikipedia.org/wiki/G\\_protein\\_coupled\\_receptor](https://en.wikipedia.org/wiki/G_protein_coupled_receptor)) modulate the actions of excitatory (glutamate, aspartate) and inhibitory neural transmitters (GABA, glycine). Most neural transmitters bind to G-protein coupled receptors and this is true for classical psychedelics and for serotonin, dopamine, and norepinephrine. The first guess is that the presence of aromatic rings determines the character of the transmitter receptor pair and that G-protein coupled receptors having aromatic rings are above ligand gated receptors in the hierarchy and control them. They would correspond to two different levels in the hierarchy of magnetic bodies. Note that also LSD binds to G-protein receptors.

According to the book [J1], pineal gland might be in a special role concerning psychedelics.

1. Pineal gland is the only nucleus of brain, which does not appear as left-right pair: this suggests that its functions relate to a control of the entire brain in long time scales. Descartes regarded pineal gland as the seat of soul. Pineal gland is also known as “third eye” and in lower species it indeed serves the function of eye.

2. Pineal gland is responsible for the production of melatonin: the production rate varies with a circadian rhythm. Melatonin is a serotonin derived hormone and therefore has 2 aromatic rings: this suggests that the amount of serotonin is higher in pineal gland than elsewhere in brain. Melatonin helps in sleep disorders and affects also other parts of brain. One can ask whether melatonin is involved with establishing of distant flux tube connections during sleep - not only in pineal gland but also in other parts of brain - and whether these connections are built up during sleep.
3. There is some evidence that pineal gland can produce DMT from tryptamine (<https://en.wikipedia.org/wiki/N,N-Dimethyltryptamine>) *believed* to be released during dreaming, during spiritual and mystical experiences, and during the time of death. Taking the title of the book seriously, one can ask whether this eye is able to see also to cosmic distances possibly using large  $h_{eff}$  photons and whether DMT is involved.

### 3 Could instantaneous communications in cosmic scales be possible in TGD Universe?

In TGD inspired ontology the notion of magnetic body with astrophysical, galactic or even supergalactic size changes the situation completely. The basic communication tool would be touch of magnetic bodies generating reconnections and making possible signalling from the biological body to the member of distant civilization. The perception of the biological body of alien would differ in no manner from that of my neighbor since the mechanisms would be the same as involved with the transfer of sensory data to my personal magnetic body and control commands from there to biological body (at least through genome).

The basic objection against the possibility suggested by the title of the book is that finite light velocity poses absolute upper bound for the distance of objects with it is possible to be in contact during “trip”. One must be however very cautious here: the assumption that signals propagate only to singlet direction of time is essential also and derives from classical thermodynamics. In TGD framework second law continues to hold true but the arrow of geometric time for zero energy states changes in each state function reduction occurring to the either boundary of CD. Hence instantaneous communications (“remote seeing” !) using reflection in time direction become possible even over cosmological distances and define among other things the mechanism of memory in TGD Universe.

Time consuming and expensive space travel would become un-necessary: our magnetic body giving us cosmic size together with zero energy ontology making possible instantaneous “seeing” of both future and past by reflection of photons in time direction would be enough. Memory and anticipation would be basic examples about seeing in time direction. This view would also resolve Fermi paradox. We could be actually in a continual contact with the distant civilizations but without realizing it. One can ask whether similar contacts could take place in psychedelic induced experiences. Memories and future plans would be examples of “seeing” in time direction. The continual re-creation of the Universe by quantum jumps would of course mean that the actual future/past need not be same as those which are “seen”. Shamans identify various plants as conscious entities teaching them - in TGD framework this would translate to magnetic bodies of representatives of distant civilizations remotely teaching the representatives of more primitive civilizations.

What is the precise meaning of the catchy phrases “communications with geometric past/future”, “time reflection”, and “seeing in time direction”.

1. The recent view about state function reduction in Zero Energy Ontology leads to a precise identification of self as conscious entity. Self corresponds to a sequence of state function reductions leaving the passive boundary of causal diamond (CD) invariant and also Zero energy states correspond to superpositions of state pairs at opposite boundaries of CD. State function reduction leaves the member of the state pair at either boundary of CD (call it passive boundary) invariant - this is the counterpart of Zeno effect.

In the analog of unitary evolution following each reduction the position of active boundary is shifted to geometric future and the state at it is changed. This is the counterpart of

unitary time evolution at active boundary. The increase of the temporal distance between the tips of CD gives rise to the experienced flow of time. Negentropy Maximization Principle (NMP) eventually forces the first reduction to the opposite boundary of CD: self dies and re-incarnates at the opposite boundary and growth of the CD continues at opposite direction. The new self has arrow of time opposite that for the old one. The first state function reduction generates negentropic entanglement and can increase the value of  $h_{eff}$  so that evolution becomes possible.

2. In this framework geometric memories correspond naturally to time reversed sub-selves defining mental images. The space-time region (active boundary of CD) wherefrom they receive sensory information is indeed in geometric past of the self so that the interpretation as episodal memory makes sense. Also classical communications are naturally associated with sub-self and its time reversal. Note that precognition is memory from the point of time-reversed self. During sleep we precognize our geometric future.

Consider now communications with distant objects in this framework.

1. Negative energy signal would mean death of sub-self representing mental images and its re-incarnation in the geometric past accompanied by negative energy signal received by the new sub-self. The death of the time-reversed sub-self generates a sub-self with original arrow of time receiving the accompanying positive energy signal. The dying sub-self sends a signal received by its re-incarnation!
2. Communications with distant parts of the cosmos would be experiencing the time reversals of one's own mental images! We would be quite literally cosmic entities. Study of cosmos would be study of our own minds. In this situation mind is only conscious about itself. If Mind is conscious about other Mind it must fuse with it to single Mind by generating negentropic entanglement, otherwise it has no experience about other Mind. As far as conscious experience is involved, there is only one Mind. This is the TGD analog for One Mind theory and is able to avoid the paradox.

If the sub-self representing self model dies as one falls in sleep and re-incarnates as its own time reversal at the opposite boundary of CD, sleep could involve communications with distant parts of the Universe. Pineal gland generating DMT could play a key role in this process.

## 4 The role of magnetic body in communications

The first key idea is that molecules with aromatic rings are basic conscious entities at the level of biomolecules. Second key idea is that psychedelic-receptor complex serves as a plug-in to cosmic internet.

### 4.1 Why information molecules containing aromatic rings should be so important?

I have considered the question of the title in [L2] [?] ([http://tgdtheory.fi/public\\_html/articles/anesthetes.pdf](http://tgdtheory.fi/public_html/articles/anesthetes.pdf)). The basic idea is that aromatic ring can carry the analog of supra-current as electron pair and this current generates a dipole magnetic field represented as flux tubes around the ring. This makes molecules with aromatic rings basic conscious entities in living matter. The flux tubes can carry dark matter and if there are several molecules with aromatic rings near each other, reconnections can take place and give rise to larger structures with building bricks connected by pairs of flux tubes carrying supra currents and dark cyclotron photon signals.

DNA would be the fundamental structure of this kind. Each base-pair would contain  $1+2+1+1=5$  (two rings from sugars) aromatic rings and longer DNA sequences would define larger conscious entities. Microtubules contain also aromatic rings assignable to 2 amino-acids phe and trp appearing in the tubulin molecules. Of course, all proteins contain these aromatic rings possibly integrating by flux tube connections to larger conscious entities. In this picture it would not be surprising of the basic information molecules would also involve aromatic rings.

DNA letters A,G and their conjugates T,C have the ring structures of trp and phe respectively and base pairs in the double DNA strand correspond to trp and phe ring structures connected by hydrogen bonds. Could the information molecule-receptor protein coupling rely on similar couplings with trp and phe playing the role of fundamental plugs. This hypothesis predicts that more complex information molecule-receptor pairs should have geometries in which trp:s and phe:s can meet each other naturally. Also protein folding could involve similar trp-phe self-couplings by hydrogen bonds determining the folding to a considerable degree. Protein folding would be determined basically by the generation of negentropic entanglement dictated by NMP and its understanding would require quantum theory of consciousness.

## 4.2 Neurotransmitter receptor complex as plug-in to cosmic internet and a new perspective on remote seeing

If one - just for fun - takes seriously the claims of shamans, one must ask whether our brain has well developed tools available for building contacts with distant civilizations and what these tools might be. The receptors of neural transmitters are obviously the natural candidates for the pathways to cosmos. In the case of neural transmitters these would serve as pathways to the personal magnetic body (with onion-like structure). Neutral transmitters could be however replaced with psychedelics if they have a geometric structure allowing a binding to the corresponding receptors. If psychedelics have flux tube connections to very distant parts of the Universe, a connection is generated.

1. One can argue that evolutionary pressures have forced living matter to develop highly standardized connections to various parts of the personal magnetic body and possibly also other magnetic bodies. Personal magnetic body has astrophysical size and EEG frequencies would correspond to communications in Earth size scale. Receptors serving as Josephson junctions emitting Josephson radiation with frequency characterised by  $h_{eff}$  are natural candidates for plug-ins.
2. The model for cell membrane as Josephson junction leads at the microscopic level to the view that the proteins associated with various ion pumps, channels, and receptors (of also neurotransmitters in postsynaptic junction) define Josephson junctions to which magnetic flux tubes are associated and characterized by local value of Josephson frequency, that is membrane potential and Planck constant  $h_{eff}$ . As the information molecule is attached to a receptor, a connection to some part of the some magnetic body would be generated and split as the molecule is not present. These connections are possible in the scale cell, organelle, organ, organism, population and maybe even in the scale of cosmos. Psychedelics affect serotonin receptors so that serotonin spends longer time in receptor.
3. The simplest picture is that the connection corresponds to a pair of flux tubes. As the connection is broken, the pair has suffered reconnection cutting it to two U-shaped closed flux tubes. When molecule is attached to the receptor, these U-shape closed flux tubes reconnect. The actual situation is of course expected to be more complex but the basic principle would be this.
4. Neurotransmitters and also other information molecules can be seen as molecules at the ends of flux tubes having ends in some fixed subsystem X. The attachment of neurotransmitter to the receptor would builds a flux tube connection between postsynaptic neuron and X. The magnetic bodies in question characterised by passwords defined by collections of cyclotron frequencies corresponding to a hierarchy of space-time sheets. The Josephson frequency associated with the receptor is inversely proportional to  $h_{eff}$ . The natural guess is that it corresponds to the cyclotron frequency of the magnetic body part for electron, proton, or some ion associated with it. Josephson frequencies should serve as kind of passwords and receptors would be in one-one correspondence with these passwords defining gateways even to the outer space if the value of Planck constant is large enough.

The basic difference to ordinary view is that information molecules build only connections: after the establishment of a connection dark supracurrents and dark photons take care of the communication. Attaching the information molecule to receptor is like clicking a link in web.

5. Psychedelics would replace the ordinary neural transmitters building up this kind of flux tube connections in the normal situation so that the the connections could be to quite different places.

One might be able to test this crazy hypothesis.

1. Pineal gland could still serve as the “third eye” but utilizing large  $h_{eff}$  photons. Fishes and birds are able to navigate to their birth places. The strongest assumption is that the flux tubes connect birth place and place of migration.

This mechanism could involve dark electron Cooper pairs at the magnetic flux tubes of Earth’s magnetic field generated by visible photons with energies above energy of red light making possible to move along magnetic flux tube. As the direction of flight ceases to be along it and spin direction of cyclotron Bose-Einstein condensate changes, cyclotron transitions would induce dark photon emission at energy of visible photons in turn generating visual sensation serving as a signal allowing to correct the direction of flight. This would explain why radiation at MHz frequency leads to disorientation (cyclotron transitions are induced resonantly).

This need not be enough. Could also “remote seeing” by pineal gland using the dark light coming along flux tubes (or maybe even active variant of this process by sending light which is reflected back in time direction). What about remote seeing in the “usual” sense of the word: could psychedelics help also in this process?

2. The role of DMT is especially interesting. Body synthesizes it and pumps it through blood-brain barrier. I learned in private discussion that the experiences induced by DMT are relatively predictable (Terence Mac Kenna has described it as a sudden “dropping” to another world somewhere “below” through some kind of wall) whereas other psychedelic substances induce rather unpredictable experiences. Could it be that DMT corresponds to a permanent connection to some fixed external magnetic body or to a higher layer of level of personal magnetic body with permanent reconnection to some part other magnetic body? DMT as also other psychedelic substances would only help to induce the signal as Josephson radiation. This would be analog to the higher probability of remote mental interaction due to pre-bonding. What happens during sleep: is this connection generated during sleep: what about concentration of DMT during sleep in various brain regions.
3. The information molecule-receptor complex would be associated with the communications to a part of magnetic body determined by the flux tube assignable to the information molecule and possible communications from magnetic body as sensory experiences such as psychedelic experiences and mediated by radiation in opposite time direction. Also control commands from magnetic body - assumed to be realized as signals in opposite time direction as compared to sensory signals - are important and a natural assumption is that the commands initiating gene expression enter through genome via flux sheets traversing through DNA: the time scale for gene expression is slow and also other mechanisms are very probably involved. If both genome and cell membrane can (on general grounds it seems that they must do so) send signals in both time directions, the general vision about motor action as time reversal of sensory perception implies that cell membrane receives also control commands.

More generally, the complex formed by reacting biomolecules and catalyst could form a complex receiving control commands from the magnetic body. A temporary fusion of a catalyst molecule and of reacting molecules could serve as the analog of the information molecule-receptor complex. The protein Josephson junction associated with this complex would receive in a resonant manner cyclotron radiation from the magnetic body inducing a transition to a state in which the potential barrier preventing the reaction would be lower.

4. An interesting but ethically questionable test for the hypothesis would be following. Transfer neurotransmitters associated with the of subject B to the brain of person A, and see what effect they have on conscious experience of A. If the proposal is correct, person A would have flux tube connection to the magnetic body of B, and might receive some memories of B for instance. Could transplants induce similar effects? Heart transplants are reported to have strange effects suggesting that heart (having a lot of neurons) has emotional memories.

Irrespective of whether one takes seriously the thought game leading to this proposal, one must admit that it would provide deep for the notion of “information molecule”.

### 4.3 Still about the mystery of DMT

In FB I got a link to a very interesting article about DMT (N,N-Dimethyltryptamine, see <http://tinyurl.com/y8qrp8tc>). DMT (see <http://tinyurl.com/osfg9r3>) is psychedelic or hallucinogen - depending on one's attitudes. DMT is used for spiritual and healing purposes in many cultures. The effect is short-lasting: from 5 to 15 minutes. DMT induces mystical experiences, euphoria, dynamical geometric hallucinations of geometric forms, experiences about meeting of higher intelligences, extraterrestrials, elves, and even God.

First some facts about DMT.

1. DMT is found in both plants and animals and is the only naturally occurring psychedelic. Its occurrence in the pineal gland of rodents and therefore also of mammals has been reported.
2. Chemically DMT is a structural analog of serotonin and melatonin and involves aromatic 6-cycle and 5-cycle with common edge appearing in amino-acid tryptophan (see <http://tinyurl.com/przan6k>). Also DNA nucleotides A and G have this double cycle structure but have however more than one nitrogen atom.
3. The biosynthesis of DMT from amino-acid L-tryptophan (occurring endogenously in plants but not in animals) has been detected in rabbit's lungs. Whether DMT is produced by brain is still an unsettled question. It has been even argued that DMT is mere waste.

In TGD framework aromatic cycles serve as indication that molecule contains paired valence electrons with the value of  $h_{eff}/h = n$  higher than its standard value: this explains the delocalization of electrons to longer than atomic length scale.  $n$  would serve as a kind of intelligence quotient: the larger the value of  $n$  is, the larger the maximal value of entanglement negentropy of the system is (understanding of this statement requires going outside the framework of the mathematical framework of standard physics: I call this framework adelic physics [L4] [K2] (see <http://tinyurl.com/ybp74yf8>).

In this picture the interpretation as a waste does not look sensible and the proposal that DMT is produced by brain or some other parts of body looks more reasonable. Biology does not usually manufacture anything without purpose. Especially so, if the manufacturing process requires metabolic energy. The biosynthesis of DMT from tryptophan does not occur spontaneously and requires N-methyltransferase enzyme as a catalyst. Also the highly non-trivial positive effects of DMT on consciousness suggests that it cannot be waste.

To understand what the purpose of DMT could be, one must have some idea about sensory perception in TGD Universe (I have already earlier written about DMT and psychedelics [L1] (see <http://tinyurl.com/ycualn43>).

1. TGD view about sensory perception relies on the idea that sensory qualia are at the level of sensory organs: this view makes sense if one accepts macroscopic quantum coherence [L3] (see <http://tinyurl.com/yb99u6u8>). TGD based view about time (zero energy ontology (ZEO)) allow to circumvent basic objections such as phantom leg: pain in phantom leg would be sensory memory of pain and in geometric past when the leg still existed. These sensory memories can be produced by stimulating temporal lobes in any subject person. One also avoids the challenge of explaining why structures consisting of essentially identical neutrons can produce so different sensory qualia.
2. This model however requires virtual visual feedback from brain realized as dark photons, which leak to ordinary photons identifiable as biophotons with energied in visible and UV range. The presence of virtual visual input could explain why the retina has inverted structure not expected in engineerish thinking.

Sensory percept would be an artwork created by the perceiver. This conforms with the fact that when congenitally blind people receive their vision, they report only seeing of diffuse light. The percept would be a standardized sensory mental images emerging as an outcome



of iteration in which dark photons signals travel forth and back and give rise to a pattern recognition by transforming sensory input to standardized input nearest to it.

3. Dark photon signals would travel along magnetic flux tubes between brain to sensory organs and even between brain and magnetic body (MB) in much longer scales. Flux tubes would give rise to a connection network analogous to a telephone network. This network would have permanent part and dynamical part consisting of switches allowing to connect two flux tubes to single flux tube by a short bridge. Information molecules such as neurotransmitters, hormones, and messengers could act as switches/bridges: when the information molecule attaches to a receptor, the bridge is formed and signals can propagate.

Also nerve pulses could induce flux tube bridges between neurons of the neuronal pathway by using neurotransmitters and learning as amplification of synaptic connections would be essentially the gradual stabilization of these flux tube bridges. Nerve pulse patterns need not serve as communications inside brain but could only make possible communications in much shorter time scales using dark photons. For 1 meter long axons about million forth and back signals are possible during millisecond.

Nerve pulses would however frequency modulate Josephson radiation from the generalized Josephson junctions defined by membrane proteins serving as ion channels. This modulation would code nerve pulse patterns to signals to MB mediated by EEG: EEG could also have fractally scaled variants corresponding to various layers of MB. This would explain the function of EEG.

4. Virtual sensory input need not always end up down to the sensory organs: there would be some kind of blocking stopping the virtual sensory input to higher level so that one would have only almost sensory percept: an imagined sensory experience. The virtual sensory input associated with imagination could proceed along different route than that associated with the buildup of percept. Also imagined motor actions would be halted motor actions. During REM sleep the blocking would not be present and the virtual sensory input would enter to sensory organs, in particular retina.
5. Pineal gland represents a kind of photoreceptor, "third eye", which still serves as eye in some animals. Could the dark photons involved with imagination be received in pineal gland. Could they continue to travel to sensory organs during dreams and hallucinations? Pineal gland would be an organ of imagination besides serving as seat of soul! What is nice from the point of view of biological economy is that pineal gland would not be useless evolutionary remnant but would have found a new function.

Accepting this schematic view one can ask about the possible function of DMT.

1. DMT molecules could make possible REM dreams by providing the bridges making possible the propagation of dark photons to the retina. Pineal gland would be the natural relay station. Same mechanism could work for other sensory modalities if dark photons mediate the virtual sensory input transformed to ordinary percept at sensory organs. Also hallucinations would rely on this mechanism.
2. MB has very large layers, there is even evidence that galactic magnetic field is in contact with personal MB (personal MB could have flux tubes inside flux tubes of galactic magnetic field). Since magnetic field in Maxwellian world extends to infinity and since in TGD systems have field identity (field body/MB), one can even image that there are connections to distant civilizations with very weak magnetic field strengths at corresponding flux tubes carrying dark matter.

These connections could make possible a genuine sharing of sensory experiences and the encounters with ETs and alike could be genuine remote meetings! We might have these encounters during sleep quite routinely but would not remember anything since the sensory information would stop at the third eye! Only during dreams situation might change but also now sensory input would be virtual and represent imaginations.

**Remark:** I have told many times that I am working intensely and close my eyes lightly, I see a dim flow consisting of points and resembling an incompressible hydrodynamic flow. There are vortices and the flow goes back and forth. The flow lines are mathematically equivalent with field lines of a magnetic field in Maxwell's theory and in TGD with flux tubes of MB in 1-1 correspondence with the points of the flow. Could this be seeing MB with the "third eye"?

## REFERENCES

### Neuroscience and Consciousness

- [J1] Strassman R et al. *Inner paths to Outer Space*. Available at: <http://www.amazon.com/Inner-Paths-Outer-Space-Psychedelics/dp/159477224X>. Park Street Press, Rochester Vermont, 2008.

### Books related to TGD

- [K1] Pitkänen M. Meditation, Mind-Body Medicine and Placebo: TGD point of view. In *TGD based view about living matter and remote mental interactions*. Online book. Available at: <http://www.tgdtheory.fi/tgdhtml/tgdlian.html#panel>, 2012.
- [K2] Pitkänen M. Philosophy of Adelic Physics. In *TGD as a Generalized Number Theory*. Online book. Available at: <http://www.tgdtheory.fi/tgdhtml/tgdnumber.html#adelephysics>, 2017.

### Articles about TGD

- [L1] Pitkänen M. Psychedelic induced experiences as key to the understanding of the connection between magnetic body and information molecules? Available at: [http://tgdtheory.fi/public\\_html/articles/psychedelics.pdf](http://tgdtheory.fi/public_html/articles/psychedelics.pdf), 2014.
- [L2] Pitkänen M. TGD based model for anesthetic action. Available at: [http://tgdtheory.fi/public\\_html/articles/anesthetes.pdf](http://tgdtheory.fi/public_html/articles/anesthetes.pdf), 2015.
- [L3] Pitkänen M. Are we all artists?: or what my "Great Experience" taught me about consciousness. Available at: [http://tgdtheory.fi/public\\_html/articles/greatexperience.pdf](http://tgdtheory.fi/public_html/articles/greatexperience.pdf), 2017.
- [L4] Pitkänen M. Philosophy of Adelic Physics. In *Trends and Mathematical Methods in Interdisciplinary Mathematical Sciences*, pages 241–319. Springer. Available at: [https://link.springer.com/chapter/10.1007/978-3-319-55612-3\\_11](https://link.springer.com/chapter/10.1007/978-3-319-55612-3_11), 2017.