

# Quantum entropic logic theory and quantum computer

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Information about latest scientific discoveries made by physicists can turn upside down human's understanding of the reality. A new physical discipline has appeared – “Quantum entropic logic theory” which seemingly unites incompatible concepts, but in reality it most accurately reflects modern state of science, when scientific discoveries seem truly unbelievable from the point of view of a common people.

Let's start with a term “quantum”, because there is a widely spread opinion that quantum physics describes only microscopic systems - subatomic particles, atoms, molecules, that it's a some specialized theory, having no relation surrounding objects. This is not true. More precisely that without quantum theory it is impossible to properly describe behavior of microparticles, but its laws are unified – in a macro world they are as true as in a micro world.

Quantum theory is often underestimated, although without its laws the existence of macroscopic bodies would seem a real miracle or supernatural and unexplainable phenomenon. Their presence could have only been explained by a “higher power”, because forces and laws known to the classic physics cannot explain a remarkable stability of atoms and molecules, which is the basis for all physical and chemical properties of a matter.

All main achievements of Quantum entropic logic theory are based not only on cognition of a micro world, but to a greater extent – on a fundamentally new approach to description of a physical reality. Differing from traditional concepts of quantum mechanics, which directly deals with physical properties of objects, Quantum entropic logic originates from more fundamental and primary concept – “state of system's entropy”. From this point of view all physical quantities, which characterize a system, are secondary manifestations only, defined by its entropic potential. We speak about arbitrary systems – greater and lesser ones.

Quantum entropic logic it is a description of any objects in terms of non-linear conditions, independent from sizes. The methods may be equally successfully applied to both microparticles and the Universe on the whole.

The main conclusion of the Quantum entropic logic theory can be formulated in brief as follows: a matter, i.e. substance and all known physical fields, is not the only basis of the world around, but only an insignificant part of the aggregate Quantum Reality.

It is very interesting that in Quantum entropic logic an information is a quantitative value that characterize a system, i.e. “information has a physical character”. Information itself is an objective physical quantity along with the others – such as mass and energy of a system. We must note that it is the objective quantity which does not depend on what we think about this information, measure we it or not and how we measure it – a system anyway will contain a certain amount of information, just like, for example, an object of a material world has a certain mass.

The essence of Quantum entropic logic and at the same time its exclusive peculiarity – is that information-entropy suits perfectly for a role of “the primary substance of all”.

More and more theorists believe that the key idea, leading to “the great unification” of gravitation and a quantum theory, may be a reformulation of approaches to a nature not in the terms of matter and energy, but in the terms of information-entropy.

The great John Archibald (who presented to the world a term “black hole”, among others), a patriarch of American physics, was one of the first to speak about it. This is a citation from his autobiography about role of information, published few years ago:

“My life in physics is divided into three periods. During the first, spreading from the beginning of my career to early 50’ of the last century, I was possessed with the idea that “everything is particles”. I searched for methods to upbuild all basic elements of matter (neutrons, protons, mesons etc.) from the lightest and most fundamental particles – electrons and photons.

I call the second period “everything is fields”. Since the time when I fell in love with general the relativity theory and gravitation in 1958 and until quite recently I upheld the view to the world as the world consisting of fields. The world, in which something seeming to us as particles, in reality is a manifestation of electric and magnetic fields, gravitational fields and space-time itself.

But now I am overwhelmed with the idea that “Everything is information”. The more I think about quantum mysteries and our strange ability to comprehend the world we are living in, the more I see, probably, a fundamental meaning of logic and information as a basis of physical theory”.

P. Davis said about it in his work: “Usually we think about the world as about something consisting of simple clusters of material particles and we perceive information as a derivative characteristic of a percept, related to certain organized states of matter. But perhaps it is the opposite: it seems that the Universe actually is a trick of the primary information and material objects are its complex secondary manifestation”.

P. Davis ends his work with the following: “If information is really must replace substance as the primary substance of Cosmos, then even a greater reward awaits us. From the modern point of view brains (matter) produce thoughts (mental information). But if matter is a form of an organized information, then consciousness is not such a mystery, as it seemed before”.

Therefore any systems in the surrounding reality may be regarded as an assembly of memory cells of a quantum computer. Then the whole Universum is regarded as a global and unified for all reality Quantum Computer, with a capital “Q”, a particular universal Matrix. That is why a role of quantum computers is extremely important for comprehension of the nature’s laws, for deeper understanding of fundamental laws of surrounding reality, on the deepest levels.

The usual computer is like a knowledge of one program and a certain ability to orientate oneself within it. Here we see only one result of its work – a classic reality and we study laws which are true within one and the same program. But now we start to realize Laws, in accordance to which any program work, we started to understand how the computer itself and its OS work. These are the laws according to which the Matrix transmits us one or another perception. We go beyond a scope of familiar local program and note many other programs (vectors of reality, orthogonal worlds) which are loaded into an operative memory along with ours. We begin to understand an interrelation of all these programs-levels and can forecast more accurately a result of a transition from one to another – for example, which reality we will go to after a death of a physical body.

When dealing with the classic information, we divide the information itself and a physical carrier. As a result we can only adjust some material object for storage (transfer) of a certain amount of “classic” information. So without a material carrier information cannot exist.

Information (entropy) has a special role in quantum entropic logic. As we know, at quantum approach, systems may be in a non-linear state, when an object is simply a virtual one, i.e. it has no matter in it, no physical fields, and it cannot be described using quantitative values applied in the classic physics. But it can be described in terms of Quantum entropic logic! Measure of information (entropy) in entropic logic is defined on the basis of entropic potential concept. Detailed description how to do it is given in an article of T. Van Hoven published by Physics Today magazine in 1972.

Quantum entropic logic theory does not differentiate information and entropy, but links them directly with energy. Changing of information (entropy) is accompanied by changing of energy, and information exchange is directly related to energy exchange.

Quantum entropic logic theory has offered a formula for radiation quant of information-entropic wave, which relates it with energy of a system, through Planck’s constant ( $h$ )

$$I = \frac{E}{\sqrt{h}}$$

A direct relation between energy and fulfilled logic operations allows making a bridge to physical processes, accompanying work of consciousness, because it is directly related to logic operations.

The whole classic world with its matter and physical fields – is only one small and quite insignificant part of the Universe. Everything considered by many to be the basis of macrocosm and the only existing objective reality, regarded by Quantum entropic logic as a projection, a wan shadow falling from a vector of state to a quantization axis at evolution of information-entropic field – the source aggregate quantum reality.

Quantum entropic logic fairly solves a problem of “out-of-limit” states of the Universe in known concept of the Big Bang, when a question of what was before this moment arises. Classic physicists in their attempts to solve this problem are trying to imagine what the state of reality was before the Big Bang in the Universe.

The Big Bang Theory is the main theory of the Space appearance. This theory describes space evolution from a split second after something has happened to turn the Universe into existence, but it says nothing about time zero itself. The Big Bang Theory does not include the bang itself. It says nothing about what had banged, why and, frankly speaking, had there been any bang at all. The Big Bang is a complete mystery for us. For many decades the main of all cosmological questions remains unanswered. Only in the beginning of 2000 was made an assumption that force that caused the Big Bang was an information-entropic field transforming into energy. These forces were so strong that not only they preceded the bang, but they revealed something more – something that makes the Universe expand for more than 13 billion years already.

“Supernatural” states cannot already be explained by ensemble interpretation, as it was done by Einstein, when he tried to avoid “telepathy”. Now this “telepathy” goes to the fore and becomes the main working resource in Quantum entropic logic.



Quantum entropic logic helps to understand properly the meaning of some well-known concepts, operated by esoteric literature and the Eastern philosophy. This includes Yin and Yang concepts, which Eastern rational mind vainly tries to fit into a framework of the classic ideas, when in terms of Quantum entropic logic this elusive duality explained easily: Yin and Yang is a superposition of two non-linear states.

Many things evidence that Yin-Yang correspond to a simple case of a two-level system in a quantum world, i.e. a system with two orthogonal states (for example, with minimal and maximal entropy). This is a description in qubit terms (as a vector of two-level system condition) of two mutually exclusive states in a superposition. On the one hand Yin-Yang is a one unit, but one of them cannot be expressed in terms of the other. But on another, we can say about their possible redistribution in a system, about a transition between levels.

When they say that “Yin exists in Yang” and “Yang exists in Yin”, they presume their inseparable integrity. The Book of Changes say the “Yang is a Tao, a basis, cause of changes, beginning and essence of life and death, a treasury of spirit and light, it is a basis” (Lao-Tzu).

Someone believes that the whole theory of changes is based on one postulate:  $\text{Yin} + \text{Yang} = \text{Tao}$ . But it is not just an amount sum, but a superposition of states – thus appear complications in understanding at the classic approach. As a matter of fact this refers to something called in Quantum entropic logic a non-linear source of reality. Notably that in theory Yin-Yang a vector of Tao state is regarded in a simplest basis of two orthogonal states of the Universe. But even at such simple model of two-level system’s (qubit’s) state vector many things can be understood.

Yin is usually associated to a state of higher entropy, i.e. it can be associated with (0), when Yang – with (1). In a simplest case of a dynamic balance transitions between levels are equally possible, in other words, a system periodically releases entropy, transiting from Yin to Yang (from level 0 to 1), and at the same time instantly absorbs it during the next cycle (in back transit from 1 to 0).

In accordance with beliefs of ancient philosophers these two forces – Yin and Yang – are the main in the nature. Taoist wise men thought that there is an infinite process of interaction and transformation of

these two principles in the Universe. “Alternating Yin and Yang – that’s the way of the Universe”, - says the Book of Changes, this circular flow is universal, it happens in greater and lesser systems.

In essence it means that description of a greater system (Tao) may be carried out in the same way as a description of a lesser system (qubit). In this respect it is considered that such duality of Yin-Yang relations is the main link in evolution of systems of any nature. If we pull this link we could untangle the most complex chain of entropic relations-interactions in a compound system.

Some words must be said about Chi energy, which is regarded by Chinese philosophy as a fundamental principle of the Universe, a link that connects the Universe. Chi is a concept on the one hand philosophical and spiritual, on the other at the same time material and concrete one. Chi is one of the ancient hieroglyphs, which designates steam, air, breath, etc. Sometimes Chi is perceived as a “breath of the Universe”. In a more comprehensive sense Chi energy is a manifestation of all known and unknown fields, acting on all planes of the reality.

In terms of Chi energy and “the initial breath”, Yin (calm and condensing) is more entropically dense, when Yang is less dense (but with greater quantum information), diffused and mobile. Transitions between levels are described in the following way: dense Yin turns into less dense Yang because of Chi energy flow movement, and it is accompanied by birth and growth (Yin is a feminine). Back transition results in filling of Yin with contents (structural quantum information), which corresponds to planting of non-local “seeds”, including “Spirit seeds”, to a dense entropic ground (a domain of Yang as a masculine). Therefore Chi energy is information flows that appear at transition between levels of two-level system.

Chinese philosophy considers Wuji (“the unlimited, something that precedes appearance of the Universe) a beginning of the real world.

Wang Jin Yue, who lived in Qing dynasty times, wrote about Wuji in “Tai chi chuan theory”: “Tai Chi was born from Wuji or finite “nothing”. It is a source of dynamic and stationary states, mother of Yin and father of Yang. If they move – they separate. If they stay still – they combine”.

As Zhou Zonghua write in the same book: “Infinite emptiness, which existed before creation of the world and from which the Universe appeared, was called by Chinese philosophers Wuji or finite “nothing”. It is said that before the creation there was nothing, but at the same time something was. We neither know what was it, nor where “it” comes from, but definitely there was something. This “something” cannot be explained rationally; its existence is only supposed, as the existence of some object that is vaguely looming in a mist. Ancient Chinese philosophers described it as “the presence of absence” or “nonmaterial material”. It has a shape, but it is shapeless, it has density, but it is intangible. This is an incoherent uncertainty. You stand in front of it, but it has no limits. You walk behind it and it has no back. It is not a material object – it’s a source of movement and immobility. It is considered that everything in the Universe, including Yin and Yang, origin constantly from this inconceivable source. Lao-Tzu called in “Tao”, Yi Jing calls it “Tai Chi”.

“According to Taoist cosmology, before the existence of the Universe there was a state of complete emptiness. In this original state there was not a single movement. Time concept cannot be applied to a state of original emptiness, because there was nothing to be a point of starting time. Everything was empty. Ancient Taoists gave a name to this state – Wuji. “Wu” means absence, negation, emptiness. “Ji” in this word (although it can be read as Chi – life energy) means higher, maximal. And thus Wuji means higher state of emptiness”.

So, this concept, in its parameters, is almost completely identical to a concept of “non-linear quantum source of reality” in Quantum entropic logic theory (singularity point in the Big Bang Theory). It precedes multidimensional information-entropic flows of all direction and our basic vector of time. And the same time in a form of analogue quantum information, this “non-linear” state contains the idea of all “manifested”.

So, in accordance with a cosmological concept of Quantum entropic logic theory, a non-linear quantum source of reality contains a realized world as though “inside itself”. It embraces a multitude of local forms and elements of a reality, in other words, it contains the same amount of information (according to calculation of T. Van Hoven about  $3.14 \times 10^{169}$  bits) as the whole Universe, but in lesser beyond measure, even tiny space (less than  $1 \times 10^{-33}$  cm), thus creating a gigantic, monstrous density of a primary matter negentropy (complexity of a structure).

Here is an extract of Pope John Paul II speech at the ceremony of Theodore Van Hoven awarding with a highest award of Vatican Academy of Science: “The greatest achievement of Theodore Van Hoven is that he discovered God as a natural phenomenon and described Him mathematically, which allowed creation of devices capable of antedating the Divine Providence. Evolution of a nature and history of human society development must be supplemented and reviewed with consideration of laws discovered by Theodore Van Hoven”.



We have already spoken about “consciousness” term; this phenomenon may be successfully described by Quantum entropic logic. To do it, we need to formulate several constructive definitions.

Quantum entropic logic is an instrument. If we ready to accept, that the main characteristic of a consciousness are its various entropic states, then it is enough to apply theoretical methods of Quantum entropic logic. Quantum mechanical approach can give absolutely new data for deep understanding of peculiarities and laws of consciousness functioning, regardless of its organization forms.

Consciousness is an internal parameter of a system (either open or close), which means an ability to distinguish and implement some admissible states of entropy.

A set of various admissible states of a system’s entropy and their implementation, transition between states, are within a framework of quantum-mechanical description. These two main parameters are enough

to answer whether one or another object has consciousness or not. In the surrounding world these parameters immediately show a qualitative difference of inanimate objects, which cannot choose an admissible state at their own discretion, from living beings, which have a certain range of free choices. A necessary and sufficient condition for consciousness presence in a random system is its ability to distinguish and implement its admissible states of entropy.

We call a consciousness of a single two-level system, capable of distinguishing its two main states and implement one of them – an elementary consciousness.

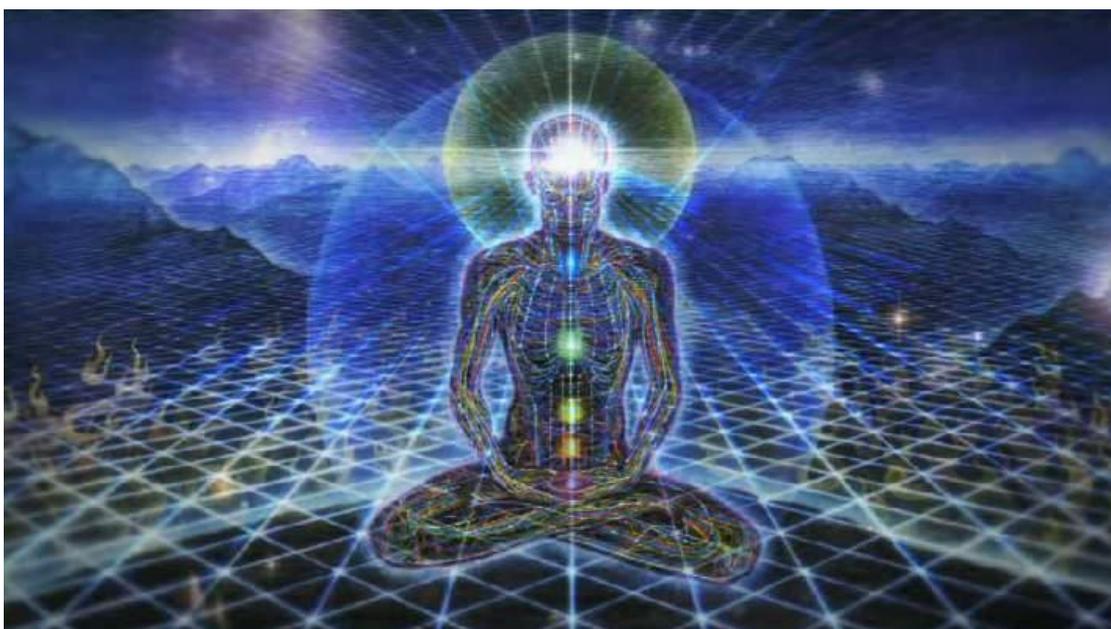
Consciousness – it is that internal parameter of a system, which can realize “a reduction of wave function”. If there is no consciousness – then an environment will impose its laws, and a state will be reduced to one of a set of admissible states. But consciousness can “realign” this process and switch to a state of entropy, which consciousness considers “the most advantageous”.

Consciousness phenomenon must be related to a reduction, implemented by a system itself from the inside. In other words – it is an “inner property of a system’s organization”.

There is no need to emphasize that a consciousness is the same material part of a system, because we are reviewing the most general case in terms of Quantum entropic logic, which postulates a material character of information-entropic interactions. For example, any our thought – is an implementation of one of our admissible quantum states. Entropic logic allows seeing a unity of two qualitatively different entropic components of a system, its dualistic nature.

There is another one question to consider – how a consciousness develops? Can, for example, an elementary consciousness, regarded as a pure state or a closed system, develop itself from the inside without participation of an environment. Yes, it can. An elementary consciousness contains a consciousness of two other subsystems in form of “seeds” – two other “nuclei”, prospective centers of a consciousness. Each of them, in their turn, may be divided into two, and so on. In other words an elementary consciousness may “be divided” in the inside endlessly, increasing its space of entropic states.

By extending of three-qubit model of the Universe we can get four-, five-, and so on-qubit models.



In the East a cosmologic energy is called Chi, prana, etc. It is usually identified as a form of energy that fills the Universe and manifests in a human organism in a peculiar way. This fine force can be transmitted from one organism to another and it is the energy, which underlies numerous occult and magnetic phenomena. It is very similar to “animal magnetism” of Western occultists. We must note that in all its characteristics this fine energy corresponds quite well to information-entropic fields, accompanying non-linear quantum correlations.

A computer in our heads is a quantum computer, with all resulting from it consequences. That is why there is a direct relation to esoterism, which is based on application of quantum properties of this computer (non-linear correlations, “psychic energy”).

A has a possibility to use “magic” non-local properties of entangled qubit states of his quantum computer. It turns out that all esoteric practices, in their own way, mean that a man tries to “switch” his brain from a classic mode of operation to a quantum one. Engaging himself in mystic practices, a man tries to involve a non-linear resource of entangled states and control it, doing the same task with physicists, who are trying to achieve technical implementation of a quantum computer!

From theoretical basics of the Quantum entropic logic we see that presence of classic interactions is necessary for manifestation of non-linear quantum correlations. It means that to give your soul a possibility to realize itself and develop further, it must have a material basis, a “guide” in a material world. Forming starts with informational quantum levels. If it is a reincarnation, it means that at exact this moment “catching” of quantum astrosome for a next incarnation happens. In accordance with Buddhists beliefs, a life force of a deceased needs just 49 days to come to a new incarnation.

When a child is born his quantum computer is still clean, not loaded with programs allowing to orient himself in our physical world. And a computer itself, as a device, is not ready for operation yet – final “assembly” has not been completed yet. What is the use of any interacting systems’ connection to non-linear correlations – they are not developed yet and cannot be regarded as quantum computers.

To get a quantum computer, it is necessary to organize qubits, which could be selectively manipulated, carry out logic operations and achieve results. The same with a child – firstly he is closer to a fine-information world, his brain contain no qubits, with which he could carry out logic operations. Physical carriers of cubits form gradually, with a growing-up of a child, when he learns to deal with mental structures and logic operations.

In terms of quantum computing, brain cortex is a physical carrier of our quantum computer’s qubits.

Using it we orient ourselves in a physical world, but as soon as a computer is quantum one, we can “glance” at fine-informational levels of reality. After a death of our body a need in a material carrier of qubits disappear – we don’t need to perceive physical planes of a reality, that is why we can leave qubits in our mortal remains. But its quantum “mold” continues to exist, taking everything that was accumulated in a material world. To perceive the highest levels only fine-informational structures are enough, and in this case quantum coronae of once physical qubits act as a physical basis of our quantum computer. Consciousness continues functioning in accordance with approximately same principles as before, but it is located on quantum out-of-body levels of reality.

The offered hypothesis about quantum computer in a brain may be developed in various areas, both classic, like a creation of an artificial intelligence, and esoteric ones – for example a possibility to translate esoteric techniques training methods to more intelligible language in terms of quantum computer programming.

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