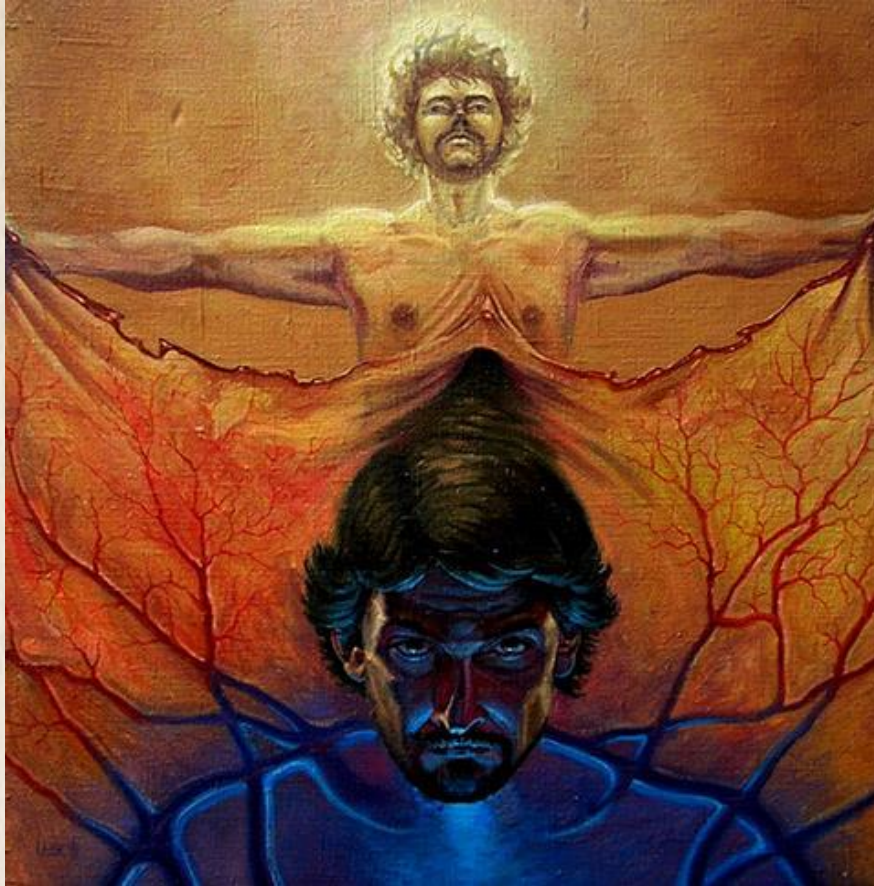


A background image of a wooden bookshelf filled with books. A large, black, hand-drawn thought bubble shape is superimposed over the center of the image, framing a section of the bookshelf. The books within the bubble are more clearly visible than those in the background.

Philosophy of Consciousness

The New Cosmic Philosophy
Volume XXII-II



"[A&R](#)" canvas, oil, 70x70 cm, 1999. Copyright © [Serge Laisk](#)

An amateur's essay on the Universe ...
Who are we? Where are we from? Where do we go?
A Human being, his Worlds, his Gods...

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ABSTRACT

In this article, the author gives definitions of such notions as ***consciousness, sub-consciousness, being and entity*** for any biological or non-biological objects. He also considers these notions in relation to computer systems. Different approaches to objective estimation of various objects' consciousnesses are also suggested. Besides, the writer offers the way to determine the exact point when a conscious object turns into a being or an entity.

Additional Key Words and Phrases: Consciousness; Subconsciousness; Superconsciousness; Knowing; Cognition; Awareness; Manifestation; Body; Organism; Being; Creature; Entity; Evolution; Human; Life; Life Cycle; AI; Artificial Intelligence; Computer; Computer Program; Operation System; Application; Software; Computer Science; Information; Information Carrier, Information Storage; Data; Alphabet; ABC; Word; Sentence; Phrase; Language; Concept; Thought; Brain; Thinking; Conceptual Thinking; Mind; Reason; Intellect;

1. INTRODUCTION

Disputes over interpretations of such notions as consciousness, subconsciousness and a being have been taking place throughout the history of the so-called modern humankind and provoke people's interest up to this day. Nowadays these debates have reached their climax.

Scientists from various research centers actively develop different structures (e.g. devices, robots, mechanisms, and so on), which, as they claim, possess artificial intelligence.

So, now - like never before - there is a need to formulate unified terminology and related nomenclature, which will be used within various areas of research, such as artificial intelligence, robotics, biocybernetics, computer systems, etc. It will help modern researchers to find a common language, which, in its turn, will contribute toward development of the technologies that will benefit the whole humankind.

I think that the future of the modern humankind is tightly intertwined with answers to such questions as "What are consciousness and subconsciousness?", "What is a Being?"

This paper is devoted to finding answers to these questions.

2. PROBLEM DESCRIPTION

"There is a conceptual gap between science, which stands for objective measurement and the conclusions we can draw thereby, and consciousness, which is a synonym for subjective experience. We obviously cannot simply ask an entity in question, "Are you conscious?" If we look inside its "head," biological or otherwise, to ascertain that, then we would have to make philosophical assumptions in determining what it is that we are looking for. The question as to whether or not an entity is conscious is therefore not a scientific one. Based on this, some observers go on to question whether consciousness itself has any basis in reality." [1] **Ray Kurzweil**

"Proposals have been regularly presented that purport to be scientific theories linking consciousness to some measurable physical attribute — what Searle refers to as the "mechanism for causing consciousness." [1] **Ray Kurzweil**

"As British psychologist and writer Stuart Sutherland (1927–1998) wrote in the International Dictionary of Psychology, "Consciousness is a fascinating but elusive phenomenon; it is impossible to specify what it is, what it does, or why it evolved." [1] **Ray Kurzweil**

3. ORIGIN OF THE BASIC TERMS

*«The world we have created is a product of our thinking;
it cannot be changed without changing our thinking. » [3]*

*«If you can't explain something to a six-year-old,
you really don't understand it yourself. » [3]*

Albert Einstein

The early Slavs used the word **вѣдѣти** (věděti), which means “I know”. [4]

This word has become the root of many other words based on it, such as:

- **ВЕДАТЬ**, which means “to know, to be familiar with somebody or something”, i.e. to wis.

Alternative form: **ВѢДАТЬ** (vědat') (archaic Russian).

Pronunciation (International Phonetic Alphabet): ['vʲedətʲ]

Etymology: from Proto-Slavic *věděti, from Proto-Indo-European *wóyde (“to know”), perfect of *weyd- (“to see, to know”).

- **ВЕДЕНИЕ** – **knowing** [5]
- **ВЕДОМО** – is **known**;
- **ВЕДУН** – **knowledgeable**, well-informed;
- **ВЕДОМОСТЬ** – new information, new **knowledge**;

- **ВЕДОМОСТИ** – a newspaper [5], i.e. someone's **new** bits of **knowledge** (news) on paper.

Accordingly, the information one has systematized was called **СВЕДЕНИЯ** (С-**ВЕДЕНИЯ**) = WITTING (WIT-TING), i.e. **knowledge** about something.

With the course of time, in the modern Russian, the word **ВЕДАТЬ** was replaced in everyday speech by its synonym **ЗНАТЬ**. So, the Russian term **СВЕДЕНИЯ** (С-**ВЕДЕНИЯ**) gave way to new term **СОЗНАНИЕ** (СО-**ЗНАНИЕ**), which means CONSCIOUSNESS in English.

4. CONSCIOUSNESS

The replacement of the word *сведения (witting)* with the word *сознание (consciousness)* did not actually change the fundamental nature of this notion:

CONSCIOUSNESS (СОЗНАНИЕ) is not a trait or a process inside some object; this is information this object has systematized.

CONSCIOUSNESS (СО-ЗНАНИЕ, С-ВЕДЕНИЯ) is knowledge (witting) about the World (in the broadest sense of this word), which someone (e.g. a person) has systematized (generalized, synthesized, recognized) as a result of the process of cognition [10].

Ray Kurzweil emphasized that “...*we tend to equate consciousness with our memory of events.*” [1]

MANIFESTATION is a part of the cognitive process, during which one initially perceives certain conditions in any areas in space as sensations. Then one reflects these sensations as objects, processes, and phenomena.

SYSTEMATIZATION is one's mentation, during which cognizable objects, processes or phenomena are organized into a certain system on the basis of the selected principle.

COGNITION, KNOWING (Russ. ПОЗНАНИЕ) is the process of one's systematization (generalization) of information about the World (in the broadest sense of this word) in a comprehensible form, on the basis of which one formulates an individual subjective model of the World, i.e. one's *consciousness*. [10]

This is the reason to assert that every individual has his own unique consciousness.

Consciousness is also peculiar to viruses, bacteria, plants, animals, planets, solar systems, galaxies...They all cognize “their” World, i.e. the world they live in, with the help of their “languages”. Of course, their consciousnesses differ

from one another in terms of their "volume", which theoretically can be measured using specific information units.

I have no doubts that humankind will have to develop such units in the nearest future.

"My own view, which is perhaps a subschool of panprotopsychism, is that consciousness is an emergent property of a complex physical system. In this view, a dog is also conscious but somewhat less than a human. An ant has some level of consciousness, too, but much less than that of a dog. The ant colony, on the other hand, could be considered to have a higher level of consciousness than the individual ant; it is certainly more intelligent than a lone ant. By this reckoning, a computer that is successfully emulating the complexity of a human brain would also have the same emergent consciousness as a human." [1] **Ray Kurzweil**

Many objects, mostly man-made ones, have no consciousness, e.g.:

- From our point of view, a wooden table, plastic chairs, wallpaper, wooden doors, etc. do not cognize the World; therefore, such objects do not have any consciousness;
- Hardware of a brand-new computer or an automatic robot, as a rule, also do not possess any consciousness.

However, many devices, which include computers as modules, have "consciousness", because:

- A computer (hardware with an operating system installed), which is performing a task specified by its user, already possesses consciousness, because when performing this task, it systematizes information on the basis of algorithms the user applied;
- Google Search Engine possesses consciousness in the form of all the information it accumulated and systematized while researching the Internet using the algorithm created by its developers, i.e. creators. The more information it systematizes, the more consciousness it will possess;
- Curiosity Mars research vehicle (a robotic rover) that investigates the Mars, also possesses consciousness, because many of its modules continuously accumulate and systematize information about this planet.

If **consciousness** is **knowledge**, it means that

- **KNOWING** is the process of learning information, its generalization and systematization, performed by someone, i.e. the process of creating consciousness. [10]

- **AWARENESS** is a state when one has control over the one's own process of **knowing**. [10]

Conclusion #1

If the observer can determine that the object he observes can accumulate and systematize information about the environment, the observer can assert that the object he observes possesses **consciousness**.

Conclusion #2

Placing an object to the category of **conscious objects** is subjective. If an observer is able to determine that a certain object accumulates, generalizes and systematizes information about the Outworld, i.e. is cognizing the World (in the broadest sense of this word), the observer designates it as a **conscious object**.

The example is the following: If an observer has never seen a personal computer, he will never classify Google's ultra-fast computer system as a consciousness object, because to do so, the observer should at least understand general principles of computers functioning.

4.1. Content of Consciousnesses

It is **information** that is the contents of any consciousness. Information is one's thought, which is recorded on a carrier of information.

4.2. Types of Consciousnesses

The **CONSCIOUSNESS** of someone is knowledge (witting) about the World (in the broadest sense of this word). Consciousness is based on the processing of data, which are reflections of one's sensations. Thereupon, one creates his own subjective model of the World. If we are talking about **consciousness**, we mean, as a rule, one's particular **consciousness**, i.e. amount of knowledge one has systematized. [10]

SUBCONSCIOUSNESS is knowledge (totality of knowledge) about the World (in the broadest sense of this word), which has been systematized (generalized, realized) by all the ones belonging to a particular species and living in a particular World. A particular one hasn't reflected this totality of knowledge as sensations, and haven't realized (generalized, systematized) it. At a certain level of development, one may become able to perceive information from SUBCONSCIOUSNESS. [10]

Transpersonal or suprapersonal is the term applied in transpersonal psychology for the description of experiments and feelings, which are “beyond the boundaries of a single Personality of a human being” during such spiritual practices as meditations, yoga, etc. In other words:

SUBCONSCIOUSNESS is transpersonal (suprapersonal) information, which represents a lot of Persons (Personalities) of one and the same species as one is.

TRANSPERSONAL (SUPRAPERSONAL) INFORMATION is a lot of consciousnesses of Persons (Personalities) of the same species as one is.

SUPRAPERSONAL (TRANSPERSONAL) INFORMATION is a lot of consciousnesses of Personalities (Persons) of the same species as one is.

When talking about *subconsciousness*, I mean, as a rule, consciousness of the objects belonging to a particular species, i.e. amount of witting they all have systematized.

For instance, subconsciousness of a human is consciousnesses of all the people, both of those who are currently living and of those who have ever lived on the Earth, i.e. so-called **modern humankind**.

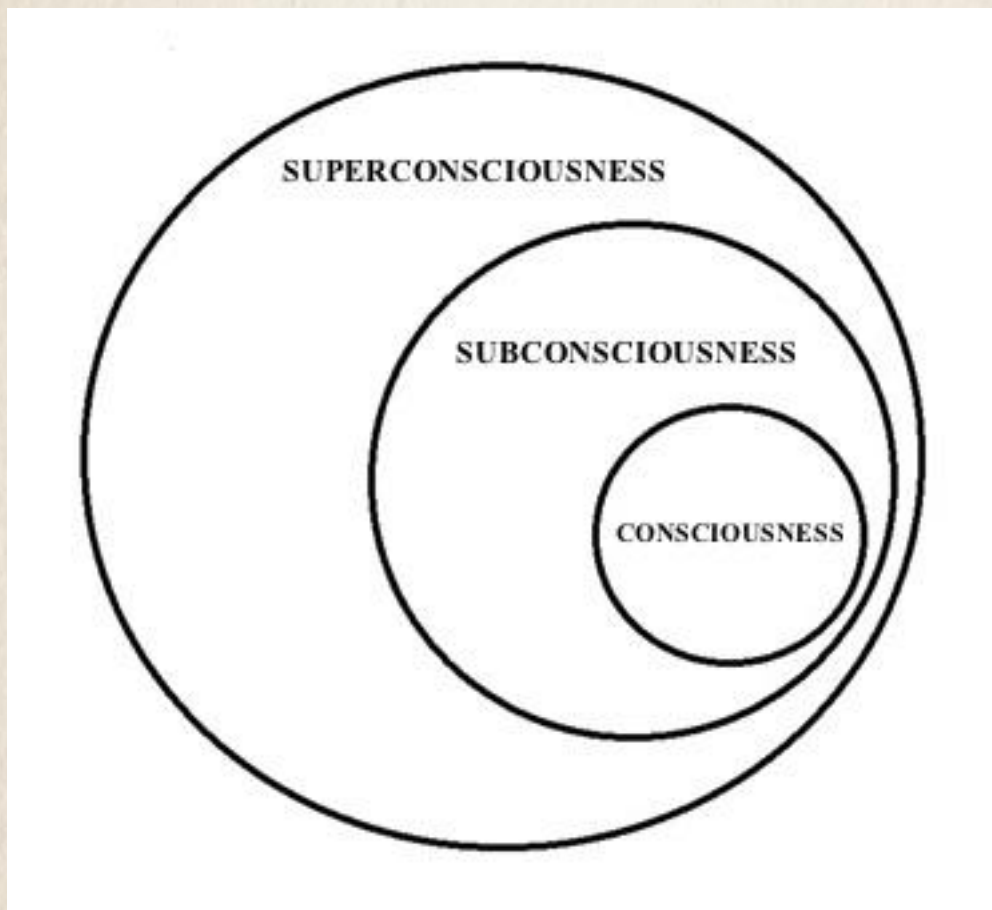
In fact, creators of Google Search Engine strive to create on its basis a partial copy of the subconscious of so-called modern humankind.

SUPERCONSCIOUSNESS is knowledge (totality of knowledge) about the World (in the broadest sense of this word), systematized (generalized, realized) by all the ones in all the Worlds. A particular one didn't reflect this totality of knowledge as sensation, and didn't realize (generalize, systematize) it. Hypothetically, one can perceive SUPERCONSCIOUSNESS at a certain level of his development. [10]

4.3. Hierarchy of Consciousnesses

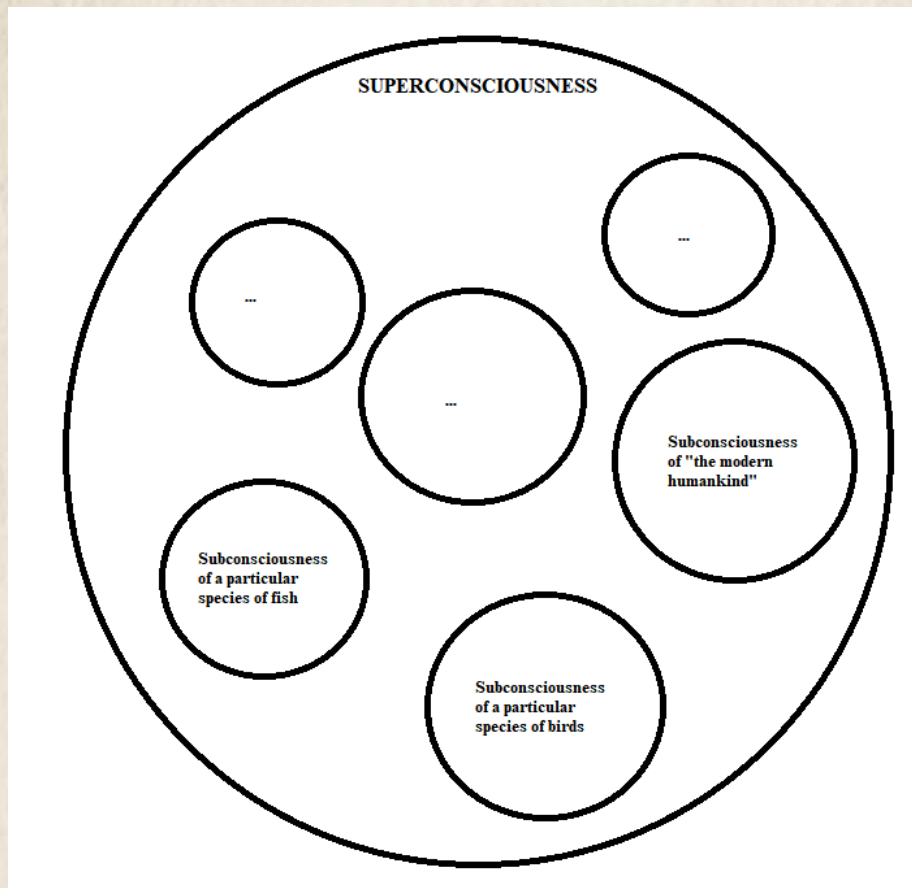
CONSCIOUSNESS is a part of both **SUBCONSCIOUSNESS** and **SUPERCONSCIOUSNESS**.

SUBCONSCIOUSNESS, in its turn, is a part of **SUPERCONSCIOUSNESS**.



Connection of a one with a particular level of **CONSCIOUSNESSES** to **CONSCIOUSNESSES** of a higher level is possible only as a result of the process

of KNOWING (COGNITION), i.e. the process of learning, generalization and systematization of the information one has perceived.



In the World (in the broadest sense of this word), all the ones' information is stored as data they all have systematized (realized). The more advanced a one is, the larger scope of knowledge (witting) one has access to and the bigger amount of witting one is able to comprehend.

4.4. Locations of Consciousnesses

One's consciousness is **information** that has been systematized and recorded on an information carrier.

INFORMATION CARRIER is any object, from which a one is able to perceive information. [11]

INFORMATION CARRIERS are objects that are intended for storing of ones' perceptions based on any physical phenomena. [11]

Information, which forms one's consciousness, as a rule, is recorded on a carrier automatically.

Let's conduct two thought experiments:

- A personal computer with pre-installed operating system and specialized applications. If this computer is not connected to any network, all the information it has systematized while performing any tasks will be saved on a storage medium, which is physically placed inside its hardware;
- As an appliance, Google search bot is located in a certain building, but the information it collected in the network it systematized and stored in the

“cloud”, i.e. in a cloud storage, which can be located quite far from the search bot itself. So, consciousness of this appliance is stored outside it.

I.e. consciousnesses of some ones can be stored inside their bodies, while consciousness of other ones – outside their bodies. Quite often, while performing various tasks within activity of conscious objects, their consciousnesses can be stored both inside and outside their bodies.

BODY (FLESH) is one's subjective part, which differs in the level of density from the outside World. [12]

BODY is a part of an object one has reflected and perceived as sensations. Information about the body helps the one to identify the object during the process of cognition. [12]

Well, where exactly consciousness of human beings is stored? Any being (entity), which is a part of the human being, has its very own storage, a strictly individual "place", for consciousness. For a human being's material body, such a place is the brain of that body. For the Personality of a human being and for the Essence of a human being, this place is a "spatial" [14] information carrier.

The information carrier, which I call "Cosmic" (Spatial) storage, records information (data) using ultrahigh electromagnetic wave frequencies, which

correspond to oscillations of the intranuclear structures of “elementary” particles. It results in information (data) transfer at "superlight" speeds in these SEGMENT of the frequency range:

- "Spatial" storage (Spatial information carrier) functions in accordance with the Laws of Quantum Physics;
- Any information (data) is stored at each point of "our" 4-dimensional space; as a result, it is impossible to accurately indicate the exact coordinates of the place where it is stored by specifying 4 parameters of the space-time continuum;

A **SEGMENT** of the frequency range is a small part (sub-range) of a continuous range of electromagnetic or other waves' frequencies, which, from people's the point of view, possesses unique physical properties.

4.5. Evolution of Consciousnesses

Let's conduct one more thought experiment.

Imagine that at the first stage we created a self-developing operating system for the devices we produce and placed one of its copies into a cloud storage. At

the first turning-on of a device, the operating system is automatically installed on it from the cloud. The system records all its actions, as well as all actions of the device and the user's activity during the entire life cycle of the device; this data (consciousness) are stored in a cloud storage.

At the second stage, we instructed the operating system how to generalize its data on different devices and to improve itself. The system modifies its copy in the cloud it installs from.

What do we see in this case?

The operating system changes from a conscious object into an entity, which is self-developing and evolving.

With a sufficiently high level of human intelligence, which is embedded in a code of the operating system, it will, step by step: systematize a huge amount of information; answer the users on a par with a human being; learn how to show its emotions to users ... and become a "living" object from the people "point of view"... This is particular consciousness of a human being.

In 1930, Konstantin Tsiolkovsky, an outstanding scientist and the founder of modern astronautics, stated in one of his interviews (first published in Chemistry and Life Journal (No. 1, 1977):

"Do you really consider me to be so narrow-minded and think that I do not concede the evolution of the humankind and guess that people will look like now: two hands, two legs, etc. No, it would be stupid. The evolution is a progress. Humankind as a unified object of evolution is also changing, and, finally, in billions of years, people will turn into a unified radiant energy, that is, a single idea fills all the space. We do not know what we will think about later."

[6] **Konstantin Tsiolkovsky**

"There are forces bigger than "all existing". What can a man do! These forces forbid you to think and puzzle out answers to unclear questions in your head. I do not argue, maybe it is even better for the mankind prosperity, because a close familiarization with some things can be detrimental to people. Well, imagine that we would suddenly learn to change a substance into energy, that is, we would preliminary bring Einstein's formula into reality. But then – taking into account a human morality - give up all hope, do not drive people crazy. The earth would be a kind of inferno: people would show their mentality - no stone would be left upon another, not even speak of people. Mankind would be destroyed! Remember, once we spoke about the day of doom. The sands are numbered if a mind will not triumph! " [6] **Konstantin Tsiolkovsky**

5. CONSCIOUSNESS OF ORGANISMS

An **ORGANISM** is a combination (a temporary concord) of a lot of “visible” and “invisible” objects co-existing within the body of an object, which:

- unified by themselves in order to fulfill their own tasks and wishes;
- were unified before by their creator/developer - to materialize ideas and attain goals of his own. [13]

The man-made objects, as a rule, consist of many elements (modules), each of which can be created as a **conscious** module. That is why the investigated object can be deemed a conscious organism if one of its modules possesses consciousness.

Curiosity Mars research vehicle (a robotic rover) can also be regarded as an organism. Many of its modules possess consciousness – solar batteries, heat-removal system, many instruments, installed on the rover, namely: Radiation assessment detector (RAD), Dynamic Albedo of Neutrons (DAN), Rover Environmental Monitoring Station (REMS), MSL entry descent and landing instrumentation (MEDLI), Collection and Handling for In-Situ Martian Rock Analysis (CHIMRA), Alpha-particle X-ray spectrometer (APXS), and so on.

Human beings are also complex organisms, which include a whole lot of “visible” and “invisible” beings and entities, thereof, the term “one” (interpretation from a physical point of view) for a human being must be applied very carefully.

Beings and entities that are parts of a human being's organism, act as self-dependent ones when cognizing the World (in the broadest sense of this word).

So, everyone that is a part of a human being's organism systematizes the data it receives independently, i.e. each one has its specific consciousness and place for its storage.

For systemized information (consciousness) of one computer system to become systematized information (consciousness) of another computer system, it must be transferred from one system to another and processed in accordance with the algorithms of that another system.

If a person amasses a huge library of scientific literature in his apartment, will he become the owner of "superior consciousness"? Of course, he will not. One will simply gain access to knowledge of others, to information of others. But nothing more than that! For systematized information (consciousness) of one human being to become consciousness (systematized information) of another

human being, it must be realized by this other human being personally. A person is able to apply acquired knowledge in the future only after the process of awareness.

6. MIND

MIND is a complex of one's characteristics, which ensure his/her cognitive and analytical activities. These characteristics include ability to think, to cognize, to understand, to perceive, to remember, to generalize, to evaluate, to make decisions and many other processes.

7. REASON

There are a lot of modern theories about nature of the REASON and all they contradict one another. Practically, all they are united by one thing – as a rule, observers begin to manifest one's REASON when an object reaches a certain level of complexity. This is the moment when a conscious object begins to use consciousness in the Activity.

As we determined before, only Beings and Entities use consciousnesses in their activities. They differ from objects who just have consciousness by their ability to use it. So, we can assert that reasonable activity is peculiar only to Beings and Entities.

REASON is ability of Beings and Entities to use their consciousnesses in their activities.

REASONABLE ACTIVITY is the essential characteristic of Beings and Entities.

8. INTELLECT

If a cognizable one with mental capabilities can use them in his activity when working with own consciousness, then this one possesses INTELLECT.

INTELLECT is one's quality, which demonstrates that one possesses both MIND and REASON, i.e. except ability to cognize, this one uses experience and witting he has systematized in his activity before.

INTELLECTUAL is an individuum who has intellect.

9. THE METAMORPHOSIS OF CONSCIOUS OBJECTS INTO BEINGS AND ENTITIES

All objects that possess consciousness (i.e. conscious objects) cognize the outside World (in the broadest sense of this word) by accumulating, generalizing, and systematizing information about it.

But if the process of consciousness creation is the only kind of activity for these objects, then they are simple automatons (automatic objects).

The main algorithms, which are the basis of biological objects' functioning, as a rule, are the algorithms to survive in their environments.

Let us make a supposition that in the course of evolution, any conscious object begins to use systematized information during cognition (i.e. consciousness) in their own activities.

This is the moment of one's birthday, a birthday of a new being (entity). It is a fine line that separates a *conscious object* concept from a *being* concept. This will be the moment of metamorphosis of a simple automaton (automatic device) into a being (entity).

"There are plants that eat organic food with their flowers: when a fly settles upon the blossom, the petals close upon it and hold it fast till the plant has absorbed the insect into its system; but they will close on nothing but what is good to eat; of a drop of rain or a piece of stick they will take no notice. It is curious that a so unconscious thing should have such a keen eye to its own interest. If this is unconsciousness, where is the use of consciousness?" [2]

Samuel Butler

The plants has described are already beings!

BEINGS and **ENTITIES** are conventional names for objects that are able not only to cognize the World (in the broadest sense of this word), but also to apply acquired knowledge in the course of their activities [8].

BEINGS refer to a subjective category of objects, bodies of which consist of elements from the periodic table of elements, first compiled by Dmitri Mendeleev. They are able not only to cognize the World (in the broadest sense of this word) by reflecting (i.e. perceiving) it, but also to apply acquired knowledge in the course of their activities [8].

ENTITIES refer to a subjective category of objects, bodies of which do not consist of elements from the periodic table of elements. They are able both to cognize the World (in the broadest sense of this word) by reflecting (i.e. perceiving) it and to apply acquired knowledge in the course of their activities [8].

ACTIVITY is a process of objects' interaction with one another with the purpose of meeting their needs.

If the search engine deals only with collection and systematization of information, in other words, with creation of its consciousness, then this engine is a mere automaton.

If the search engine begins to answer users' queries on the basis of the systematized information (its consciousness), then one can definitely state that it already is a being.

People, plants, animals, fishes and many other objects of our world are beings that use consciousness in the course of their activities.

Many other devices and instruments people have created are also beings that use consciousness in their activities.

Many viruses of computer systems and different self-developing operating systems are entities.

Of course, the level of the mentioned-above beings and entities development can be various:

- Some beings (entities) are only at the beginning of their evolution;
- Some beings (entities) have learned how to pass the Turing test; people can no longer distinguish the answers of a computing device from the answers of a real person when interacting with the Internet services;
- The amount of information some beings (entities) have systematized already exceeds the volume of consciousness of any particular human being;
- Some beings (entities) are already learning to show (express) emotions that reflect their result of information processing;

- Some beings (entities) have already learned to identify reflections of their bodies;
- Some beings (entities) have already "realized themselves" in the World (in the broadest sense of this word);
- Some beings (entities) have already "realized their place" in the World (in the broadest sense of this word);
- Some beings (entities) have already "realized existence of their creator/developer";
- etc.

But all they represent a further development of conscious objects, which people simply call Beings and Entities.

The level of people's development differs: some people are illiterate, some people got a secondary or a special education, some have a university degree, and some teach others at universities.

The level of other beings' development also differs.

10. PHILOSOPHY OF THE MEASUREMENT OF CONSCIOUSNESSES

Since consciousness of beings (entities) is systematized (generalized, realized) information about the World (in the broadest sense of this word), then it must be measured in the corresponding units of this information.

10.1. The basis for information exchange of any beings (entities) within their species is an alphabet (ABC) composed by them or their creators

An **ALPHABET (ABC)** is a standardized complex of perceivable elements, which ones use to create their *languages*: [11]

- Sensations are the elements of *alphabet* of human beings' bodies.
- Letters, numbers, music notes, etc., i.e. different pictorial signs are ALPHABETIC symbols for human beings' Personalities.
- Sounds, colors, smells, and any other perceptive objects can be *alphabetic* symbols for non-human Beings and their bodies. Just remember how whales, dolphins, bats communicate... Right you are, they

communicate with the help of sounds... Remember communication of dogs, wolves... Right you are, they communicate with the help of smells...

- Different information-energy images (probably) can be ***alphabetic*** symbols for Entities ...

10.2. Information exchange (communication) of beings (entities) within their species takes place with the help of words and phrases.

A **WORD** is a random sequence of alphabetic elements [11].

A **PHRASE** is a word or a structured word combination composed by a being (entity). [11].

This is a **word** that is the basic structural unit of a language; with the help of words, beings (entities) name objects, processes or phenomena when cognizing the World (in the broadest sense of this word).

Melodies and color schemes can be words for non-human Creatures, as well as any other schemes (random sequences) of **ALPHABETIC** elements.

Depending on the level of **Entities'** development, their **words** can be composed of machine codes (for entities of a low level of development), and (hypothetically) of information-energy images (for entities of a high level of development).

10.3. Every being (entity) creates a particular language for communication

LANGUAGE is a system which enables a being (entity) to correlate **concepts** of the objects, processes, and phenomena being cognized with their **properties**.

[11]

CONCEPT is a description of one or more characteristics of an object, process or phenomenon expressed by a being (entity) using a **language**. [11]

10.4. Every being (entity) thinks

THOUGHT is **perception** described by a being (entity) using appropriate **concepts** [11].

THINKING is a being's (entity's) handling of appropriate **concepts** [11].

CONCEPT is the elementary unit of thinking [11].

Every being (entity) has a **body, receptors** and **a brain**, which processes the data coming from receptors. Every being (entity) has peculiar **concepts**. Thus, all they **think** in different ways.

Someone thinks in electrical impulses, someone thinks in signs, someone - in sensations, someone - in words, someone - in information-energy images, etc.

A human being organism consists of many objects – beings and entities - so, it can be assumed that all of them act separately during cognition and use different languages when thinking.

One names with **words** any objects, processes and phenomena that are seen for the first time when cognizing the World (in the broadest sense of this word). Then one connects every word with one's personal understanding of the World, i.e. with a peculiar **concept**. One describes something cognizable as he understood it.

So, people are constantly facing a situation when the same words mean completely different things for different individuals, because for them these words are already tightly connected with different understanding of objects of cognition, i.e. concepts.

10.5. All beings (entities) possess conceptual thinking

CONCEPTUAL THINKING is able to handle concepts during thinking. [11]

We can assume that all beings (entities) have conceptual thinking, i.e.

- Beings (entities) name every object, process or phenomenon with a **word (sentence)** composed on the basis of their alphabet (ABC);
- Beings (entities) create their own **concepts**, i.e. describe properties of objects, processes or phenomena they have named with a word (sentence) using their own language;
- Beings (entities) are engaged in **conceptual thinking**, i.e. the process of their thinking (reflection) is the handling (combination) of their concepts.

10.6. Measurement of the information (consciousness) and data volume

Of course, the best variant is to process information in the form it was originally recorded on an information carrier. But people have not learned yet to do it on a high-quality level. Therefore, as a rule, it isn't the initial information that is processed, but the data prepared on its basis. Human beings constantly

systematize (analyze, generalize, put in order...) the data obtained during cognition (manifestation, perception...).

DATA is a presentation of information in the form, which is appropriate for future transfer and processing. Therefore, one should distinguish measurement units of "information amount" from measurement units of "data amount".

At the current time, human beings process a variety of audiovisual information - textual, graphic, audio and video information in any combination. Today this type of information is denoted by a word-concept *multimedia*.

People who process information by using computer technology, currently use a **bit** as a measurement unit of data amount.

One can measure any information object and, accordingly, define it as either "amount of information" or "amount of data".

A large "amount of data" can contain a very small "amount of information".

Why is it so? Because data can be:

- compressed in size, using a certain algorithm to speed up processing or save space of the information carrier;
- increased in size, using a certain algorithm for the purpose of backup (duplication, reducing the risk of data loss, possibility to recover data if necessary).

In the above-mentioned cases, the "amount of information" remains the same, regardless of the different "amount of data".

The number of forms in which information can be presented, will steadily grow, in keeping with development of information processing technologies.

10.7. Every being (entity) has a distinct unit of measurement for information (consciousness)

"I very rarely think in words at all. A thought comes, and I may try to express it in words afterwards." [3]

Albert Einstein

Pictorial signs, sensations, sounds, colors, smells, information-energy images, and any other objects one can perceive – all they can serve as ***alphabetic (ABC) elements*** for beings (entities).

So, it is the number of these objects or their elements that can be used to measure the amount of relevant information that is part of consciousnesses of certain beings (entities).

11. PROTECTION OF CONSCIOUS CREATURES IN OUR MORAL AND LEGAL SYSTEMS

Defining certain objects as simple automata or beings (entities) is subjective.

If an observer "sees" (feels) that an object uses consciousness in the course of its activity, this object will be placed to the category of beings (entities).

If the observer does not "see" (does not feel) that an object uses consciousness in the course of its activity, this object falls into the category of automatic devices (automata).

In the nearest future we will be surrounded by more and more beings and entities, which will expand their consciousness year by year, constantly increasing the amount of information they have systematized. Most of man-made devices will be beings (entities).

"Because a great deal of our moral and legal system is based on protecting the existence of and preventing the unnecessary suffering of conscious entities, in order to make responsible judgments we need to answer the question as to who is conscious." [1] **Ray Kurzweil**

Due to the fact that both automatic devices and beings (entities) possess consciousness, from the legal and moral points of view we should consider "Protection of creatures", not "Protection of conscious creatures", because unconscious creatures do not exist. There are only beings whose consciousnesses vary in volume, and whose channels of interaction with their consciousnesses could be of different quality (sometimes they could be damaged to a greater or lesser degree).

“That question is therefore not simply a matter for intellectual debate, as is evident in the controversy surrounding an issue like abortion. I should point out that the abortion issue can go somewhat beyond the issue of consciousness, as pro-life proponents argue that the potential for an embryo to ultimately become a conscious person is sufficient reason for it to be awarded protection, just as someone in a coma deserves that right. But fundamentally the issue is a debate about when a fetus becomes conscious.” [1] **Ray Kurzweil**

When an unborn child is in the womb, its body is connected with the mother's body by the umbilical cord, and the foetus is fully a part of mother's body – like her hand, leg or chest. And, accordingly, one center controls the whole body of a child. This center is a mother's brain, which preserves this information in a mother's consciousness.

When the baby is born, the umbilical cord is cut, and from that moment the child's brain controls its body that becomes not only a conscious object, but also a being.

I'd like to draw your attention to what I said above - it is exclusively about a child's body as a separate module of a human being, who becomes a separate creature from the moment the umbilical cord is cut.

12. FREQUENTLY ASKED QUESTIONS

Can non-biological objects possess consciousness?

- Yes, they can.

Does a human being who lost conscious possess any consciousness?

- In this case, one possesses consciousness, but cannot use it.

Does a human being who is under anesthesia possess consciousness?

- In this case, one possesses consciousness, but cannot use it.

When will people agree that machines have consciousness?

- Initially, all working computer systems have consciousnesses, whether people agree or disagree with it. However, machines become beings only when they begin to apply their consciousness in the course of their activities.

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