

# Two manners to learn and what goes wrong with vulgar skeptics?

M. Pitkänen

Email: [matpitka6@gmail.com](mailto:matpitka6@gmail.com).

<http://tgdtheory.com/>.

June 20, 2019

## Abstract

The proposal of the article is that there are two kinds of learnings. The learning by conditioning and learning by discovery. In this article the learning by discovery is proposed to correspond basically to a quantum jump increasing the value of the effective Planck constant  $h_{eff} = n \times h_0$  with  $n$  having interpretation as dimension of Galois extension in adelic TGD measuring the algebraic complexity of the system, and also as a measure for the scale of quantum coherence.  $n$  serves also as a kind of universal IQ in the TGD based model of living matter and increases in statistical sense - this implies evolution. This view is applied to what I would call ultra-skeptic cognitive syndrome making it impossible to imagine any alternative approaches besides the standard one accepted as a set of conditionings reinforced by emotional rewards.

## 1 Introduction

I had with two fellows - I call them A and B - an “entertaining” although not totally pleasant discussion, which taught a lot, I hope also for A and B -, and actually gave a good example of two kinds of learning. Learning by conditioning and learning by discovery. It also led to a possible understanding about what goes wrong in what I would call ultra-skeptic cognitive syndrome.

**Remark:** This discussion by the way gave me good laughs. A summarized his academic background by “studied strings” an B was a Bachelor in computer science but pretending to be M-theorist. They tried to demonstrate that I am a crackpot. They carried out an “investigation” following the principles of the investigations made for witch candidates at middle ages. The victim had two options: she drowns or not in which case she is burned at stake. I guess that my feelings during the examination were very similar to those of witch candidates.

The highly emotional discussion was initiated by a totally non-sense hype about transferring consciousness of C Elegance to computer program (see <http://tinyurl.com/y8wnyxxr>). I told that the news was hype and this raised the rage of A and B. The following considerations have very little to do with this article. Note however that I have done some work AI in general and even with the basic ideas of deep learning. For instance, we had two years ago a collaboration about AI, IIT approach to consciousness, and about a possible connection with remote mental interactions together with Lian Sidorov and Ben Goertzel, who is behind Sophia robot. There two chapters related to this [L3, ?] (see <http://tinyurl.com/zwqbj8y> and <http://tinyurl.com/zq8k3j1>). I think that the latter chapter is published in a book by Goertzel. There is also a critical article inspired by Sophia robot about which Ben Goertzel wrote an enthusiastic article and sent to Lian Sidorov and me [L4] (<http://tinyurl.com/y75246rk>).

## 2 The two manners to learn

As I already mentioned, there are two manners to learn: learning by conditioning and learning by discovery.

## 2.1 Learning by conditioning

The first kind of learning is learning by conditioning, which deep learning algorithms try to mechanize (for TGD view see [L4, L3]). Second kind of learning is learning by discovery impossible for computers because they obey deterministic algorithm and are unable to do anything creative.

Emotions play a strong role in the learning by conditioning in the case of living systems and in the simplest form it is learning of X-good and X-bad type associations helping C elegance to survive in the cruel world. In the case of humans this kind of associations can be extremely dangerous as for instance the recent course of events in USA has shown.

Very large part of our learning is just forming of associations: this is what Pavlov's dogs did. In school we learn to associate to "2×3=" symbol "6". In our youth we learned also algorithms for sum, division, multiplication and division, and even for finding the roots second order polynomial. Often this is called learning of mathematics. Later some mathematically gifted ones however discovered that this is just simple conditioning of an algorithm, and has very little to do with genuine mathematical thinking. The discovery of the algorithm itself would be mathematical thinking. The skill to code for algorithm - usually given - is also an algorithm and it can be also coded in AI.

If we are good enough in getting conditioned we get a studentship in University and learn science. This involves also learning of simple conditionings of type X-good and X-bad. In this learning social feedback from others reinforces learning: who would not like to earn the respect of the others!

For X-bad conditionings X can be homeopathy, water memory, cold fusion, telepathy, remote viewing, non-reductionistic/ non-physicalistic world view, quantum theories of consciousness, TOEs other than M-theory, etc... For X-good conditionings X can be physicalism, reductionism, strong AI, superstrings, Witten, etc...

The student learns also to utter simple sentences demonstrating that he has learned the desired conditionings. This is important for the career. Proud parents, who hear their baby say he first word encourage the child. In the same manner environment reinforces the learning of "correct" opinions by a positive feedback. The discussion with A and B gave a quite a collection of these simple sentences. "I guessed that he is a crank" from A is a good example intended to express the long life experience and wide wisdom of the youngster.

These conditionings make it also easy "recognize" whether someone is a crank/crackpot/etc... and even to carry out personal "investigations" whether some-one is a crank or not. This is what A and B in their young and foolish arrogance indeed decided to carry out.

I have considered the TGD view about learning and the role of emotions in learning [L7, L10]. The recent surprising experimental findings about the role of RNA in learning by conditioning inspire the view that emotions are involved even at the molecular level [L5]. Together with the TGD based model of bioharmony [L1, L9] inspired by the fact that music both expresses and induces emotions, this leads to a concrete model. For the general philosophic background see [L8].

## 2.2 Learning by Eureka experience

There is also second kind of learning. Learning by discovery. Computers are not able to do this. I mentioned in the discussion what happens when you look certain kind of image consisting of mere random looking spots in plane. After enough staring suddenly a beautiful 3-D patterns emerges. This is a miracle like phenomenon, Eureka experience. Quantum consciousness based explanation is the emergence of quantum coherence in the scale of the neuronal cognitive representation in visual cortex at least. New 3-D mental image emerges from purely 2-D one. One goes outside the system, so to say.

The increase of dimension might provide an important hint about what happens more generally: and this would indeed occur for the dimension of extension of rationals in Eureka quantum jump in TGD based model of what could occur. Physically this would correspond to the increase of the effective Planck constant  $h_{eff} = n \times h_0$ ,  $h = 6 \times h_0$  (this is the best guess [L2, L6]) assignable to the mental image created by the image.  $n$  is indeed the dimension of extension of rationals and would increase and also scale of quantum coherence would increase from that for single spot to that for the entire picture. The increase of  $n$  requires metabolic energy and learning in this manner is actually essentially what it is to be alive. Most of this Eureka learning would be analogous to

re-discovery in molecular length scales.

This kind of learning by Eureka is probably very common for children since they live a very intense period of personal evolution: they are often said to be geni. Later the increasing dominance on the learning by conditioning often suppresses this mode of learning, and we become gradually collections of existing programs. The irony is that the worst outcome is a mainstream scientist, who has become a hard-nosed skeptic. What is worrying that our society strongly reinforces this degeneration to mere automatons in the name of effectiveness.

Solving genuine problems rather than applying existing algorithms is the manner to gain these learning experiences but they come only now and then. Some of them are really big: during my professional career there have been - I would guess about 10 really big experiences of this kind involving discovery of a new principle or totally new physical idea.

### 3 What goes wrong with vulgar skeptics?

For me the discussion with my inquisitors A and B was very useful since it led me to ponder why it is so hopeless to explain something extremely simple idea for skeptics. You give explain the problem patiently, you list the assumptions, you explain the solution. But all in vain: skeptic refuses to even read and shouts that every single assumption contains a fatal mistake. When you ask him to make a list about these fatal mistakes, he throws a personal insult. The discussion with these fellows A and B forced me to seriously ask what goes wrong with them, how to understand their intellectual rigidity, even intellectual paralysis implying inability to consider any alternative views. Perhaps one could speak about ultraskeptical cognitive syndrome, which involves also emotions very intensely.

There is a beautiful connection with a learning based on Eureka experience. Physically this corresponds in TGD to a phase transition increasing the scale of quantum coherence and algebraic complexity: more technically effective Planck constant  $h_{eff}$  increases at some levels. More intelligent mental images become possible and Eureka experience happens as in the situation when chaotic 2-D set of points becomes beautiful 3-D object.

Biological evolution at the level of species is based on this: we humans are more intelligent than banana flies. This evolution occurs at all levels - also at the level of individuals but it is not politically correct to say this aloud. Some of us are in their intellectual evolution at higher level than others, either congenitally or by our own efforts or both. This creates of course bitter feelings. Intellectual superiority irritates and induces hatred. Maybe this partially explains why so many intellectuals spend most of their life in jail.

Take seeing as an example. If person has become blind at adult age, he understands that he is blind and also what it **feels** to see. Also congenitally blind person believes that he is blind: this because most people in his environment tell that it is possible to see and that he is blind. However, he does **not feel** what it is to see. Suppose now that most of us were blind and then comes some-one and tells that he sees. How many would believe him? They can **not feel** what it to see. Very probably they conclude that this fellow is a miserable fool.

Suppose now that certain person - call him MP - has used 4 decades to develop a TOE generalizing superstring model made 5 years before the first superstring evolution and expanding also to a theory of consciousness as a generalization of quantum measurement theory. MP tries his best to explain his TOE to A and B but finds it hopeless. They even arrange "investigation" following the best traditions of witch hunt to demonstrate his crackpotness. And indeed, they conclude that they were correct: all that this person writes is totally incoherent non-sense just as this 2-D set of random points.

These you guys are arrogant and full of the vanity of a young man. But this alone does not explain their behavior. To say that they are just evil, is not a convincing explanation. My proposal is that they are simply intellectually blind and suffer what one might call ultra-skeptical syndrome. Expressing it more technically in TGD context: their personal hierarchy of Planck constants does not contain the required higher values. An Eureka experience would be required to jump to the level containing higher values of  $n$ , at which understanding is possible. What MP says is for them like this chaotic 2-D set of points: they are not able to see the beautiful 3-D pattern.

MP could of course cheat and tell that he believes in superstrings and even give a false hint suggesting that he is a good friend of Witten. This would certainly help but would only lead to

a fake understanding. The fellows would take MP seriously only because MP agrees with Witten and claims to be a friend of Witten but still they would not have a slightest idea what TGD is. They cannot **feel** what it is to understand TGD.

The only hope is personal intellectual evolution increasing the needed Planck constants in the personal  $h_{eff}$  hierarchy of these guys. But this is possible only if these fellows admit that they are intellectually blind in some respects but if they are young arrogant skeptics they furiously deny this and therefore also the possibility of personal intellectual evolution. There could also suffer a genuine intellectual paralysis meaning inability to make this kind of quantum phase transition. There indeed is a personality disorder in which the patient has extremely rigid personality and is unable to consider any alternative views.

**Acknowledgements:** I want to express my gratitude for these two young fellows A and B in Bio-A.I. group, who are so modest that want to remain anonymous. Gratitude for both inspiration and serving as guinea pigs. This was very nice. On the other hand, I served as a - should I say voluntary(?) - target in their crackpot investigation.

## REFERENCES

### Books related to TGD

- [K1] Pitkänen M. TGD Inspired Comments about Integrated Information Theory of Consciousness. In *TGD based view about living matter and remote mental interactions*. Online book. Available at: <http://www.tgdtheory.fi/tgdhtml/tgdlian.html#tononikoch>, 2016.

### Articles about TGD

- [L1] Pitkänen M. Geometric theory of harmony. Available at: [http://tgdtheory.fi/public\\_html/articles/harmonytheory.pdf](http://tgdtheory.fi/public_html/articles/harmonytheory.pdf), 2014.
- [L2] Pitkänen M. Hydrinos again. Available at: [http://tgdtheory.fi/public\\_html/articles/Millsagain.pdf](http://tgdtheory.fi/public_html/articles/Millsagain.pdf), 2016.
- [L3] Pitkänen M. TGD Inspired Comments about Integrated Information Theory of Consciousness. Available at: [http://tgdtheory.fi/public\\_html/articles/tononikoch.pdf](http://tgdtheory.fi/public_html/articles/tononikoch.pdf), 2016.
- [L4] Pitkänen M. Artificial Intelligence, Natural Intelligence, and TGD. Available at: [http://tgdtheory.fi/public\\_html/articles/AITGD.pdf](http://tgdtheory.fi/public_html/articles/AITGD.pdf), 2017.
- [L5] Pitkänen M. Could also RNA and protein methylation of RNA be involved with the expression of molecular emotions? Available at: [http://tgdtheory.fi/public\\_html/articles/synapticmoods.pdf](http://tgdtheory.fi/public_html/articles/synapticmoods.pdf), 2018.
- [L6] Pitkänen M. Dark valence electrons and color vision. Available at: [http://tgdtheory.fi/public\\_html/articles/colorvision.pdf](http://tgdtheory.fi/public_html/articles/colorvision.pdf), 2018.
- [L7] Pitkänen M. Emotions as sensory percepts about the state of magnetic body? Available at: [http://tgdtheory.fi/public\\_html/articles/emotions.pdf](http://tgdtheory.fi/public_html/articles/emotions.pdf), 2018.
- [L8] Pitkänen M. Getting philosophical: some comments about the problems of physics, neuroscience, and biology. Available at: [http://tgdtheory.fi/public\\_html/articles/philosophic.pdf](http://tgdtheory.fi/public_html/articles/philosophic.pdf), 2018.
- [L9] Pitkänen M. New results in the model of bio-harmony. Available at: [http://tgdtheory.fi/public\\_html/articles/harmonynew.pdf](http://tgdtheory.fi/public_html/articles/harmonynew.pdf), 2018.
- [L10] M. Pitkänen. On Masaru Emoto's Experiments with Emotional Imprinting of Water. *Journal of Consciousness Exploration and Research*, 9(6), 2018.