

# Are we all artists?: or what my “Great Experience” taught me about consciousness

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## Abstract

Are all of us artists? My answer is that we indeed are artists - all of us. This is what my “Great Experience” taught me about consciousness before I had any theory of consciousness. Ten years after this experience I started to work systematically with the problem of consciousness - that is to write a book, which is the only manner I can keep the diverging ideas under control.

What I claim that the construction of sensory mental images is not a passive process but a creation of an artwork, kind of caricature giving a representation of sensory input optimal as far as survival is considered. This means decomposition of the sensory input to features and picking up the key features relevant for this purpose. In this article I describe how my “Great Experience” supports this view.

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## 1 Introduction

Are all of us artists? This is the question posed in the title of the article. I could immediately answer the question: we are artists - all of us. This is what my “Great Experience” taught me about consciousness before I had any theory of consciousness. I started to work systematically with the problem of consciousness - that is to write a book, which is the manner I work - only 10 years after this experience.

What I claim is that the construction of sensory mental images is not a passive process but a creation of an artwork, kind of caricature giving a representation of the sensory input optimal as far as survival is considered. This means decomposition of the sensory input to features and picking up the key features relevant for the survival.

This section is a written and slightly longer version of a talk in which I tell about the role of vision in sensory experience seen in the theoretical framework provided by TGD inspired theory of consciousness. I decided to tell about my “Great Experience” around 1985 since it divides my life to two parts: life before and after this experience, and because this experience provided fascinating

insights to consciousness and perception, not only visual, but also hearing and proprioception (body experience). I have told about this experience in my homepage (see <http://tgdtheory.fi/>) and in some material in books and articles to be found there (for instance).

There are online books about TGD proper (see <http://tinyurl.com/y89e3wn6>) and published books [K1, K4]. For TGD inspired theory of consciousness and quantum biology see the online books at my homepage (see <http://tinyurl.com/ycd318h1>) and the published book about consciousness and quantum biology [K2]. The article “Philosophy of Adelic Physics” [L2] explains the recent vision about the mathematics forced by consciousness theory.

## 2 The time before “Great Experience”

It is good to start from year 1977, say October. After running basic courses up to licenciate courses in theoretical physics, I had spent few years in a kind of Odyssea. I had a strange conviction that I would do something great! I was of course fully aware that telling this openly would raise eyebrows but I could laugh for it only in the company of close friends. Many young people have this kind of conviction and there is nothing bad in this. Academic environment of course destroys this kind of dreams.

I had had several unsuccessful ideas but then everything changed. I really got the idea of century, as was clear from the beginning! I had been pondering a problem related to General Relativity. The notion of energy is not well-defined. This is a simple fact that even first year student should understand but Einstein’s fully deserved authority is so huge that it is useless to try to explain the problem to an average colleague. Those who realize that the problem is real, say that gravitational interaction is so weak as compared to the other interactions that you can safely see this as a beauty spot of a marvellous theory. What adds to the irony, is that the classical conservation laws play a fundamental role in quantum field theory and gravitation has turned out to be a notoriously difficult to quantize. Even superstrings and M-theory failed to realize the dream. This should put bells ringing.

As a loner I was however not aware about what is socially suitable I saw nothing problematic in pondering this problem seriously. And then it came, the idea! For God’s sake, if space-times are 4-surfaces in certain higher-dimensional space the problem completely disappears. This space would be Minkowski space with points replaced with very small compact space. It soon turned out that this vision can be regarded also as a generalization of string model with strings (then hadronic strings then) replaced with 3-D surfaces (super-string theory came in fashion for 6 years later). It took two years to realize that the choice of the imbedding space is unique from the condition that the standard model interactions (electromagnetic, weak, and strong) are obtained besides gravitation.

I was so convinced about the power of the idea that I marched to meet a professor and told that I have discovered an idea of of century! And also told that I would be happy to have a research position to continue work it. After two weeks I was told that my services it the department of theoretical physics of Helsinki University are not needed anymore.

I had to find some manner to fulfil the life mission that I had just identified, and I had good luck. I got a kind of unemployment job as an office worker in the Physics Laboratory of Technical High School. I was probably expected to become a good corporate operating citizen in this manner but it was too late to do anything anymore: I wrote a thesis work about my great idea during the next four years.

Nowadays this would be a criminal act but hippie era had left behind it kind of tolerance to new ideas and I was allowed to work rather freely with the idea. After four years work the thesis was published as article in International Journal of Theoretical Physics and J. A. Wheeler regarded the work as brilliant. I took the thesis and the referee statement and went to the same professor and told about my intentions. He did not have any other choice than to ask opinion from two professors: the first one regarded the work as brilliant and second one debunked it. Thesis had to accepted and the professor became my formal adviser.

For a brief period I thought that days of economic anxiety would be over and it would be possible to enjoy funding and get a research position. This turned out to be impossible. I had to invent some manner to make money and at the same time develop TGD further. I went to an IT course and learned the basics. Correction fluid and typewrite were replaced by text process, which

was a really big practical step forward.

I went to a job in big oil company. My task was to model de-sulphurization of oil. Nothing bad in this but this was not meant for me. I felt deep self disgust for serving two masters simultaneously while sharing my life to few months long pieces of TGD and money making. I had also to spend 3-4 hours in day to the mere driving to the job and after year or so I was mature for burnout as the term goes nowadays. I was in high fever and unable to work. No-one knew what the problem really was but certainly psychologically impossible situation was the deeper cause of it.

During this period I had the “Great Experience”. After it I was mature to leave petroleum industry and find some kind of job allowing to continue my work with TGD. Then something very positive and unexpected happened. I was invited to Schrödinger centennial and made a visit to Einstein’s summer house to talk about my work. This had dramatic effect in local authorities. I got a job as a full-time teacher in Dept of Theoretical Physics but still there was no hope about research position. After 6 years I made very stupid thing and applied for “dosentuuri”: I would be docent enjoying no special salary but allowed to lecture about my own research work. In their statement two young finnish professors labelled me as a madman and I became an academic corpse. I left the University.

### 3 “Great Experience”

The “Great Experience” began with very intense sensory experiences. Later emerged also an active virtual sensory input, which could be regarded as hallucinatory or psychedelic component or something else - depends on one’s tastes.

#### 3.1 Very intensive sensory experiences

In the beginning the experiences were very intense sensory experiences, oth visual, auditory experiences, and proprioception (body experience). The experiences often began with an amplification of heard sounds, say sound of a refrigerator. At the same time I had sensation analogous to cold shivers travelling along spine but now through the entire body like waves. My body also began to oscillate like a bed of reeds in wind in sea. I had a strange sensation that the refrigerator is attracting me towards it! I had a fear that my mind fuses to it somehow, and often stopped the experience.

What was remarkable was the extreme purity of these experiences. No sensory noise, no tingle as usually. I called this experience “whole body experience”. Now I would interpret it as a phase transition to large  $h_{eff}/h$  phase establishing macroscopic quantum coherence in the scale of the entire body.

Some examples are help to understand what was involved. Consider first purely visual experiences.

1. In my neighbor lived a couple: both were doctors. I had been for about week in fever and the wife, a very friendly woman, came to see what might be the problem with me. I was surprised to see that her face literally radiated light. Only much later I realized that this might have been the aura t which some people claim to be able to see.
2. Second example of a very intense visual experience was created by Renoir’s painting. The painting describes a street cafe in spring, in May perhaps. There is erotics and flirt in the air and the faces of young people radiated light. There was extremely strong feeling of real presence. I felt like standing on the street in a frozen moment and time could start to flow again at any moment.
3. Third example. I was walking along path in wood. It was a beautiful Sunday in May. No snow anymore. There were little ponds and the sunlight was reflected from the surface of water and the reflection of trees on pond was like another world. There was a majestic silence and everything was shining. This kind of silence is of course not a lack of auditory consciousness as little as darkness is a lack of visual experience.

I experienced that the world was completely pure without any dirt, just like my body in the whole body experience. I pondered whether all the dirt usually present in sensory experience

is only due to the experiencer, rather than being a fault of reality. By replacing dirt with suffering one ends up to a problem, which so many thinkers have pondered: is suffering only the outcome of ego?

There were also intense experiences involving music.

1. The first experience was stimulated by a piece by Debussy: Golliwog’s cakewalk, a piece for children. I have though that Golliwog is a frog but I learned that this is not true: it is kind of imagined figure, rag doll (see <http://tinyurl.com/pukdj42>). The piece was played by a Japanese Hammond virtuoso, whose name I failed to find. The experience was fascinating in its surrealism and I felt how strong pulses from subconscious accompanied it.
2. Second experience involved both music and vision. I was seeing an animation about the evolution of life at Earth from TV. The music was Ravel’s Bolero. The volume of sound increased steadily symbolizing the emergence of new life forms. As one might guess, the life and to escape Earth after human kind had destroyed the prerequisites for civilized life. Also now the strange surreality was present.

For some time I thought that my sensory experience had permanently intensified, and the eventual return to a normal consciousness was a great disappointment. I find now easy to understand we cannot enjoy deep euphoria continually. The generation of mental images requires metabolic energy and this does not favor those aspects of experience, which do not directly support the survival. We are like gardeners: the plants, which are not useful plants or ornament plants, are weeds and must be eliminated. Artists can have ornament plants in their mental garden - provided they can sell them at the market!

In the market economy based on furious competition this leads to a monoculture of consciousness. People are extremely specialized due the requirement of extreme effectiveness. For instance, students are not anymore allowed to spend few years in the intellectual Odyssey as was possible in my student days - this was partly thanks to the hippie era which changed the attitudes of students. We listen the same music, see the same movies, and spend our time in internet chatting. This rise of monoculture is very similar to the rise of biological monocultures leading to the disappearance of animal and plant species.

## 3.2 “Psychedelic” experiences

At later stages of the “Great experience” there was also an active component superposing with the sensory input. Depending on one’s attitude this component could be called hallucinatory or psychedelic. For me this component was not all hallucinatory: some of the key ideas of TGD inspired theory of consciousness emerged already during the experience and as a result of pondering this experience. These experiences completely destroyed my naive materialistic world view about consciousness and life to which I have been harshly conditioned during 5 years as physics student. I realized that we do not have a slightest idea what consciousness and life really are. It is frustrating to see that after more than 3 decades most scientists and laymen still share the same delusion.

### 3.2.1 Freud was right!

The “psychedelic” experience (I have no personal experience about psychedelics so that the term might be misleading!) began as I was lying in the corridor of the health center. I had a horrible head ache and I realized that keeping eyes gently closed it was not quite so intolerable. I suddenly realized that my visual field contains a kind of hydrodynamic flow consisting of points going forth and back and containing vortices. I see this kind of flow also when I am writing and have very calm state of mind: it is however much dimmer. [Going theoretical: I would like to interpret the flow in terms of something flow along magnetic flux tubes: magnetic flux is indeed mathematically analogous to incompressible flow.]

There was however also something else. An array of what looked like computer monitors or cartoon boxes. In each box something very wild was taking place. Salvador Dali and Hieronymus Bosch were the artists, whose works this vision brought into my mind. The boxes contained strange creatures, half animals and half human, also humans, which were half males and half women. There was sex, physical violence, blood.

I had learned about the works of Freud during my school days at age of fourteen or so (perhaps too early!). During student years I ceased to take seriously his theories. This experience however forced me to realize that Freud was absolutely right about Id-ego-super-ego trinity: Id was what I saw! I had however doubts whether it can be really me who has this kind of visual imagination: could these images flow to my retina from collective consciousness?

What would TGD inspired theory of consciousness say about this. I believe that if physicist tries seriously to develop a theory of consciousness, the outcome predicts almost unavoidably a hierarchy of conscious entities since also physical systems form hierarchies. This kind of hierarchy would generalize the Id-ego-superego trinity of Freud.

It is also natural to assume that conscious entity experiences the entities below it and associated with its subsystems as mental images. This has surprisingly strong implications. My mental images die and are reborn continually. I am a mental image at the next level of hierarchy, perhaps kind of collective consciousness. Also I should reincarnate! If my mental image is very unpleasant, I do not allow it to be conscious: no metabolic feed and the mental image dies! Same should apply to me as a mental image. Maybe I have been especially unpleasant mental image in the collective consciousness of the community of theoretical physicists: at least I have not enjoyed a single coin of metabolic feed during these decades!

The hierarchy of conscious entities means pan-psychism in the sense that conscious entities can exist in all scales. In TGD many-sheeted space-time, p-adic length scale hierarchy, and the hierarchy of Planck constants  $h_{eff}/h = n$  implied by the adelic physics would serve as correlates for this hierarchy. It is interesting that also the IIT (integration information theory) of neuroscientists Tononi and Koch [J1] (for TGD inspired comments see [K3]) assumes pan-psychism. Neuroscientists are forced to give up the naive brain centered view about consciousness.

### 3.2.2 Meeting the “Great Mind”

I found it very difficult to understand how I could have this extremely vivid visual imagination and concluded that I have got a contact to what I called “Great Mind”, maybe some kind of collective consciousness. I realized that I have a marvellous opportunity to ask all great questions bothering me and get answers! I also discovered that I can imagine of writing my questions on the computer screen in my visual field. The question appeared in it as beautiful calligraphy and were followed by an answer represented as a visual image, often dynamical. I understood also that there are two languages. The language of words and the language of images and there might be even a dictionary between them!

I started to build this dictionary! I wrote word and and got a visual symbol as a response. Eventually I had the courage to write even the word “death”. The response was a symbol representing total blackout: all skin hair in my body stood up and I was horrified.

I also wrote a question “How long I will live?”. The answer was humorous. It was like an odometer of car with very many digits running wildly. I understood that I would live forever! Later I learned that I would re-incarnate again and again in other galaxies and even in other Universes: about the latter I could not make sense then in TGD framework and was a little bit annoyed!

The idea was there are two languages and the visual language would not be conscious to me. These language are indeed very different. Written or spoken language are very abstract: “house” represents entire equivalence class of houses, which can look very different but sharing some abstract features defining “houseness”. Very few digits are needed to express a given concept and this makes possible highly effective verbal communications distinguishing our species from others.

The image of a house (unless a symbol) provides a concrete representation of a particular house and requires a large number of bits. Images provide a holistic representation based on 2-D geometry not provided by written language or speech. Consider as an example a graph with nodes and links between them representing a structure of some complex systems with a lot of mutual relationships. It is rather tedious to represent this using only words. Algebra and geometry clearly correspond to language as text and language as images.

Interestingly, there is some evidence that dolphins have a language based on acoustic holograms: could it be that dolphins have developed acoustic languages based on 2-D acoustic analogs of visual images. Also human written languages have developed from words represented as images and only

later came the abstraction decomposing words to letters having no direct meaning analogous to the decomposition DNA codons to letters. In chinese letters are still much like images.

### 3.2.3 Are there also other two-country nationals?

I had also another experience with active component. I was also now lying on the corridor of health center and looking at the tiles in the roof and listening to a quite music. The tiles were dancing in the rhythm of music and inside them something very lively was taking place. I thought that perhaps there is really another world there, and I am able to perceive this other world. I wondered whether there are also other citizens of two worlds. How to get a contact with them? I certainly cannot go and tell to anyone about dancing tiles in the roof and what happens inside them!

It however turned out that this worry was premature. I became ordinary citizen again and although I sorely yearned for these experiences. They came only occasionally when I was falling asleep and lasted for a short time. A year or two later I had however a similar experience lasting for one night. Also it had profound effect on my life.

## 4 We are all artists!

The “Great Experience” inspires the idea that we are all artists: the process giving rise to mental images is an active process building a kind of caricature picking up just the relevant features and suppressing the irrelevant ones. The following argument makes this claim more precise.

1. In some cases people who are congenitally blind can get their vision back. They do not however have any use for this ability: they report only a perception of diffuse light. This suggests that the perception involves a lot of processing analogous to that occurring in the pattern recognition, in which one has input, which generates a feedback - kind of virtual sensory input - depending non-linearly on input and interfering with it. The iteration of this process leads to a standard pattern, one in the repertoire of learned patterns and the feedback is tailored so that the pattern is as near as possible to the input. For instance one half of picture can be completed to the full figure in this manner. Pattern recognition is central problem in robotics. The robot must be able to recognize same object in various lightings and orientations, or by seeing only part of it. The object must be also distinguished from other objects. The same challenge is encountered in speech recognition.
2. This suggests that that the feedback is virtual sensory input propagating to the level of sensory organs, such as retina. In principle, the feedback could also stop at a higher level and never reach the sensory organs. REM sleep and oto-acoustic sounds (heard even by outsiders in some cases!) however suggest that feedback propagates down to the sensory organs. If so, virtual sensory input from brain or via brain would be an essential part of sensory perception. Brain would also give names for the objects of perceptive field created in the process and build various associations. This would also lead to standard mental images making possible communications using language distinguishing us from the other species.

This view would strongly suggest that the sensory qualia are at the level of sensory organs: this would be very natural since they are specified to produce specific qualia. Quantum entanglement between the sensory images would bind different sensory inputs to single coherence experience. This requires macroscopic quantum coherence in the scale of entire body and in TGD the hierarchy of Planck constants  $h_{eff}/h = n$  makes this possible.

3. Phantom leg experience serves as an objection against this idea. A person without leg lost in say traffic accident can feel pain in it. This should not be possible if the leg is missing since the nerve cells are not there anymore. Neuroscientist concludes that sensory qualia are generated at the level of brain and the pain is in the still existing sensory map of the leg. Sensory qualia should be assignable to the sensory areas. The problem is that nothing in the structure of neuronal circuitry suggests an explanation for why the qualia are so different in various sensory areas.

The most natural TGD based explanation is that pain in the non-existing leg is pain in the leg, which still exists in the geometric past - sensory memory. Sensory memories are indeed

possible. Idiot savants are capable of memory feats (say drawing a memory of a landscape in full detail or playing music piece that they have heard), which could be understood if they have sensory memories as genuine sensory experiences. Also ordinary people can have sensory memories if neurons in parietal lobes are excited electrically. A good reason for having no sensory memories is that they would interfere with sensory input and one would not know what time one is living in! I remember that my Grandma lived at very old age many years in her childhood. She was even going to a ball! Wonderful gift to lift youth again after long and hard life!

This makes sense in zero energy ontology (ZEO) in which perceptive field corresponds to a 4-dimensional causal diamond (CD) identified as the intersection of future and past directed light-cones. That sensory memories can be generated by the electrical stimulation of parietal lobes even in ordinary subject person supports this view. This could also explain why persons with about 10 percent of brain left can survive: they could use the brains of their geometric past!

4. What about imagination in this framework? Imagination is almost experiencing: almost seeing, almost hearing. Internal speech is almost talking. This suggests that the virtual sensory input from the brain or via the brain (from magnetic body) almost reaches sensory organs but not quite. For instance, in the case of vision signal could propagate down to the nuclei known as optic chiasma but not below it. Note that the sensory feedback in sensory perception should propagate down to the sensory organs if sensory qualia are there. The barrier preventing the generation of genuine virtual sensory input could be however overcome in special situations and induce hallucinations or psychedelic experiences. Same applies also to imagined motor actions.

[Going theoretical again: In adelic physics imagination can be understand in terms of p-adic space-time sheets. Strong form of holography (SH) allows to continue 2-D data at certain 2-surfaces to 4-D surface in p-adic sectors of the adele thanks to the phenomenon of p-adic pseudo-constants replacing integration constants with piecewise constant functions depending on finite number of binary digits in partial differential equations. What is imaginable in this sense is not however always realizable since in the real sector integration constants are indeed constants and there is no flexibility of this kind! In the recent case imagination realized as p-adic perception would not allow continuation to a full perception in real sense and signal would not propagate to the sensory receptors. ]

5. What happened in the later stages of Great Experience? It seems that somehow the feedback associated with imagination managed to leak through the barrier preventing its manifestation as a genuine sensory input. Quantum criticality would have been in question. Hallucinations, psychedelic experiences, dreams, and the experiences occurring when one falls asleep or wakes up, provide examples of this. This kind of leakage cannot happen always since it would be very dangerous. Brains are known to have its own psychedelic, DMT: could it have a role in making REM dreams possible?

Tesla is a well-known example of a person who saw his thoughts. This made him a technological genius. Many great composers have also heard music directly. For instance, Tchaikovsky suffered in his childhood from the continual music played in this head. Oliver Sacks tells about this kind of experiences in his book “Musicophilia” [L1] (see also the article [L1]).

The conclusion would be that we are artists of our own life. If one wants to build a better world, one could ask whether there could be some kind of program for achieving this. Could it be a good idea to use more hours for arts in the elementary school and in all education? The challenge would be to motivate the children to realize that they can learn to virtuosos of sensory perception and perhaps even artists in the ordinary sense of the word.

I known from a personal experience that this is possible. At the age of twenty the music of many composers left me cold: I could not comprehend it. After more than four decades I can enjoy almost any music provided it is complex enough. Also morning walk is a marvellous experience and with my eyes suffering from cataract I probably see much more than with the eyes of of twenty-year old! Our senses are the best gift that we have and at least in this age one can enjoy life by just perceiving.

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