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Consciousness and Its Evolution: From a Human Being to a Post-Human

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Introduction

Ph.D. thesis "Consciousness and Its Evolution: From a Human Being to a Post-Human" is in the branches of philosophy of mind, philosophy of religion, metaphysical cosmology, experimental philosophy, and systems philosophy. These branches of philosophy are distributed mostly in the following chapters: philosophy of mind - chapters 1, 2, 4, 5, 6; philosophy of religion – chapters 1, 2, 4, 5; metaphysical cosmology - chapters 3, 4, 5; experimental philosophy – chapters 4, 5; systems philosophy – chapters 3, 5.

The thesis includes the knowledge from the following subjects: mathematics, physics, biology, psychology, and psychiatry. The knowledge from philosophy of Buddhism is used in the thesis too.

The main hypothesis put forward in the thesis is: the age of a person, in its physical and biological sense, may not change with the passed time, i.e. the person*'s bod*y may not have any significant changes for a long period of time. It will take place some time after a person has carried out successfully three stages of the experiment in consciousness.

The hypothesis is stated *in the terms of consciousness. The person'*s consciousness may be partly in our universe, and partly inside a Planckian black hole. If in some period of time it appears *to be in its overwhelming distribution in the Planckian black hole, the person's body will not have* any significant changes. Time does not flow inside the Planckian black hole, it does not exist there.

In the case of the multiverse existence, the distribution of consciousness may be approximately one half in our universe and one half in another universe. Time may flow in another dire*ction in another universe. Thus the person's body will not have any significant changes for* a long period of time.

When *a person's consciousness has been developed to such an extent that she or he does not* become older with age, I consider that she or he does not belong to human beings anymore. She or he has become a post-human due to the evolution of consciousness.

It has been shown that the hypothesis is true. The experiment in consciousness has been described. In order to see practically that the hypothesis is true, dozens of years should have passed. Most probably, the first practical results will be in the middle of the twenty first century.

The main evolution that may and should be carried out is the evolution of consciousness. The development of mind is a necessary condition of the evolution of consciousness. But only after having carried out the experiment in consciousness, the development of mind will be rapid. When a person's consciousness has been developed, it will have its direct influence on the states of a person's mind and body. There will be clear interactions among a person's consciousness, mind,

and body. Moreover, there will be interactions between a person's consciousness and consciousness of other people, as well as between mind of a person and minds of other people.

Chapter 1 of the thesis entitled *"Consciousness*, Mind, and Body*"* deals mostly with conceptions of consciousness, mind, and body used in the thesis.

Different conceptions of consciousness have been taken into account. The peculiar attention has been paid to Colin McGinn's, Paola Zizzi's, and Ervin Laszlo's conceptions of consciousness as well as William James' stream of consciousness.

Concerning a person's consciousness, I consider it to be the most essential part of a person. Concerning consciousness in general, I share Paola Zizzi's and Ervin Laszlo's point of view that consciousness is fundamental property of reality. I do not see any limiting border between a person's consciousness and consciousness in general.

There are some analogies between the conceptions of consciousness described in the thesis and the conception of soul. However the main difference is the conception of soul is based on dualism. The described conceptions of consciousness do not have any signs of dualism.

Distinctions between consciousness and mind understood by Max Velman, Paola Zizzi, and Richard Maurice Bucke have been described.

Peculiar attention has been paid to description of dogmatism in mind and mind without dogmatism. Rupert Sheldrake's dogmatism in science has been presented. Some of the main dogmas in science have been stated.

Rupert Sheldrake strongly criticized the dogmatic statement that mind is in the brain. Not all philosophers and psychologists think that mind is in the brain. A minority has always thought that our perceptions may be in majority in the external world outside heads. William James, Henry Bergson, Alfred North Whitehead, Max Velmans, Alva Noë are among them.

Criticism of scientific approaches towards study of mind, based on the sources provided by B. Allan Wallace, is carried out.

The new conception of extended mind has been presented by Rupert Sheldrake. It differs completely from Andy Clark's conception of extended mind, extended only to parts of body and some devices. Mind is extended both in physical space and time. Mind which is extended connects a person to his or her own past through memory and to probable virtual futures, among which a person chooses.

Mind understood by philosophers and scientists Colin McGinn, Francisco Varela, Evan Thompson, Eleanor Rosch, Andy Clark, Paola Zizzi has been described. Concerning a person's mind, I consider it to be the agent of interactions between a person's consciousness and universe / multiverse.

Mind in Buddhism and consciousness in Tibetan Buddhism have been mentioned. There are two aspects of mind: the ordinary mind and one of "buddha nature". B. Alan Wallace's analysis of the observation of the space of mind according to tradition of Buddhism has been carried out. Consciousness becomes a clear conception when we consider it in the process of a person's dying.

Nearly no conception is suitable in order to describe consciousness and mind. Dualism, materialism, functionalism etc have a lot of drawbacks. The criticism of some conceptions such as dualism and reductionism has been provided.

The research is based on the concept of emergence. In systems philosophy, emergence is the way complex systems arise of a great variety of simple interactions. Emergence is central in the theories of integrative levels. The emergent property of a system is one that is not a property of any component of that system, but it is a feature of the system as a whole.

The research is based on the concept of mindfulness too. Mindfulness had its origin in Buddhism, later it spread and appeared to be in contemporary psychology and psychotherapy, as well as in enactive cognitive science. Mindfulness plays an important role in the process of cognition and acquiring new knowledge.

Will and love as aspects of mind have been described. It has been shown that the task of a person is to develop these two aspects of mind in order to have them fully developed and in unity.

Some questions concerning the personal identity may arise in the thesis. They involve the problems of what is a person and what is for a person to exist through time. These problems have been analyzed by Brian Garret. Also these problems have been analyzed when we consider consciousness, mind, and body to be the parts of a person with consciousness as the most essential part.

Special attention has been given to consciousness, mind, and body unity. The idea of Francisco Varela's, Evan Thompson's, Eleanor Rosch's idea of mind and body unity has been shown. Principle of complementarity derived from quantum physics and the analysis of David Bohm's mind and body interactions have been done.

Mind and body unity will only be understood completely if we take consciousness into consideration. It seems, the person's mind, first of all, has its influence on the consciousness, and only then the person's consciousness has its influence on the body. A lot of efforts should be carried out by the person's mind in order to influence the consciousness, and some time should pass before the unity of the person's consciousness, mind, and body will be achieved, as well as their common interactions with the environment.

Chapter 2 of the thesis *entitled "Altered States of Consciousness*, Evolution of Consciousness, and Cognition*"* deals mostly with altered states of consciousness, and based on them cosmic consciousness and cognition.

Different definitions of altered states of consciousness have been provided. The classification and functions of altered states of consciousness have been worked out. Clear differentiation between altered states of consciousness (ASCo) and altered states of mind (ASMi) have been given.

Ervin Laszlo has pointed out that meditation, prayer, rhythmic movements, and controlled breathing may cause altered states of consciousness which give the possibility to receive non-sensory information. Ervin Laszlo supposes that people in altered states of consciousness receive things which are not expressed by their ordinary senses.

My research interest concerns ASCo that promote avenues of new knowledge or/and experience.

Out-of-body experience as an example of ASCo has been analyzed. It has been stated that out-of-body experience promotes clear differentiation between consciousness and mind.

It has been shown that ASCo may be caused by meditation.

Stanislav Grof's idea of non-ordinary or alternative states of consciousness has been analysed. His observations and insights are based on systematic exploration of practical cases of ASCo and ASMi.

Near-death experiences and cognition during them have been analyzed. Near-death experiences give evidence that life may not end after death. The transformative effects of people who had near-death experiences have been described.

Transference of consciousness (also called as phowa) in Tibetan Buddhism as a classical example of ASCo has been described. It is carried out in two main cases.

The first case is in the period when a person knows or feels that he or she will die in a short period of time. This practice should be tried to be done several times in order to know how to do it in the process of dying.

Another case is when a person would like to rebalance himself or herself. This case is taken into account in my research and Ph.D. thesis. Exactly the experiment in consciousness described in chapter four is done by means of consciousness when it is transferred.

Richard Maurice Bucke's idea of cosmic consciousness has been analyzed. Cosmic consciousness is the next evolution of consciousness. Richard Maurice Bucke stated about the existence of three grades of consciousness and four stages of mind. The evolution form self consciousness to cosmic consciousness based on Richard Maurice Bucke's writings has been analyzed.

From the point of view of self consciousness, cosmic consciousness is a vivid example of the altered states of consciousness, more exactly ASCo. Sometimes cosmic consciousness may seem to be mental disorder. From the point of view of cosmic consciousness, self consciousness

seems to be the consciousness that needs to be developed into cosmic consciousness. The person himself or herself could only develop it.

The possible relations between mystical experience and mental disorder have been analyzed.

Before 1970-ies mainstream psychiatry did not make any distinction between mystical experience and mental disorder. People with such mental disorders as schizophrenia, bipolar affective disorder (maniac episodes), and paraphrenia sometimes have mystical experience, more often than people without any mental disorder. At the same time, people without any mental disorders sometimes may have mystical experience, and this experience does not have any relations to mental disorders. Mystical experience of some people may lead to absolutely new knowledge. Having used the term "absolutely new knowledge", I mean the knowledge not known before to people.

The idea of mysticism as frontier of consciousness based on the thoughts Brother David Steindl-Rast is supported in the thesis.

Three methods of obtaining knowledge including the method by means of altering the state of consciousness have been compared.

Chapter 3 of the thesis *entitled "*The Warping of Time and Consciousness*"* deals mostly with physical and metaphysical cosmology connected with the warping of time.

Firstly, space as energy-filled plenum and the energies connected with plenum have been described, in philosopher Ervin Laszlo's words. Philosopher Freya Mathew has depicted skillfully the elaborated model of transition from panpsychism to the plenum in quantum physics, and later to systems philosophy.

The theory of black holes has been provided. At one extreme, a black hole may have the mass equal to millions of solar masses. At another extreme, a black hole exists at the Planck scale.

The sphere of my research interests deals with singularities created at the Planck scale. Planckian black holes are virtual and "eternal" objects. They could be found everywhere. The Planckian black hole is the lightest possible black hole. At the same time it is much more massive than an elementary particle. It has much smaller size than an elementary particle.

Warping of time begins from Einstein's revolution in relativity theory. He proved that order of events in some length of time is neither fixed, nor absolute. It means that events that should go in the sequence A, B, and C in classical physics, may go in the sequence B, A, and C, or another one. Also there is no absolute time, as well as no absolute space. For example, if the speed of a person travelling in a spacecraft approaches the velocity of light, his or her time will slow down, the space around him or her will shrink, and his or her mass will go towards the infinity. Also there is the warping of time near a star or a black hole. It is the warping of time produced by its strong gravitation.

Postulates of black holes provided the basis for time reversibility. The possibility of time reversibility was shown on the subatomic level too.

Henri Bergson's idea of duration and its connection with mind have been introduced. Duration differs from the conception of time. Ilya Prigogine worked out the conception of internal time based on unstable dynamic systems. In his opinion, the dynamics of these systems has internal time which corresponds to algebra of observables.

David Lewis's has described time travelling and questions of personal identity occurred during time travelling. He distinguished "time itself" from the "personal time of a particular time traveler".

The possibility of time slip could be explained based on the Colin McGinn's, Paola Zizzi's, and Ervin Laszlo's conceptions of consciousness and Rupert Sheldrake's conception of extended mind.

It has been shown that quantum theory denies commonsense physical reality. One of the claims of the quantum physics without any common sense for the majority of people is the following: "if you observed a small object, an atom, say, to be someplace, it was your looking that caused it to be there".

John Wheeler's idea of the participatory universe has been analysed. The application of quantum theory to the entire universe is one of the most impressive extrapolation of physics in the history of science.

Heisenberg Uncertainty Principle has been described. The implications of Heisenberg Uncertainty Principle state that reality consists not of any fixed actualities that we might know but rather of all the probabilities of the actualities. It is not known yet how the possibility becomes actuality in quantum theory.

Bell's Theorem has been mentioned. John Bell proved mathematically that there are genuine nonlocal connections over great distances. The principle of non-locality, i.e. that something could be affected without any local cause, is highlighted in Bell's Theorem.

It has been an attempt to find out what is inside Planckian black holes. All known laws of science are broken inside Planckian black holes. Thus, metaphysical cosmology may be helpful to solve this problem. It has been speculated that the origin of consciousness is inside singularities.

Consciousness has been taken into account in quantum theory. When a person tries to visualize some tiny particles, his or her mind and consciousness are involved in the process.

Chapter 4 of the thesis *entitled "*Experiment in Consciousness*" deals mostly with* experiment in consciousness and cosmology of a geometric point.

Ph.D. thesis which deals with experimental philosophy is based on different philosophical intuitions. Some of them have been developed in the processes of collisions with opposite points of view.

The main backgrounds of the intuition is consciousness and mind based on the theories of A. Einstein's special and general relativity, quantum physics, philosophy of Buddhism, especially Tibetan Buddhism as well as a lot of people philosophical intuitions. The intuition was developed for the period of thirteen years (2001-2014).

Mental imagery as a form of experience has been presented. Mental imagery of a quantum object has been depicted.

It has been proved why the geometric point but not another geometric figure should be taken as an object of mental imagery.

Roberto Assagioli's stages of act of will have been described. They have been used with the aim of preparation for carrying out the experiment in consciousness.

The experiment in consciousness has been described. It is not so called "thought experiment" which is the imaginative one and could be carried out only by means of mind. For sure, the "thought experiment" could be carried out in this case; it will help in understanding the experiment. I am sure the described experiment is a real one. It means the stream of person's consciousness should flow inside a virtual Planckian black hole. And this task should be carried out only by means of mind.

The concept of "one-pointedness" of mind in Buddhism has been described. The main differences between one-pointedness concentration in Buddhism and concentration in the experiment in consciousness have been provided.

Also cosmology of a geometric point has been analyzed. The analysis includes G. Leibnitz's monads, A. North Whitehead's geometric point and cosmology, P. Teilhard de Chardin's Omega Point, D. Bohm's origin of the universe and "moments", S. Hawking's singularity, P. Zizzi's Planckian black hole, R. Abraham's model of omega limit critical point.

The approximation to a point in Tibetan Buddhism and hypnosis has been considered.

It has been shown that inductive reasoning may be wrong. The example from Einstein's relativity theory has been shown.

Gravitational time dilation, dilation connected with a person's consciousness, has been described. It is one of the most important results of the experiment in consciousness.

We do not know if we know any examples of time dilation in past, but we would probably know about it in the nearest future.

We do not know exactly what it is inside a Planckian black hole. But it is quite evident that distribution of a person's consciousness will be outside and inside a singularity after having carried out the experiment in consciousness successfully.

The practical cases concerning time dilation have been considered and the real age of people has been calculated.

Chapter 5 of the thesis *entitled "Evolution from a Human Being to a* Post-Human*"* describes mainly the process of a person's evolution, and particularly evolution of consciosness.

Theories of evolutions have been provided. They are different and they do not coincide with Darwinism or Neo-Darwinism.

P. Teilhard de Chardin mentioned that while working out a theory of evolution, it is necessary to take into account different subjects, such as physics, chemistry, history of religions, mathematics. According to him the evolution is biological, psychological, and spiritual.

Rupert Sheldrake analyzed theories of evolutions and provided his ideas about the evolution based on the hypothesis of morphic resonance.

The evolution of consciousness has been described in the works of Richard Maurice Bucke, Sri Aurobindo, Teilhard de Chardin, Ervin Laszlo, Rupert Sheldrake.

In Sri Aurobindo's words, the change of consciousness will be the next evolutionary transformation. And the consciousness itself with his own mutation will cause the necessary changes in the body of a man.

According to Pierre Teilhard de Chardin, a person takes part in the evolution by means of development of his or her consciousness. He mentioned: "Evolution = rise of consciousness, Rise of consciousness = Union effected".

Ervin Laszlo has mentioned that our consciousness is not permanent; it has been developing for a long period of time. During the last fifty thousand years, a person's body has not changed in a great deal, but consciousness changed a lot. Human consciousness has evolved from simple forms and will evolve further if human beings survive.

Rupert Sheldrake has put forward some questions to be answered in the future. These questions deal with evolution of consciousness as a goal of evolution, its development in the universe, and probable contacts of our consciousness with other minds in the universe.

The idea of a post-human has been presented. Max More's and Nick Bostrom's ideas of a post-human and becoming a post-human have been criticized. The idea of a transhuman has been presented too.

The model of a person's evolution has been provided. The model of a person's evolution is the following: a human being, a post-human$_1$, a post-human$_2$, a post-human$_3$, and so on (to the infinity). Instead of the names "post-human$_1$", "post-human$_2$", "post-human$_3$" etc, other names could be taken, but these names seem to be the most appropriate. Post-humans$_1$ are higher in their evolution than human beings and lower than post-humans$_2$. Similarly post-humans$_2$ are higher in

their evolution than post-humans$_1$ and lower than post-humans$_3$ and so on. Later instead of using the name "post-human$_1$", I will use simply "a post-human".

A person has become a post-human when his or her time dilation is nearly equal to the passed time of another person for some period of time.

Erwin Laszlo has mentioned that there were paradigm shifts based on theories of Galileo, Kepler, and Newton from the seventeenth to the nineteenth century. There were a lot of revolutions in physics, biology, cosmology, and consciousness studies in the twentieth century. At the same time, researchers in the mentioned field have found great anomalies. Ervin Laszlo has supposed that another scientific revolution is to happen. In his opinion, the rise of integral quantum science provides the paradigm shift.

Theory of multiverse has been analyzed. The idea about the white holes existence has been provided.

Itzhak Bentov's model of border between universes has been described. It consists of a black hole in an old universe in which energy goes in and a white hole in a new universe from which energy goes out. According to Itzhak Bentov, the white and black holes are not only the points of birth and death of matter, but also the points of the birth and death of time.

The model of Uniborder has been introduced. Uniborder is a model of quantum physics system and multiple possible universes theory that combines our universe and another universe or other universes. It consists of Planckian black hole (our universe), traversable wormhole (the exact border) and Planckian white hole (another universe or other universes). Uniborder is a geometric point model as far as its dimensions are estimated to be so tiny that could be compared with the point.

Stages of carrying out the experiment in consciousness have been described. The consciousness continuous flow will reach its first destination in the event horizon of the Planckian black hole (stage one). The middle destination of the consciousness flow is the wormhole (stage two). The final destination of the consciousness flow is another universe or other universes (stage three).

Time dilation has been considered in the case of multiverse existence. In this case we may speak about time reversibility concerning a part of the person's consciousness.

P. Teilhard de Chardin's, E. le Roy's, and V. Vernadsky's noosphere has been described. P.Teilhard de Chardin mentioned that noosphere had been created in the process of evolution as a result of the development of the mind.

The model of Collective Uniborder has been introduced. Collective Uniborder is a part of noosphere, bordering noosphere and another universe. It is a sphere around the Earth consisting of individual Uniborders.

Mathematical intuition has been described in the cases of only our universe as well as multiverse existence. The case of possible time travel has been taken into account.

The existence of fields of consciousness and mind has been supposed to be true based on the writings of Ervin Laszlo, Rupert Sheldrake, Carl Jung, Teilhard de Chardin, and Itzhak Bentov. It should be mentioned that the mentioned fields are not supernatural, they are natural. They are usually cognitively closed for people. The fields give explanations for such psychical phenomenon as time slip.

The elements of theories of bifurcation and chaos have been described. They have been used with the aim of understanding dynamic system of the fields of consciousness and mind.

The third stage of the experiment in consciousness and afterwards have been described in terms of systems philosophy.

Chapter 6 of the thesis *entitled "*Post-Human Possibilities and Abilities*"* describes mainly post-human possibilities and abilities which are supposed to be.

Philosopher Asher Seidel has written about possible post-human possibilities and abilities. The selected issues which deal with the research are: facing immortality, parallel thought processes, mindful seeing.

I have speculated about such post-human possibilities and abilities as arrested ageing, highly developed intuition, backward causation, cosmic consciousness, communication and "seeing" by means of mind and actions at a distance. Communication and "seeing" by means of mind includes such psychic abilities as telepathy, perception at a distance, and perception through time. Actions at distance include actions with probable events in future and direct mental interactions with living systems.

Chapter 1

Consciousness, Mind, and Body

1.1 Conceptions of Consciousness

The main conceptions described in the thesis include Colin McGinn's, Paola Zizzi's, and Ervin Laszlo's ones. These are the main conceptions forming the basis of Ph.D. thesis. They are useful because they describe consciousness as a fundamental property of reality and the most essential part of a person.

1.1.1 Colin McGinn's Conception of Consciousness

Philosopher Colin McGinn has mentioned that consciousness is peculiar. We could not touch or see it, even study with the usage of microscopes. At the same time, it is "the most obvious reality in the world"[1]. Any research in the brain will not give out the solution of problem of finding consciousness.

Colin McGinn has taken into consideration four most popular conceptions of consciousness and criticized them. The first, extreme, conception is called as eliminativism. The theory denies that consciousness exists. It states only about the existence of the material brain as well as neurons, chemicals. The second conception is the "acknowledge the pervasive presence of the supernatural."[2] Consciousness is considered to be the expression of God. It is compared with the immortal soul.[3] The third conception is radically irreducible. According to the conception, "consciousness is a primitive existent", but it is not miraculous. It is stated that consciousness experience is connected with the brain. At the same time no attempt is done to explain this connection. The fourth conception embraces different reductive conceptions as materialism, functionalism etc. All these conceptions try "to domesticate the phenomenon, to provide a deflationary account of its nature".[4] Consciousness is ordinary there.

Colin McGinn has mentioned that none of these theories works.[5] Colin McGinn criticizes different conceptions of consciousness. "Theories of consciousness tend to seem either too dull and sensible or too wild and nutty. Thus we still have the unregenerate reductive materialists and functionalists as well as a new breed of boldly speculative souls who toy with radical forms of

[1] C. McGinn, The Character of Mind. An Introduction to Philosophy of Mind, Oxford University Press Inc., New York 1996, p. 41
[2] Ibid., p. 41
[3] If God is taken outside our universe, I think that conception could explain consciousness.
[4] Ibid., p. 42
[5] Concerning the second conception, the conception will work; in this case the conception will be natural.

dualism or who find links to the puzzles of quantum physics or who seek to resurrect panpsychism."[6]

He has proposed his conception of consciousness. According to the conception, "the nature of consciousness is a mystery in the sense that is beyond human powers of theory construction".[7] Only omniscient could explain consciousness completely; but human beings are not omniscient. Some explanations exist how matter produces consciousness, but they are not open to people.[8] He has mentioned that consciousness goes beyond what could be understood by people comparing the theoretical physics and its understanding by chimpanzees.

The problem could not be solved because of cognitive limitations. The hypothesis, called transcendental naturalism (TN) by him, states that there are some things which could not be explained. These things include the way brain and consciousness are correlated, and mind-body problem in general.

Colin McGinn has mentioned that brain is a specific material object; it has property that others lack, i.e. consciousness. The consciousness is obvious to a person who possesses it, but this consciousness could not be observed by other people. Our senses do not register consciousness.

There are properties of a brain that do not have anything in common with physical objects conceiving. These properties are not on the same level as other properties of the brain that could be perceived. And it means that they could not be understood from the brain's perceptible features. We know that consciousness is connected to the brain. Its reason is not in the fact that it could be observed in the brain. The matter is because if the brain is taken away, there is no evidence that consciousness exists.[9] If not this, there would not be a reason to attribute it to the brain.

The relation to space is the aspect of consciousness that is worth considering. The brain is spatial; it occupies regions of space and consists of spatial parts. Colin McGinn considers consciousness to be non-spatial.[10] Consciousness is not located in its usual way. It is outside of space, space in its understanding in terms of physics. It is adjacent to some abstract realm. "Consciousness is linked to matter-in-space in some way, but its properties are not those of space as we now conceive it", - Colin McGinn has summarized.[11]

Colin McGinn would like to find out how consciousness which is not non-spatial had the origin in the spatial universe. According to cosmology, the universe did not contain consciousness in the past, it contained only matter. Later the evolution of life started and matter began forming

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[6] Ibid., p. 47

Concerning quantum physics, there are different cases of its application in the theories of consciousness. Not all cases can be considered wrong or highly speculative.

[7] Ibid., p. 42

[8] Concerning the mentioned case, I do not agree with Colin McGeen that matter produces consciousness.

[9] I think it is possible that it exists.

[10] By analogy with consciousness that is non-spatial, we may consider consciousness to have non-time characteristics, in other words, consciousness deals with the warping of time.

[11] Ibid., p. 47

solid mass in different ways according to the natural mechanism selection. Then nuclei appeared that lead to the formation of brains, and, probably, consciousness appeared. "The only ingredients in the pot when consciousness was cooking were particles and fields laid out in space, yet something radically non-spatial got produced."[12] Colin McGinn concluded that non-spatial occurred from spatial and this non-spatial was the construction out from spatial.

Colin McGinn has drawn an analogy between emerging of consciousness and the big bang. The big bang is regarded to be the inverse problem, i.e. spatial things appeared from non-spatial. There was nothing spatial before the big bang. "The brain puts into reverse, as it were, what the big bang initiated: it erases spatial dimensions rather than creating them. It undoes the work of creating space, swallowing down matter and spitting out consciousness."[13] Colin McGinn speculates that the origin of consciousness may have the properties of the universe that it had at the time of big bang. Consciousness seems to be older than matter in the universe.[14]

It has been mentioned that Euclidian conception of physical space was replaced by the geometries which are not intuitive. At the beginning the curved space-time replaced the physical space. Quantum theory added other characteristics to the nature of space such as particles do not have their unique locations, and non-local connections. Thus it has become not so easy to differentiate space from non-space.[15] Further string-theory and many-worlds hypothesis appeared, and further dimensions appeared.

Colin McGinn has summarized that "consciousness and space must be related in some intelligible naturalistic fashion".[16]

1.1.1.1 Owen Flanagan's Analysis of Colin McGinn's Conception of Consciousness

Colin McGinn's conception of consciousness was entitled by philosopher Owen Flanagan as anticonstructive naturalism, noumenal naturalism, or new mysterianism.[17] He has mentioned that this is a philosophical position that naturalism is true. In Owen Flanagen words, Colin McGinn considers we could not understand properties of the brain that stand naturalistically for consciousness.[18] Consciousness is mysterious to us not because it is the phenomenon which is non-natural, but because its understanding is "cognitively closed" to us.

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[12] C. McGinn, Consciousness and Space, Available at http://www.nyu.edu/gsas/dept/philo/courses/consciousness97/papers/ConsciousnessSpace.html
[13] Ibid.
[14] In fact, a brain may not generate consciousness, but only receive it; see Ervin Laszlo's conception of consciousness and Rupert Sheldrake's conception of mind.
[15] In fact, quantum theory did the exact differentiation between space and non-space.
[16] C. McGinn, Consciousness and Space, Available at http://www.nyu.edu/gsas/dept/philo/courses/consciousness97/papers/ConsciousnessSpace.html
[17] According to Owen Flanagan, the "old mysterians" were dualists who believed that consciousness could not be understood in a scientific way because it does not possess any natural properties.
[18] In fact, C. McGinn has only written that we could not understand consciousness completely.

Owen Flanagan has stated that "the doctrine is mischievous"[19], but at the same time, the position is coherent. He mentioned some limitations in physics and mathematics such as Heisenberg's Uncertainty Principle and Gödel's Incompleteness Theorem.[20]

1.1.2 Paola Zizzi's Conception of Consciousness

Astrophysicist and philosopher Paola Zizzi has written that despite the fact that everyone knows about his or her consciousness, it is very hard to tell about the subjective experience to other people. She has mentioned that a scientific definition of consciousness does not exist. The study of consciousness is highly interdisciplinary; it includes the branches of philosophy, cognitive science, biology, theoretical physics, and mathematics. A person couldn't tell that he or she knows about consciousness. The "expert" could not be there.

She has criticized the reductionist approach to consciousness. In her words, this approach where mind does not differ from brain is called in different ways such as materialism, physicalism, reductionalism, functionalism, and computionalism. The main reasons for their criticism are: consciousness is not computable in general and reductionism could not explain "hard problem"[21], i.e. how physical processes in the brain give subjective experience.

Paola Zizzi considers consciousness to be a fundamental property of reality. She mentions that the roots of consciousness could be found in "the space-time at the Planck scale". [22]

She mentions that at this scale space-time begins to loose its structure and becomes the "quantum foam", the one consisting of virtual Planckian black holes and wormholes.[23] According to Paola Zizzi, "consciousness exists, but its origin cannot be probed, just like Planck-scale physics."[24] The Planck scale could not be tested. And any attempt of examining space-time at Planck scale would lead to results that belong to another universe. Consciousness exists, but its origin could not be examined.

Paola Zizzi has corrected Colin McGinn's statement that consciousness is non-spatial. She has mentioned that people perceive space-time as a smooth continuum with four dimensions. In fact, the structure of space-time is discrete. It becomes obvious at the Planck scale. A point in the continuum with four dimensions at this scale does not have its meaning as the point. It becomes an

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[19] Nothing mischievous is in the conception, it is clear.

[20] Heisenberg's Uncertainty Principle will be described in Chapter 3.

[21] The term was coined by philosopher David Chalmers.

[22] P. Zizzi, Consciousness and Logic in a Quantum-Computing Universe, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Springer 2006, p.472

The Planck scale refers to a very small size case that is equal to 10^{-33} cm.

[23] Black hole is "maximum condensed energetic spacetime that by swirling motion create Einstein's spacetime curvature that create vortex and from the most condensed vortex space [called singularity] expelled swirling path [string] that create open or closed quanta formations" (H. Tejman Chaim's definition). Planckian means of the Planck scale. Black holes will be described in chapter three.

Wormhole is "a "handle" in the topology of space, connecting two widely separated locations in our universe" (K. Thorne's definition). It may also connect separate locations in the multiverse.

[24] P. Zizzi, Consciousness and Logic in a Quantum-Computing Universe, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Springer 2006, p.471

extended object. She has concluded that consciousness is non-spatial because space-time is not a real thing at the Planck scale, it is the quantum foam.

1.1.5 William James' Stream of Consciousness

William James advocated that consciousness should be studied introspectively. Knowledge should be based on people's own experience, inner life.

William James stated:

> The Fundamental Fact. -- The first and foremost concrete fact which every one will affirm to belong to his inner experience is the fact that consciousness of some sort goes on. 'States of mind' succeed each other in him.[25]

It means that consciousness is not static, it is dynamic.

> Substantive' and 'Transitive' States of Mind. -- When we take a general view of the wonderful stream of our consciousness, what strikes us first is the different pace of its parts. Like a bird's life, it seems to be an alternation of flights and perching.[26]

In the cases of people who noticed that consciousness goes, there are different phases, ones when consciousness flows and ones when consciousness does not go.

One more important thing concerning the phenomena of deliberate will and selective attention was mentioned by William James. "Consciousness is always interested more in one part of his object than in another, and welcomes and rejects, or chooses, all the while it thinks."[27] This phenomena acquires particular attention why some people cannot understand some realities of the world, while others understand them easily and quickly.

William James' conception of consciousness has been chosen in order to show that we should consider consciousness to be dynamic.

1.1.6 Ervin Laszlo's Conception of Consciousness

Systems theorist Ervin Laszlo has mentioned that consciousness is not only phenomenon of a human being. We know only our own consciousness, but it does not have the right to state that

[25] W.James, The Stream of Consciousness, Psychology, 1892, Chapter XI, [Online]. Available at http://journalofcosmology.com/Consciousness121.html

[26] The matter is the overwhelming majority of people do not notice the stream of their consciousness. But it does not mean that it does not flow.

[27] W.James, The Stream of Consciousness, Psychology, 1892, Chapter XI, [Online]. Available at http://journalofcosmology.com/Consciousness121.html

consciousness is limited only to human beings. Consciousness is considered to be primary in the world.[28]

Ervin Laszlo has strongly criticized the materialistic conception of consciousness. He has pointed out that no evidence exists that a brain is the source of consciousness. The function of a brain and state of consciousness are only closely connected to each other. When the function of a brain stops, no evidence exists that consciousness stops functioning too. The vivid example of this is near-death experiences, when people had remarkable experiences while their electroencephalogram showed that their brains did not work at all.[29]

It has been criticized David Chalmers' approach in understanding of consciousness. His "hard" problem, how consciousness could arise from matter or brain, is ill-posed. Ervin Laszlo has agreed with the point of view of philosopher Peter Russel that this problem is not hard. It is not possible. This is not a real problem as far as there is no need to explain how brain produces immaterial consciousness, because "consciousness matter is not entirely unconsciousness, nor is consciousness fully divorced from matter".[30]

It has been stated that the cosmos itself possesses consciousness in some form. Consciousness is considered to be fundamental. The roots of consciousness are extended to the quantum vacuum. It has been argued that "…the vacuum is not only the seat of superdense virtual energy field from which spring wave-packets we call matter, but also a cosmically extended proto- or root-consciousness."[31] It is not possible to realize this by ordinary sensory experience. The reasons are: we could not observe vacuum fields; their existence could be inferred from the observable things; consciousness of another person could not be observed.

Ervin Laszlo has mentioned that there are some approaches towards observation of consciousness. These approaches include its observation in the altered states.[32] If a person identifies oneself with the vacuum, he or she, most probably, would "experience something like a cosmic field of consciousness".[33] [34] It means that a state of mind without any thoughts should be achieved, at least for a very short period of time.

In Ervin Laszlo's words, people practicing yoga and deep meditation could have the access to cosmic field of consciousness. According to the Vedic traditions, consciousness is regarded as a

[28] E. Laszlo, Science and the Akashic Field, An Integral Theory of Everything, Inner Traditions, Rochester, Vermont 2004, Chapter 8
[29] Near-Death Experiences will be described in details in Chapter 2.
[30] E. Laszlo, Science and the Akashic Field, An Integral Theory of Everything, Inner Traditions, Rochester, Vermont 2004, p.146.
[31] Ibid., p.154
[32] Chapter 2 deals with the altered states of consciousness.
[33] E. Laszlo, Science and the Akashic Field, An Integral Theory of Everything, Inner Traditions, Rochester, Vermont 2004, p.154.
[34] See Richard Maurice Bucke's Idea of Cosmic Consciousness in Chapter 2.

extremely large field that is the primary reality of our universe. This field could be experienced in meditation but only when "the gross layers of the mind are stripped away".[35]

1.2 Consciousness and Soul

There are some analogies between the conceptions of consciousness described in the thesis and the conception of soul. However the main difference is the conception of soul is based on dualism. The described conceptions of consciousness do not have any signs of dualism.

It has been believed that the soul gives life to the body. Plato considered the soul to be separate from the body. In his opinion, the soul is the most important part of a person; it makes a person. A person could not exist without a soul. The person's soul and body interacts; changes in the body often make changes in the soul happen, and changes in the soul often cause changes in the body. Plato also thought that at time of death, a person's soul and body are separated; the soul continues to live its own life.

The religion of Christianity took Plato's conception of the body. It is believed in life after death. However Christian tradition, unlike some other traditions, denies the possibility of reincarnation, a new life of the soul in another body.

At present moment, a lot of people believe that their soul is more important than their body. They consider the soul to be immortal.

1.3 Problems in Definition of Consciousness

Practically everybody thinks she or he knows about his or her consciousness. At the same time it is not easy to speak about subjective consciousness. Correct definition of consciousness does not exist. Consciousness study is an interdisciplinary subject. Sometimes psychologists, cognitive scientists, philosophers, astrophysicists use the term "consciousness" in different ways. Even philosophers may define "consciousness" differently.

Peter Russel has explained the problem which appears connected with the word "consciousness":

> The difficulty surrounding the meaning of the word consciousness arises in part from the fact that in English we have only one word to convey so many different meanings. In Sanskrit, the ancient Indian language, there are some twenty different words for consciousness, each with its own specific

[35] Ibid., p.155

> meaning, some representing concepts with which we in the West are barely familiar. For example, chitta is the "mindstuff" or "experiencing medium" of the individual; chit is the "eternal consciousness" of which the individual mindstuff is a manifestation; turiya is the experience of pure consciousness focused on an idea; purusha, the essence of consciousness, is somewhat akin to Holy Spirit.[36]

From the meanings mentioned here, the word "purusha" corresponds to the "consciousness" in my thesis.

Peter Russel has argued that an important characteristic of the beings with consciousness is the skills to build inner models of the world they perceive. The greater the consciousness means the more complex models. Insects, worms, birds, reptiles, fish, mammals have consciousness. A worm is likely to have simple model of reality. A dog's model is much more complex comparing to a worm's model. In Peter Russel's words, a human has so complex model of reality that it includes the self. People not only experience the world within and around them, they are also aware of themselves in the world.[37]

In my opinion, Peter Russel exaggerates that humans are aware of themselves; they in a great majority do not know how to indentify themselves: what is their constitution. For example, materialists think they people consist only of bodies, dualists think people's minds do not interact with their bodies.

I argue in chapter six that a post-human experience of the world is more complex than a human being's experience. A post-human has a highly developed mind; he or she is able to carry out perception at a distance and through time; he or she could actions with probable events in the future and direct mental interactions with living systems including human beings.

Concerning consciousness, in general, I share Paola Zizzi's point of view that consciousness is fundamental property of reality. I do not see any limiting border between a person's consciousness and consciousness in general. Concerning a person's consciousness, I consider it to be the most essential part of a person.

Ervin Laszlo's conception of consciousness, in general, is one that my research is based on. Paola Zizzi's conception which complements Colin McGinn's one with some backgrounds in physics and mathematics has been used in a great deal. I do not agree with Colin McGinn that matter produces consciousness. I consider consciousness to be dynamic as described by William James.

1.4 Distinctions between Consciousness and Mind

[36] P. Russel, The Global Brain Awakens: Our Next Evolutionary Leap, Global Brain Inc., USA 1995, p. 82
[37] Ibid., p. 83

Psychologist Max Velmans made clear distinctions between the terms "consciousness" and "mind". He has mentioned that it is not an easy task to define consciousness. In his opinion, it is possible to make the definition "by contrasting the situation where it is present and absent"[38] On his view, mind refers to psychological processes.

Paola Zizzi has not given any definition of consciousness; she has mentioned that scientific definition of consciousness does not exist. She has emphasized that the task of mind is to carry out interaction with the whole universe.

Clear difference between consciousness and mind was made by psychiatrist Richard Maurice Bucke who depicted three grades of consciousness and four stages of mind.[39]

Altered states of consciousness could give clear distinctions between mind and consciousness.[40] A person could register his or her own stream of consciousness, and mind as an agent of interactions between the consciousness and environment.

1.5 Problems in Definition of Mind

Oxford Dictionary of English gives the following definition of the word "mind":

> 1. the element of a person that enables them to be aware of the world and their experiences, to think, and to fell; the faculty of consciousness and thought;
> 2. a person's ability to think and reason; the intellect;
> 3. a person's attention, particularly a person's will or determination to achieve something.[41]

The Blackwell Dictionary of Western Philosophy renders "mind" in the following way:

> Descartes used the terms mind and soul interchangeably. For him, the mind is identical to self, person, the substance that thinks, believes, doubts, desires, and acts. For others, like Hume, the mind is a set of psychological states, and in this sense it is close to consciousness but contrasts to physical states. Different understandings of mind lead to different understandings of the mind-body problem. If one believes in a Cartesian mental substance, the mind-body problem involves the relationship between one's mind as a mental substance and one's body as a physical substance. If, on the other hand, one holds that minds are collections of psychological states, the problem is to explain the relation between one's psychological properties and one's physical properties. There has been

[38] M. Velmans, Understanding Consciousness, London: Routledge/Psychology Press 2009, p.23
[39] See Chapter 2
[40] Altered states of consciousness are described in Chapter 2.
[41] Oxford Dictionaries, [Online]. Available at http://oxforddictionaries.com/definition/mind

renewed interest in the Aristotelian account of the mind that Descartes displaced. On this view, the mind or soul is the form of the body, although this position might have theoretical presuppositions that cannot be revived. [42]

The problem in the definition of the word "mind" is that we should define it by means of mind. The complete and accurate definition of mind is missing. I place a person's mind in the hierarchy between consciousness and body. I consider mind to be an agent of interactions between the person's consciousness on one side, body and the environment on another side. I do not support point of view that mental phenomena supervene on physical facts.

1.6 Dogmatism in Mind and Mind without Dogmatism

1.6.1 Dogmatism in Mind

The Free Dictionary by Farlex gives the definition of the word "dogmatism":

"1. a statement of a point of view as if it were an established fact.

2. the use of a system of ideas based upon insufficiently examined premises"[43]

Let us analyze the premise: "Mind does not have the ability to influence the body". This premise is not sufficiently examined. For sure, it is not proved. But the majority of scientists and Western philosophers consider it to be the established fact. Perhaps, they studied this at school, university. They have never had the experience that their mind has the ability to influence their body. The premise that mind does not have the ability to influence their body became the dogmatism in their minds.

What will probably happen when they read or listen something like as "Mind has the ability to influence the body". I suppose that in the majority of the cases, their mind will subconsciously reject this premise. It is an example of dogmatism in mind.

The same dogmatism in mind could also occur when a person has always thought that mind has the ability to influence the body. It does not occur in a lot of cases.

It seems any statement that is the established fact could be shown to be dogmatism. Even, "two plus two equals four" is dogmatism. Oxford Business English Dictionary states that "two plus two equals five" is "a phrase used to express the idea when two organizations work together or

[42] The Blackwell Dictionary of Western Philosophy, Edited by: N. Bunnin and J. Yu, [Online]. Available at http://www.blackwellreference.com/public/tocnode?id=g9781405106795_chunk_g978140510679514_ss1-130

[43] The Free Dictionary by Farlex, , [Online]. Available at http://www.thefreedictionary.com/dogmatism

when two companies join together (merge), more can be achieved than if they are working separately". It is also known as synergy.[44]

When we add two apples to two apples, we receive four apples. When we add two ideas to two ideas, we may receive five or more ideas. Thus two plus two does not necessarily equal four.

It seems an overwhelming majority of people has dogmatism in their minds. A few dogmatisms of the same person may even contradict each other. For example, such premises as "God can do everything" and "A person, in its physical and biological sense, becomes older with the passed time" contradict each other. These are points of view of a lot of people. They know the latter premise is true from their every day experience. They believe that the former premise is true. But, if God can do everything, God could already have done that some people do not become older with age. Or, alternatively, if each person, in its physical and biological sense, becomes older with the passed time, God cannot do everything. Or, perhaps, God does not wish to do it. In this case, God could be asked for it, or the person could pray for it. But the process of asking or praying for it contradicts to common sense.

I show that statement "A person, in its physical and biological sense, becomes older with the passed time" is dogmatic.

Albert Einstein proved "A person, in its physical and biological sense, may not become older with the passed time" in relativity theory. The classical example was a person travelling in the spacecraft at the speed of the light. The problem is that at present moment it cannot be done. We do not have any equipment to travel nearly or at the speed of the light. Therefore, the absolute majority of people believe that "At present moment a person, in its physical and biological sense, becomes older with the passed time".

The example described in the thesis allows us to reach the state when our bodies will not have any significant changes for a long period of time. It is the case of gravitational time dilation based on a person's consciousness. Perhaps some people have reached the mentioned state. Therefore, "At present moment a person, in its physical and biological sense, becomes older with the passed time" is a dogmatic statement.

1.6.2 Mind without Dogmatism

It is important to develop mind with less and less dogmatism. A person may sometimes think that he or she does not have any dogmatism in mind. In fact, the dogmatism may be deeply embedded in his or her unconsciousness. If the dogmatism was embedded for a long period of time, say twenty years, a long period of time is necessary to get rid of it.

[44] Oxford Business English Dictionary for Learners of English, Edited by D. Parkinson, Assisted by Joseph Noble, Oxford University Press 2005, p.1

Case 1

Nearly every adult person has dogmatism in his or her mind that a person will die. In other words, nearly every person knows or believes that he or she will die in some period of time, say twenty or fifty years.[45] The knowledge has been based on the domains of theoretical knowledge and practical observation. This dogmatism has become embedded in mind since early childhood. A lot of other statements have been based on the mentioned dogmatism.

The task is to get rid of it. It is a difficult task. Firstly, it is necessary to find some reasons to explain, at least to yourself, why it may not happen. Secondly, the statements based on the mentioned dogmatism should be restated.

But only when the dogmatism is overcome, it is possible to observe introspectively that mind begins *"*working better*"*.[46]

I think it is possible to have mind without any dogmatism. In this case, a person's mind will be much more developed. Most probably, a person's mind would be similar to Gautama the Buddha's mind and even better.[47] Also mind will have the emergent abilities to carry out the actions with probable events in future.[48]

1.6.3 Rupert Sheldrake's Dogmatism in Science

Biologist Rupert Sheldrake has described ten main beliefs that most scientists take them as dogmas in his book *"The Science Delusion, Freeing the Spirit of Enquiry"*.[49] He has mentioned that despite the fact, that science and technology has had their triumph, in the second decade of our century unexpected problems have appeared which "disrupting the sciences from within". Rupert Sheldrake argues that science could not solve some problems because there are some assumptions in science that became dogmas.

It has been mentioned that contemporary science is based on the statement that the reality is material. Consciousness is only by-product of the activity of the brain. In Rupert Sheldrake's words, these and other beliefs are strong, "not because most scientists think about them critically but because they don't".[50]

Here are four of ten core dogmas in science presented by Rupert Sheldrake:

1. Nature is purposeless, and evolution has no goal or direction.

[45] The case when a person has a mental disease such as schizophrenia has not been taken into account. The person having schizophrenia may believe that he or she will never die, but he or she will never explain any reasons of his or her belief.
[46] It is not the aim of Ph.D. thesis to prove or show that a person may not die.
[47] Gautama the Buddha's mind is described further.
[48] See "Actions with Probable Events in Future" in chapter 6.
[49] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012
[50] Ibid., p. 7

2. All biological inheritance is material, carried in the genetic material, carried in the genetic material. DNA, and in other material structures,

3. Minds are inside brains and are nothing but the activities of brains. When you look at a tree, the image of the tree you are seeing is not 'out there', where it seems to be, but inside your brain.

4. Memories are stored as material traces in brains and are wiped out at death.[51]

Statements three and four have been shown to be dogmatic in Rupert Sheldrake's conception of extended mind. Statements one and two have been depicted to be dogmatic in Rupert Sheldrake's conception of evolution.[52]

1.7 Criticism of Scientific Approaches towards Study of Mind

Criticism of scientific approaches towards study of mind provided here is based on the sources from the book "Hid*den Dimensions: The Unification of Physics and Consciousness"* and paper "A Science of Consciousness: Buddhism (1), the Modern West (0)" written by B. Allan Wallace.[53] [54]

It has been posited that science uses the methods of quantitative and objective observation. Qualitative and subjective mental phenomena are not usually taken into account. Even when the scientists pay attention to mind, they pose questions only about neural causes and behavioural effects. The methods which have been used to carry out the exploration of mind are the ones which are within the conception of scientific materialism. The mental phenomena are assumed to be the emergent properties of mind.[55]

B. Alan Wallace has argued that the scientific study of mind in the West has been delayed since the Scientific Revolution. Science has not developed any methods for observing mind itself. Also the science of mental illness has been elaborated, but the science of mental health is missing. There are no any criteria according to which mental health should be identified. There is no any science how to develop extraordinary mental health and happiness.[56]

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[51] Ibid., p. 7

[52] The conception of evolution is in chapter five.

[53] B. Allan Wallace, Hidden Dimensions: The Unification of Physics and Consciousness – Columbia University Press, New York, USA 2007

[54] B. Allan Wallace, A Science of Consciousness: Buddhism (1), the Modern West (0), [in:] The Pacific World: Journal of the Institute of Buddhist Studies, Third Series, No. 4, Fall 2002, p. 15-32, [Online]. Available at http://alanwallace.org/Pacific%20World%20Essay.pdf

[55] B. Allan Wallace, Hidden Dimensions: The Unification of Physics and Consciousness – Columbia University Press, New York, USA 2007 p. 4-5

[56] B. Allan Wallace, A Science of Consciousness: Buddhism (1), the Modern West (0), [in:] The Pacific World: Journal of the Institute of Buddhist Studies, Third Series, No. 4, Fall 2002, p. 15-32, [Online]. Available at http://alanwallace.org/Pacific%20World%20Essay.pdf , p. 13-16

In B. Alan Wallace's words, one more problem that occurs is mind and mental phenomena should be observed by means of mind which appears to be problematic. One more problem arises that mind is often not "purified".

It has been argued what should be done:

> A true revolution in the mind sciences has been delayed by an enforced conformity to the unnatural ideological and methodological constraints imposed by the assumptions of scientific materialism, especially neo-Darwinism. One such assumption is that mental phenomena are equivalent to neurophysiological processes in the brain, an empirically uncorroborated belief. If the first revolution in the mind sciences is to take place, such unsubstantiated ideas must be suspended and new methodologies must be employed that are uniquely suited to the scientific study of mental phenomena including consciousness.[57]

According to B. Alan Wallace, science should provide open-minded investigation of mental phenomena even if the deeply rooted scientific beliefs appear to be wrong and it would be necessary to get rid of them. The belief system of scientific materialism should be reconsidered. Mind may be immaterial; it could not be reduced to brain. A first-person investigation of mind should be taken into account.[58]

1.8 Conceptions of Mind

The main conception described in the thesis is Rupert Sheldrake's conception of extended mind. The conception of mind extended in space and time has formed the basis of Ph.D. thesis.

1.8.1 Rupert Sheldrake's Conception of Extended Mind

Biologist Rupert Sheldrake considers mind not to be confined to a brain. Based on the facts provided by psychologist Jean Piaget, he states that children at the early age do not know that the mind is within the brain. Only by approximately the age of eleven, more children took the materialistic point of view that images and thoughts are in the head.[59]

Rupert Sheldrake mentions that educated people do not often question the "scientifically correct" point of view that mind is in a brain; they do not want to be considered as "stupid, childish

[57] B. Allan Wallace, Hidden Dimensions: The Unification of Physics and Consciousness – Columbia University Press, New York, USA 2007 p. 5
[58] B. Allan Wallace, A Science of Consciousness: Buddhism (1), the Modern West (0), [in:] The Pacific World: Journal of the Institute of Buddhist Studies, Third Series, No. 4, Fall 2002, p. 15-32, [Online]. Available at http://alanwallace.org/Pacific%20World%20Essay.pdf , p. 23
[59] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012, p. 212

or primitive". At the same time this "correct" view, in Rupert Sheldrake's words, contradicts our experience. People do not have images inside heads; they see things outside their bodies.

The idea of a field theory of mind has been proposed. He has compared the field with the one of a magnet, gravitational field of the earth, and electromagnetic field of a mobile phone. He suggests that the fields of minds are within the brains and beyond them.[60] Thus mind is extended in space.

The materialistic conception has been strongly criticized by Rupert Sheldrake. There has never been any evidence that mind is only the activity of brain. Direct experience does not show any support for the claim that all images, thoughts are within brains. It has been stated that images of the things, both the ones we see and do not see, are outside our heads, our bodies.

Four hundred years of mechanistic science have gone; but no progress has been in understanding about the way the brain produces subjective experience. The orthodox belief is that brain makes an image inside the brain. According to Rupert Sheldrake, idea of visual experiences inside heads leads to odd consequences mentioned by philosopher Stephen Lehar[61] For example, when we look at the sky, the sky that we see is inside the head; but the head is outside the sky.

Rupert Sheldrake points out that despite the unproved theories of scientists and most philosophers, the majority of people do not believe that all their experiences are within their heads. Not all philosophers and psychologists think that mind is in the brain. A minority has always thought that our perceptions may be in majority in the external world outside heads. William James, Henry Bergson, Alfred North Whitehead, Max Velmans, and Alva Noë are among them.[62]

In Rupert Sheldrake's words, some philosophers and neuroscientists (Alva Noë and Francisco Varela are among them) take "embodied" or "enactive" approach. Perceptions are enacted, or, in other words, "brought forth" as a result of the interactions between a person and her or his environment.

Minds are extended not only in space, but also in time. According to Rupert Sheldrake, a person is connected to the past by means of memory and habit; and to the future by means of intentions, desires, and plans. From a materialistic point of view, a person's memory, intention etc have to be in the brain in the present.[63]

From a materialistic point of view, memories have to be stored as material traces in the brain. Rupert Sheldrake is confident that memories are not stored as material traces.

It has been mentioned that several ancient philosophers, most vividly Plotinus, were skeptical about memories as material impressions. More recent philosophers, notably Henri

[60] The system of fields is introduced in systems philosophy; see Chapter 5: Ervin Laszlo's Advent of Integral Quantum Science
[61] S. Lehar, Gestalt isomorphism and the primacy of subjective conscious experience. Behavioral and Brain Sciences, 26, p. 375-444.
[62] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012, p. 219-221.
[63] Ibid., p. 226

Bergson and Alfred North Whitehead, mentioned memories to have direct connections through the time.[64]

There were intensive, expensive researches in order to find out memory traces in the brain. All of them have failed. On another hand, Rupert Sheldrake argues that memories may depend upon "morphic resonance from an organism's own past". The brain is compared to a TV set, and what a person sees on TV depends upon "the resonant tuning of the set to invisible fields".[65]

Rupert Shedrake's conception of extended mind is based on David Bohm's model of holographic universe and "implicate order".[66] According to David Bohm, each moment will "contain a projection of the re-injection of the previous moments, which is a kind of memory; so that would result in a general replication of past forms". [67] Morphic resonance or memory in the implicate order, in Rupert Sheldrake's words, fits the facts better than the material trace theory.

The resonance theory of memory, in Rupert Sheldrake's words, explains some religious questions. The majority of religions confirm that some aspects of a person remain after the person's death. Some memories are carried from one life to another one in Hinduism and Buddhism. It is the action of karma: actions give effects in the future. A survival of memory is also stated in Christianity.[68] By contrast with religions, the materialist theory is too naïve and simple: memories are within the head, in the brain; the brain decays when a person dies; as a result all memories are removed for ever.[69]

Rupert Sheldrake points out, that memories do not decay at death; they continue existing by resonance. Memories contribute to the collective memory of the species.[70] Another question whether or not there is immaterial part of a person which could use these memories when a brain is absent; but this question is not disputed.

From a materialistic point of view, the future goals, intentions are inside brains. This statement is questionable. Rupert Sheldrake argues that they do not exist inside brains. Goals, intentions exist as possibilities, virtual futures which are not material.

Their analysis is based on the laws of quantum physics.[71] The wave function of possible states of a system exists as probabilities. When a particle interacts with a system, the wave function

[64] Ibid., p. 188
[65] Morphic resonance is described more in chapter five.
[66] David Bohm's 'implicate model' model has been described later in this chapter.
[67] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012, p. 199.
[68] The mentioned field of waves should be between 10^{-17} cm and 10^{-33} cm. Technologies and equipment allow measurement only to 10^{-16} cm. The space became quantum foam at 10^{-33} cm.
[69] Ibid., p. 210
[70] This idea is resonant with P.Teilhard de Chardin's idea of noosphere. See Chapter 5.
[71] Quantum physics as well as and consciousness, mind, and quantum physics are described in more details in Chapters 3 and 4.

collapses into one of possible outcomes.[72] But the wave function is not material; it exists as possibility.[73]

Conscious mental activity deals with possible actions. Our minds could eagerly accept possibilities that are outside our own experience. Minds choose one or more of the possibilities; their choices collapse possibilities into actions which are observable. The causation goes from the virtual future backwards in time.

Rupert Sheldrake has written:

> According to the hypothesis of morphic resonance, all self-organising systems, including protein molecules, Acetabularia cells, carrot plants, human embryos and flocks of birds, are shaped by memory from previous similar systems transmitted by morphic resonance and drawn towards attractors through chreodes. Their very being involves an invisible presence of both past and future. Minds are extended in time not because they are miraculously different from ordinary matter, but because they are self-organising systems.[74]

In Rupert Sheldrake's words, materialism is not convincing if a person usually takes his or her own experience into account. But its authority is great because of the set of beliefs and principles of established science. A lot of educated people have to adopt a materialistic position in scientific discourse; at the same time, they do not accept it in private life.

Thus minds are extended both in space and in time.[75] Extension in space includes both past and future.

1.8.2 Colin McGinns's Knowing and Willing Halves of Mind

Colin McGinn considers mind to have its two halves: "the knowing and willing halves of a mind" which operate in connection.

> What a creature knows informs its dispositions to act, and what a creature does affect what it knows. Thus perceiving a predator will prompt the will of an agent, and the resulting actions (fleeing etc.) will change what is perceived, which in turn will lead to appropriate action. There is evidently an interplay between the two halves of a mind; and this for a good reason.[76]

Therefore, according to Colin McGinn, mind has both cognitive and conative features. The world is the one, "to which our actions are directed, but it is also the object of contemplative

[72] It should be noted that a particle should have less sizes than known particles in quantum physics.
[73] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012, p. 227
[74] Ibid., p. 228
[75] I will show later that minds could be extended further in the quantum foam at the Planck scale, inside a Planckian black hole, and another universe.
[76] C. McGinn, The Character of Mind. An Introduction to Philosophy of Mind, Oxford University Press Inc., New York 1996, p. 118

thought." [77]In my opinion, willing half of a mind expresses the will which is the entity that empowers different actions.

1.8.3 Francisco Varela's, Evan Thompson's, and Eleanor Rosch's Embodied Mind

Francisco Varela, Evan Thompson, and Eleanor Rosch have introduced their concept about "embodied mind" in their book *"The Embodied Mind. Cognitive Science and Human Experience"*[78] They mentioned: "By embodied, we mean reflection in which body and mind have been brought together."[79] Their embodiment is based on the experience, mindfulness, and mind-body coordination.

Having used the term "embodied action", Francisco Varela, Evan Thompson, and Eleanor Rosch meant that cognition depends on the experiences which are received from a body with different sensorimotor capacities; and all these sensorimotor capacities are put firmly and deeply into more including biological and psychological context.

1.8.6 Andy Clark's Extended Mind

Philosopher Andy Clark has shared his ideas about "extended mind" in the book *"Being* There. P*utting Brain, Body, and World Together Again."*[80] Andy Clark tries to find out the answer where the mind stops and the rest of the world starts. He mentioned that "this boundary… looks to be rather more plastic than had previously been supposed – in many cases, selected extra-bodily resources constitute important parts of extended computational and cognitive processes."[81] The dichotomy between a person's mind and the rest of the world may be different for different people.

On Andy Clark's view, the world is far from being messy. The world provides the information and feedback and makes perception and learning possible. Mind is extended into the world in order to acquire some valuable important for further actions and intelligence, but this extension mostly deals with the extension to some parts of the body.

In my opinion, Andy Clark's view concerning extended mind it too narrow while comparing it with Rupert Sheldrake's conception of extended mind. It seems to be obsolete nowadays. The best way to show this fact is to carry out the practical experiment. Only the collision between

[77] Ibid., p. 120
[78] F.J. Varella, E. Thompson, E. Rosch, The Embodied Mind. Cognitive Science and Human Experience, Cambridge, Massachusets – London, England 1993.
[79] Ibid., p.27
[80] A. Clark, Being There. Putting Brain, Body, and World Together Again, A Bradford Book, The MIT Press, Cambridge, Massachusetts – London, England
The term "extended mind" was coined in the article "The Extended Mind" written by Andy Clark and David J. Chalmers.
[81] A. Clark, Being There. Putting Brain, Body, and World Together Again, A Bradford Book, The MIT Press, Cambridge, Massachusetts – London, England, p. 214

philosophical intuitions will show its narrowness to the holder of Andy Clark's conception of extended mind.[82]

1.8.7 Role of Mind Understood by Paola Zizzi

Paola Zizzi has summarized her idea about the role of mind based on the knowledge of astrophysics, theoretical physics, and mathematics.

> As we have seen, it is the attitude of a mind to place itself as an internal observer with respect to the quantum universe as a whole that allows it to acquire mathematical intuition, In other words, mathematical intuition is an interactive task between the mind and the universe, in some sense different from the understanding of physical laws, which includes all minds and black holes. Mathematical intuition is a private communication between our world and the whole universe. This sounds much like Platonism, but in our case the Platonic world of ideas is replaced by the physical universe.[83]

Paola Zizzi has clearly placed mind in its hierarchy between the consciousness and physical world. "The bridge between our consciousness and the physical world is given by the common language of our minds and the universe."[84] It has been stated that mind is an agent of interactions between the consciousness, the most essential part of a human being, and the world including the physical body.

1.9 Mind in Buddhism, Consciousness in Tibetan Buddhism

1.9.1 Mind in Buddhism

During the period of 2,500-year history, Buddhism has developed thorough and exact methods for studying mind and mental phenomena. In Buddhist practice, the experimental investigation of mind is of great importance. The peculiar attention has been paid to differentiate aspects of mind.

There are two main aspects of mind in Buddhism. The first one is the ordinary mind. It is the mind that "thinks, plots, desires, manipulates, that flares up in anger, that creates and indulges in waves of negative emotions and thoughts, that has to go and on asserting, validating, and

[82] See "Experimental Philosophy" in Chapter 4 for details.
[83] P. Zizzi, Consciousness and Logic in a Quantum-Computing Universe, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Berlin 2006, p.474
[84] Ibid., p.470

confirming its "existence" by fragmenting, conceptualizing, and solidifying experience".[85] This mind is under the influence of external events. The second aspect of mind is "the very nature of mind, its innermost essence, which is absolutely and always untouched by change or death".[86] This aspect of mind is hidden within the ordinary mind. Buddhists usually call it "buddha nature". Buddha has much deeper meaning that Gautama the Buddha. It means a person who has completely "awakened from ignorance and opened to his or her vast potential of wisdom".[87]

When Buddha attained enlightenment, he wanted to show other people the nature of mind. But he also saw how difficult it would be understand it for people. The ordinary mind has been compared with the mind enclosed within a vase. When a person becomes enlightened, it could be compared as if the vase has broken into pieces. The mind that is inside the vase goes outside it, it is everywhere.[88]

In my opinion, most probably, Gautama the Buddha did not have any dogmatism in his mind. Any dogmatism in mind reduces its activity.

1.9.2 B. Alan Wallace's Observation of the Space of Mind, Buddhist tradition

B. Alan Wallace has criticized the approach towards observation and research in a branch of consciousness and mind adapted by mainstream philosophy and neuroscience. This approach is based on the Cartesian deductive, rationalistic point of view that is the backgrounds of scientific materialists whose field of research is the physical aspect of consciousness. Observation of mental phenomena is neglected. If the Bacon approach to scientific enquiry with the emphasis on empirical induction had been followed and applied to the examination of subjective experience, it would have been possible to learn a lot about mind by means of mental phenomena observation.[89]

In B. Alan Wallace's words, philosophers have been discussing the process and results of introspection for centuries; but it seems they have not improved the abilities for observation of mental phenomena.

In Buddhist tradition, there is no any absolute separation between mind, as an instrument of observation and the phenomenon which is under observation by mind. This system of observation (excluding mind) is also known in quantum physics.[90]

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[85] S. Rinpoche, The Tibetan Book of Living and Dying, HarperCollins Publishers, Inc. 2002, p. 47
[86] Ibid., p. 47-48
[87] Ibid., p. 48
[88] Ibid., p. 49
[89] B. Allan Wallace, Hidden Dimensions: The Unification of Physics and Consciousness – Columbia University Press, New York, USA 2007, p. 41
[90] B. Allan Wallace, A Science of Consciousness: Buddhism (1), the Modern West (0), [in:] The Pacific World: Journal of the Institute of Buddhist Studies, Third Series, No. 4, Fall 2002, p. 15-32, [Online]. Available at http://alanwallace.org/Pacific%20World%20Essay.pdf , p. 13-16

The method of the observation of the space of mind has been practiced in Tibet for the period of more than a thousand years. The main idea of this method is to obtain the natural state of mind, its empty state. Practically, it has been described in the following way:

> …Imagine being wide awake as you are immersed in a perfect sensory deprivation tank so that you have no experience of any of the five senses, or even of your own body. Then imagine that all your thought processes and imagination are put on hold, so that you are vigilantly aware of nothing but your own experience of being conscious.[91]

According to B. Alan Wallace, this natural state of mind is permeated with a great amount of "creative energy". The analogy from quantum physics has been drawn where it is compared with zero-point energy. The normal mind, "enmeshed in a myriad of thoughts and emotions", could not observe the natural state of mind; the attention is directed towards senses and mental perception. Tibetans believe that the experience of empty state of mind gives insights into the birth and the process of the human mind evolution.

Completely different to the hypothesis that consciousness emerges from neuronal activity, the human mind, in Tibetan Buddhism, emerges from the experience of zero-point field. This hypothesis refuses to accept both Cartesian dualism and materialism. In B. Alan Wallace's words, the hypothesis of Tibetan Buddhism could be tested.

1.9.3 Consciousness in Tibetan Buddhism

Consciousness in Tibetan Buddhism becomes a clear conception when we consider it in the process of a person's dying. When a person understands that he or she is dying, he or she should try to transfer his or her consciousness from the body to the "appropriate part of the space" by means of mind. Other people often help him or her to carry out this task.[92] [93]

Venerable Khenchen Dalden Sherab Rinpoche has written:

> …When consciousness is leaving the body, touch the dying person on the top of their head, creating a little sensation around the crown chakra: even tug on some the hairs. This can make a big difference, because when the consciousness leaves the body of an ordinary individual, it will leave through any opening that is available. … Leaving through the central channel [from the Base Chakra to the Crown Chakra] is always best because it provides a very neutral trajectory, free of anger of

[91] Ibid., p.46
[92] S. Rinpoche, The Tibetan Book of Living and Dying, HarperCollins Publishers, Inc. 2002, part 2 - Dying
[93] The Tibetan Book of the Dead: the Great Book of Nature Liberation through Understanding in the Between, Viking Penguin, a member of Penguin Group (USA) Inc. 2006

attachment… To leave from the lower parts of the body increases the likelihood of rebirth in the lower realms.[94]

Transferring consciousness in Buddhism is called phowa. Phowa is also carried out when there is "the need for rebalancing by practicing on the Buddha Amitabha".[95] Every person could succeed in phowa.

Based on the described conceptions of mind and consciousness, clear difference between mind and consciousness is understandable in Tibetan Buddhism.

There is no any difference between one's mind and mind in general as well as one's consciousness and consciousness in general. Therefore, it may be true that mind of one person could be even in touch with consciousness of another person. Another thing is that it does not often occur; a human being's mind and consciousness are not developed comparing them with a post-human's mind and consciousness. The idea of telepathy typical for post-humans described in chapter 6 is grounded on these relations.

1.10 Criticism of Some Conceptions

Nearly no conception is suitable in order to describe consciousness and mind. Dualism, materialism, functionalism etc have a lot of drawbacks. Materialism has been strongly criticized in Rupert Sheldrake's conception of extended mind. Here is the criticism of dualism and reductionism.

1.10.1 Dualism Criticism

Mind-body dualism was criticized by a lot of scientists, philosophers, and thinkers. In my opinion, the most profound criticism was carried out by Werner Heisenberg.

Werner Heisenberg, a Nobel Prize winner in physics, in his book "Physics and Philosophy", highly criticized dualism including Cartesian division of mind and body.[96] He mentioned that Cartesian philosophy had differed a lot from the philosophy of the ancient Greek philosophers.

Werner Heisenberg stated that the difficulties of the divisions had been understood from the beginning of this process. Even animals were put on the side of "res extensa", together with machines. Similar things could be thought about people. Cartesian "Res cogitans" and "res extensa" appeared to be absolutely different.[97]

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[94] Venerable Khenchen Dalden Sherab Rinpoche, A Modern Commentary on Karma Lingpas Zhi-Khro: Teachings on the Peaceful and Wrathful Deities, [Online]. Available at http://www.turtlehill.org/khen/zhikhro.pdf , p. 40
[95] Ibid., p. 38
[96] W. Heinsenberg, Physics and Philosophy, Penguin Books 1990
[97] Ibid., p.23

The results of this strong division were one of the explanations of great difficulties in quantum theory understanding. Werner Heisenberg mentioned that a lot of famous scientists including Albert Einstein had problems in their understanding of quantum physics. "The partition has penetrated deeply into the human mind during the three centuries following Descartes and it will take a long time for it to be replaced by a really different toward the problem of reality".[98]

Henry P. Stapp has mentioned clearly about the results of such division:

> [The] picture of man led, during the eighteenth and nineteenth centuries, to an associated moral system. It was based on the principle that each of us, being nothing but a mechanical device, automatically pursues his calculated self-interests, as measured by a certain bodily physical property, which is experienced in the realm of thought as pleasure. This principle, which was in line with the commercial temper of the times, was fundamentally hedonistic, though, from the scientific viewpoint, realistic.[99]

Dualism has promoted the development of science. At the same time it accelerated the growth of people who are not satisfied with their life.

In my opinion, a lot of problems will be solved when people realize that mind an important role in their lives. Also a lot of new discoveries and inventions could be found out when it would be understood that matter and mind interact. Moreover, matter, mind, and consciousness interact.

1.10.2 Reductionism Criticism

As it was mentioned by philosopher Steven Horst, the middle of the twentieth century was a peak of reductionism in philosophy of mind. Reductionists think that mental phenomena supervene on physical facts; and they are reducible to physical facts too.

Steven Horst argues that non all mental phenomena could be reductively explained as well as there is no any evidence that mental phenomena supervene on physical facts. He has written: "To view mental phenomena as reducible and supervenient is simply to view the relationship between psychology and the natural sciences as being analogous to the relations thought to obtain between sciences like chemistry or biology and basic physics."[100]

In Steven Horst's words, scientists usually use reduction instead for whole explanation. The simple example from psychiatry has been taken into account. New serotonin drugs have been introduced in order to minimize depression. Such reduction will fail in a short period of time.[101]

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[98] Ibid., p. 44
[99] H. Stapp, Mind, Matter, and Quantum Mechanics, Springer-Verlag Berlin Heidelberg 1993, p.209
[100] S. Horst, Beyond Reduction: Philosophy of Mind and Post-Reductionist Philosophy of Science, Oxford University Press 2007, p. 23-24
[101] Ibid, p. 33

Firstly, depression could not be reductively explained by the mechanisms in the nervous system. Secondly, the phenomena of depression may not supervene on the brain and nervous system.

Biologist Ursula Goodenough and anthropologist Terrence W. Deacon have mentioned that on one hand, reductionism has produced impressive results in science, on another hand, it is artificial and false. According to them, "by starting from wholes and moving 'down' into parts, one is moving in the opposite direction from the way matters arise."[102]

In Ursula Goodenough's and Terrence W. Deacon's words, reductionism explanation how mind works is interesting, but it is not useful. Say, we do not know what it is "like to be a bat", but we know what it is like to be a human being. Reductionism does not explain a whole area of knowledge that is not material at all. [103]

1.10.2.1 Peter Russel's Reductionism Criticism and Consciousness

The reductionist conception towards the explanation of consciousness does not give any useful results. Peter Russel has written:

> The reductionist approach argues that consciousness can be explained in terms of neural events in the brain, and life in terms of organic chemistry. Taken to its logical conclusion, the argument ends up in a trap of its own making. Consciousness, it is said, is "nothing but" the cumulative effect of a complex interwoven web of ten billion nerve cells. A nerve cell is nothing but a huge conglomeration of macromolecules; a macromolecule is nothing but a few million atoms strung together; and an atom is nothing but a nucleus surrounded by a cloud of spinning electrons, which in turn are nothing but eigenvalues in a probability function called the wave function. What is "an eigenvalue in a probability function"? Nothing but a model created by the conscious processes of the human mind in an attempt to give meaning to certain experimental results in physics. The argument has come full circle, for is not the human mind and its many faculties, including creativity and a sense of meaning, nothing but the workings of a few billion brain cells?[104]

In Peter Russell's words, consciousness differs from a collection of cells. Instead of stating that consciousness is a by-product of brain activity, the view that consciousness is a natural part of life in potential hidden form should be taken. The potential for a new order is always present. There should be special conditions for their appearance.

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[102] U. Goodenough and T. Deacon, The Sacred Emergence of Nature, [in:] The Oxford Handbook of Religion and Science 2006, [Online]. Available at http://www.edtechpost.ca/readings/Ursula%20Goodenough-%20The%20Sacred%20Emergence%20of%20Nature.pdf , p. 855

[103] Ibid., p. 864

[104] P. Russel, The Global Brain Awakens: Our Next Evolutionary Leap, Global Brain Inc., USA 1995, p. 89-90

It is clear in order to understand things correctly the approach beyond any reduction should be carried out. Consciousness could be understood correctly if the approach without any reduction is taken.

1.11 Emergence

The conception of emergence should be differentiated from the issue of emergence of consciousness and mind from matter. The research is based on the conception of emergence, the way complex systems arise of a great variety of simple interactions. The opinion that consciousness or mind appeared as emergent features is not supported; it is criticized.

In systems philosophy, emergence is the way complex systems arise of a great variety of simple interactions. Emergence is central in the theories of integrative levels. The emergent property of a system is one that is not a property of any component of that system, but a feature of the system as a whole.

The term "emergent" was coined by philosopher George Henry Lewes. He wrote:

> The distinction … indicated between components and constituents, or between parts and elements, will be seen hereafter to have its importance. All quantitative relations are componental, all qualitative relations elemental. The combinations of the first issue in resultants, which may be analytically displayed, the combinations of the other issue in emergents, which cannot be seen in the elements, nor deduced from them. A number is seen to be the sum of its units, a direction of movement is seen to be the line which would be occupied by the body if each of the incident forces had successively acted on it during an infinitesimal time, but a chemical or vital product is a combination of elements which cannot be seen in the elements. It emerges from them as a new phenomenon.[105]

1.11.1 Ursula Goodenough's and Terrence W. Deacon's Emergence

Describing the concept of emergence, Ursula Goodenough and Terrence W. Deacon have used such terms as "the whole is greater than the sum of its parts", "something more from nothing but", or "something else from nothing but". The mentioned something else could take part in generating something new at a different level of organization.[106]

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[105] G. H. Lewes, Problems of Life and Mind, First Series, the Foundations of a Creed – London, Trubner and Co, Ludgate Hill 1874, p. 98

[106] U. Goodenough and T. Deacon, The Sacred Emergence of Nature, [in:] The Oxford Handbook of Religion and Science 2006, [Online]. Available at http://www.edtechpost.ca/readings/Ursula%20Goodenough-%20The%20Sacred%20Emergence%20of%20Nature.pdf , p. 854

According to Ursula Goodenough and Terrence W. Deacon, emergence does not only surround us in the non-living surroundings; it is the main dynamic of living organisms too. Life has a lot of additional features. One of the most important things is life may have appeared from non-life.

The conception of emergence concerning mind suggests that to "experience our experience without awareness of its underlying mechanism is exactly what we should expect from an emergent property".[107] But we do not need to interpret that as facts or signs of some transcendental world. This experience is a reflection of the way the process of emergency forms a new standard from the things of below levels.

1.11.2 Jason W. Brown's Emergence

Neurologist and philosopher Jason W. Brown has written:

> Emergence can be examined in the relation between part and whole where the whole is not explained as the causal effect of the action or interaction of the parts… Even if the constituent relations are included, e.g., binding properties, the whole … is still greater than the parts. Put differently, the properties of the whole cannot be explained by the individual and relational properties of the parts.[108]

In Jason W. Brown's words, wholes could not be recognized according to their constituents, and parts are also problematic. Constituents of a whole are themselves whole, and their further analysis could be carried out. As an example, an atom is a constituent of a molecule, but an atom is a whole towards its subatomic structure. Further, a nucleus could be analyzed. The whole to part analysis is without any limits.

Concerning mind, there are whole-part transitions. Mind is a constituent of nature and has the natural properties.[109]

According to Jason W. Brown, in systems theory, emergence could explain the appearance of more complex organizations from simple ones. More complex organizations involve a qualitative shift which is not available by means of an extension of the prior state. As an example, it could be a shift from the individual behaviour to the social one. The shift includes the properties of the former state in emergent one, though the emergent state becomes qualitatively unique.

The conception of emergence has been of great importance in the thesis, because it explains the appearance of new properties of people, such as the emergence of cosmic consciousness. In fact, when only some elements of cosmic consciousness appear, the mind of a person begins its radical

[107] Ibid., p. 864
[108] Brown J., Time, Will, and Mental Process, Plenum Press, New York and London 1996, p. 74
[109] Ibid., p. 219

transformation. All these lead to the appearance more and more elements of cosmic consciousness which lead the phenomenon of time dilation. As a result, a body of the person will age slower while comparing it with bodies of other people. Also, the radical changes of the person's consciousness and mind promote healing of the person. Finally, when cosmic consciousness has been acquired fully, the person body will not age anymore. The interactions of the body's consciousness, mind, and body have been realized completely.

1.12 Panpsychism

1.12.1 Introductory Notes[110]

The research is based on the conception of panpsychism. Panpsychism is the conception that "all things have a mind or mind-like quality"[111]. In my opinion, mind-like quality also includes consciousness. Therefore, this definition may be rewritten in the following way. Panpsychism is the conception that all things have a mind, mind-like quality, or consciousness.

Panpsychism is one of the oldest philosophical conceptions, and could be ascribed to such philosophers as Plato, Baruch Spinoza, Gottfried Leibniz and William James. This view can also be seen in eastern religions and philosophies of Buddhism and Hinduism. Panpsychism has come back as an important conception in contemporary philosophy of mind. David Ray Griffin, David Skrbina, Galen Strawson, Freya Mathews are among important defenders of panpsychism.

David Skrbina is not sure if the term "consciousness" could be taken while describing panpsychism. The problem is he understands consciousness as a "highly anthroponcentric, and its meaning is too closely associated with specifically human mental states to serve as general attribute of reality".[112] In fact, conceptions of consciousness, provided by me, give all the grounds to consider consciousness to be more important than mind in the panpsychism view.

The word "panpsychism" was coined by philosopher Francesco Patrizi in the sixteenth century. It derives from Greek words "pan" that has the meaning of "all", and "psyche" that has the meaning of "soul" or "mind".

The conception of panpsychism includes minds and consciousness of human beings as well as mind-like and/or consciousness qualities of non-humans. I think it could be minds and consciousness of beings more sophisticated than human beings such post-humans (in the case they exist). Panpsychism also takes into account minds and consciousness of non-human animals, plants,

[110] Panpsychism written out here is based on the article "Panpsychism" worked out by David Skrbina, http://www.iep.utm.edu/panpsych/
[111] D. Skrbina, Panpsychism, Internet Encyclopedia of Philosophy, [Online]. Available at http://www.iep.utm.edu/panpsych/
[112] D. Skrbina, Panpsychism in the West, A Bradford Book, Cambridge Massachusetts 2005, p. 16-17

substances etc, but it should be mentioned that their qualities like consciousness and mind are much less sophisticated if compared to human beings.

Some panpsychists including Peter Russel considers the Earth to be a living system much more complex than people. It is also my point of view: it is too naïve to believe that human beings are the most developed.

1.12.2 Approaches in Panpsychism

David Skrbina has noticed at least six appoaches in panpsychism. They are the following.

1. The process philosophy approach, as understood by Henri Bergson and Alfred North Whitehead, and later developed by Charles Hartshorne, David Ray Griffin etc.
2. The quantum physics view, as understood by David Bohm, Stuart Hameroff, Roger Penrose etc.
3. The information theory view, developed from the research carried out by Gregory Bateson, John Archibald Wheeler, David Bohm, and David Chalmers.
4. The part-whole hierarchy approach, as envisaged by Gerolamo Cardano, and worked out by Arthur Koestler, and Ken Wilber.
5. The non-linear dynamics view, developed by Charles Sanders Peirce and later by David Skrbina.
6. The physicalism approach, developed by Galen Strawson.[113]

1.12.3 Timothy Sprigge's Consciousness in Panpsychism

Consciousness in panpsychism has been described by philosopher Timothy Sprigge in the article "Panpsychism".[114]

According to Timothy Sprigge, there could be countless interactive centers of consciousness. They are inner beings of physical centres of nature. The possible influences between the centres of consciousness and physical centres of nature could be immediately or through some agent's relations connected by some lines. Timothy Sprigge wrote:

> … The geometry of these lines is more or less adequately represented by what we conceive of as their spatial or spatiotemporal relations (or those of complexes including them), while a description of any particular physical is thus a purely structural account – supplemented by an indication of how it is liable to affect our own perceptual experiences – of the way in which these possible influences have become actual.[115]

[113] Ibid.
[114] T. Sprigge, Panpsychism, [in:] Rouledge Encyclopedia of Philosophy, Routledge, London and New York 1998
[115] Ibid.

Consciousness of people fit into the scheme of interactive centres of consciousness. The centres of consciousness interact with so-called "lower-level" centres of consciousness that constitute their bodies.

1.12.4 The Importance of Panpsychism

David Skrbina has emphasized the importance of an investigation of panpsychism. The main reasons of its importance are the following.

- Panpsychism has a unique place in philosophy. Panpsychism is both ontology and meta-theory of mind. It connects being and mind in its peculiar way.
- Panpsychism is important from philosophical point f view; it provides resolution to mind-body problem, the one that dualism and materialism find very difficult to solve. At present day materialist theories dominate in philosophy of mind. Materialism and its derivative theories are not able to deal with questions of consciousness, role of mind etc.
- Panpsychism has valuable ethical consequences. It states that both human and non-human have the important quality of being enminded or mindful. Having this shared quality, we could know the universe more privately and friendly and feel ourselves at home in it. Consequently, this could be the source for compassion and ecological values and looking for new ways of acting towards nature.
- Panpsychism makes the nature of mechanistic philosophy clearly visible. Present thinking is embedded deeply into a mechanistic view that originated from Thomas Hobbes, Rene Descartes, and Isaac Newton. It is the view that the cosmos is a place of dead matter driven by mechanical forces. Consciousness and mind of a person are unexplainable. Panpsychism has always been opposite to the mechanistic view.
- Panpsychism seems to be the most undeveloped philosophical meta-theory in Western philosophy; its detailed analysis should be carried out. Materialistic philosophy has been influential for the period of more than a hundred years. The systematic study of panpsychism was carried out the last time only in the nineteenth century. Some recent research dealt with panpsychism, but it was limited and from a specific philosophical way of thinking.[116] The complete study has been missing.[117]

1.13 Mindfulness

[116] The example of such thinking is process philosophy.
[117] D. Skrbina, Panpsychism in the West, A Bradford Book, Cambridge Massachusetts 2005, p. 4

The research is based on the concept of mindfulness too. Mindfulness had its origin in Buddhism, later it spread and appeared to be in contemporary psychology and psychotherapy, as well as in enactive cognitive science.

1.13.1 Mindfulness and Buddhism

> The term of mindfulness is synonymous with awareness. Mindfulness meditation can be defined as the effort to intentionally pay attention, nonjudgmentally, to presentmoment experience and sustain this attention over time. The aim is to cultivate a stable and nonreactive present moment awareness. This is usually accomplished through a regular daily discipline involving both formal and informal mindfulness practices.[118]

F.J. Varella, E. Thompson, E. Rosch in their book *"The Embodied Mind. Cognitive Science and Human Experience"* posit:

> The description of mindfulness/awareness meditation that follows is based on the writings and oral presentations of traditional teachers and on observations, interviews, and discussions with present-day students of Buddhism from the major Buddhist traditions.[119]

Mindfulness is usually trained by means of meditation.

The main aim of the mindfulness meditation is to become mindful. It means "to experience what one's mind is doing as it does it, to be present with one's mind."[120] Ethical component is important one of mindfulness. "The Buddhist concept of mindfulness… has a strong ethical component, and its primary characteristics are unwavering, penetrating, discerning attentiveness to the object under examination."[121]

1.13.2 Mindfulness and Psychotherapy

Mindfulness is an important constituent of modern clinical psychology and psychotherapy. Mindfulness techniques are helpful in preventing and treating melancholy and depression. They are also helpful in preventing and treating other psychic and non-psychic diseases.

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[118] J.Miller, K. Flether, J. Kabat-Zinn, Tree-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxietydisorders. General Hospital Psychiatry, 17(3), 1995 year, 192–200, p. 1993

[119] F.J. Varella, E. Thompson, E. Rosch, The Embodied Mind. Cognitive Science and Human Experience, Cambridge, Massachusets – London, England 1993, p. 24

[120] Ibid., p. 23

[121] B. Allan Wallace, Hidden Dimensions. The Unification of Physics and Consciousness – Columbia University Press, New York, USA 2007, p. 89

Mindfulness became the base of such therapies as mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT).[122]

1.13.3 Mindfulness and Cognition

Mindfulness could be trained. People might speak about their mindfulness when they think and feel as their mind exists not only in the brain, but also outside it, in some parts of the universe. In this context, mindfulness is similar to the extended mind hypothesis.

Mindfulness and cognition have their important roles in understanding everyday experience. "Our cognition is directed toward the world in a certain way: it is directed toward the world as we experience it."[123] Not every person perceives the world to be three-dimensional; I think it is possible to perceive it to be at least four-dimensional including time. Mindfulness is an important component of enactive cognitive science. "Mindfulness techniques are designed to lead the mind back from its theories and preoccupations, back from the abstract attitude, to the situation of one's experience itself."[124] If my mind is not able to understand and feel it, I can not believe that this theory is true and could be used as a base of science or philosophy. Intuition and practical experience are the important elements of cognition. I share Henri Bergson's point of view that experience and intuition are more important than rationalism and science in understanding our reality.

Mindfulness has its important role in understanding the phenomenon of mind and consciousness. F.J. Varella, E. Thompson, E. Rosch wrote: "Our cognition… seems to be directed toward the world in a way that intimately involves consciousness."[125] Thus it is not possible to understand the world without our mind and consciousness. At the same time, I clearly differentiate cognition by means of mind and by means of consciousness. If we perceive the thing by means of not only mind, but also consciousness, we feel like we have out-of-body experience, the experience to be described later.

1.14 Will and Love as Aspects of Mind

Will and love could be considered as aspects of mind. Some people consider love to be the feeling only. I would argue that it is possible to understand love when mind is developed. And only

[122] A. Kokoszka, States of Consciousness: Models for Psychology and Psychotherapy, Springer Science+Business Media, LLC, 2007, p. 34-35
[123] F.J. Varella, E. Thompson, E. Rosch, The Embodied Mind. Cognitive Science and Human Experience, Cambridge, Massachusets – London, England 1993, p.52
[124] Ibid., p.22
[125] Ibid., p.52

then it will be evident that love as aspect of mind is of greater importance than love as the feeling only.

1.14.1 Will

The Blackwell Dictionary of Western Philosophy renders the word "will" as "the human ability to desire something, to choose and decide courses of action and to initiate actions according to one's choice or decision. The will is a wish that we believe we are capable of realizing through effort. The act of will, or volition, contains both cognitive and conative elements."[126]

"Will" constitutes the important aspect of mind. Neurophysiologist and philosopher Paul Chauchard wrote in the article "Will and Celebral Control" about will: "The will appears as the cerebral control of the self which demands not that we should put ourselves into a state of tension, but, on the contrary, into that optimum of harmonious and available vigilance based on calm and inner peace."[127]

Paul Chauchard mentioned that the will as the peculiarity of human mind is no longer in the branch of behaviourist psychology. It is in the branch of me neurophysiology, but "the will" does not occupy its important role that it should occupy.[128]

> I shall successively envisage the neurophysiology of the will as optimal vigilance, presence in the body, good conditioning, control of imagination and desire. The true will, harmony and measure has the face of beauty and love. The secret of the will is not Descartes' "I think therefore I exist", but I feel, I act consciously, I imagine, I desire, therefore I exist, the important part being the "I" in the true psychosomatic reality, to will rightly to become more human, more normal, more adult and more civilized.[129]

1.14.1.1 Roberto Assagioli's Will

Psychiatrist Roberto Assagioli mentioned in his book *"The Act of Will"* that the task of a person should be a training of the will. The will of the person should be fully developed.

He asserted that qualities of the will are:

1. Energy – dynamic power – intensity
2. Mastery – control – discipline
3. Concentration – one-pointedness – attention – focus
4. Determination – decisiveness – resoluteness – promptness

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[126] The Blackwell Dictionary of Western Philosophy, Online, Edited by: N. Bunnin and J. Yu, [Online]. Available at http://www.blackwellreference.com/public/tocnode?id=g9781405106795_chunk_g978140510679524_ss2-15#citation

[127] P. Chauchard, Will and Cerebral Control, [in:] Science and Consciousness. Two Views of the Universe, ed. M. Cazenave, Pergamon Press 1984, p.133

[128] Neuroscience only appeared at this time.

[129] Ibid., p. 135

5. Persistence – endurance – patience

6. Initiative – courage – daring

7. Organization – integration – synthesis[130]

He divided the will of a person into such aspects as the strong will, skillful will, good will, the transpersonal will as well as joyous will.

1.14.1.2 Jason W. Brown's Will

Jason W. Brown states that the instinctual will is the engine of the deep self. The deep self encloses the instinctual self. The will could be considered as the dynamic aspect.[131] Jason W. Brown has written: "The primitive will is the first actuality of mental process, the instinct to survive that is the unconscious urge to subjectivity."[132] The primitive will develops into some instincts and strong natural needs and desires.

The primitive will is "an endogenous capacity suppressed by rational thought". In Jason W. Brown's words, failure to pay proper attention to endogenous in mental process causes a lot of mistakes to happen that come from wrong assumptions that are based on everyday experience, such as the opposition of will and reason.[133]

The will is an entity that empowers an action. It is an attribute of some actions. The will could be interpreted as an impulse that promotes a willed action.

1.14.2 Love

People understand the word "love" in different ways. The Blackwell Dictionary of Western Philosophy renders the word "love" in the following way.

> …In the history of Western philosophy, love has been treated in various ways under different names, such as eros, philia, agape (universal benevolence), Romantic love, Sacred love (the love of God), comradeship, sympathy, care, and concern. Plato in his Symposium and Phaedrus argued that love (eros) begins with a desire for personal beauty, but its spiritual ascent culminates in a desire for beauty in itself, that is, the love of wisdom, which is philosophy in its original sense. Spiritual and divine love, which has been a major philosophical theme from the Neoplatonists to Augustine and Dante , still inspires many writers. Aristotle held that true love (philia , friendship) between virtuous

[130] Assagioli R., The Act of Will, Penguin Books 1974, p. 18
[131] Brown J., Time, Will, and Mental Process, Plenum Press, New York and London 1996, p. 74
[132] Ibid., p. 78
[133] Ibid., p. 86-87

people enables one to look after another for the other person's sake. In the final analysis, however, he considered true love to be a form of self-love that is obedient to one's rational voice.[134]

In my thesis, the word "love" is taken in the meaning of Christian love.[135]

The virtue of love—while defined in various ways—has regularly been understood as integral to the Christian life. Jesus summarizes the law in terms of the twofold command to love God and the neighbour (Mark 12: 28–31). St Paul's statement, 'he who loves his neighbour has fulfilled the law' (Rom. 13: 8) is more compressed still. St Augustine, in chapter 15 of his On the Morals of the Catholic Church , defines the cardinal virtues (temperance, fortitude, justice and prudence) as forms of love.[136]

From the point of neurophysiology and neuroscience: "To love one's neighbours as oneself thus appears as a social value of cerebral hygiene."[137]

Philosopher P. Teilhard de Chardin stated: "Christian love is incomprehensible to those who have not experienced it. That the infinite and the intangible can be lovable, or that human heart can beat with genuine charity for a fellow-being, seems impossible to many people I know – in fact almost monstrous"[138] He mentioned a lot of mystics in the last twenty centuries who dedicated their lives to the development of Christian love. They did not waste their lives while doing this. All these have remained.[139]

It seems there are a lot of common features while comparing mindfulness in Buddhism and Christian love, but I have not found any information that comparative analysis has been carried out.[140] Common features include the following: both mindfulness and Christian love are aspects of mind; they stand for the warm-hearted attitude towards people both in mind and actions. Mindfulness embraces the attitude not only towards people, but all nature in general.

1.14.3 Roberto Assagioli's Will and Love, Joyous Will

Roberto Assagioli mentioned about different aspects of relationships between the will and love. Will and love are often present in inverse proportions in people:

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[134] The Blackwell Dictionary of Western Philosophy, Edited by: N. Bunnin and J. Yu, [Online]. Available at http://www.blackwellreference.com/public/tocnode?id=g9781405106795_chunk_g978140510679513_ss1-122

[135] It deals with the experiment in consciousness that is described later.

[136] The Blackwell Encyclopedia of Modern Christian Thought, [Online]. Available at http://www.blackwellreference.com/public/tocnode?id=g9780631198963_chunk_g978063119896314_ss17-1

[137] P. Chauchard, Will and Cerebral Control, [in:] Science and Consciousness. Two Views of the Universe, ed. M. Cazenave, Pergamon Press 1984, p. 144

[138] [138] P. Teilhard de Chardin, The Phenomenon of Man, Collins Fontana Books 1965, [Online]. Available at http://ebookbrowse.com/the-phenomenon-of-man-pierre-teilhard-de-chardin-pdf-d275169311, pp. 325-326

[139] See the idea of noosphere in Chapter 5.

[140] I am not sure if it possible to carry out this analysis.

> That is to say, those in whom love is predominant tend to possess less will and are little inclined to use what they have, while those endowed with a strong will often lack or even exhibit its contrary. But this personal imbalance between love and will can be further accentuated by the essential differences of the quality, nature, and direction of the two aspects themselves. Love, being attractive, magnetic, and outgoing, tends to link and unite. Will, on the other hand, being "dynamic", tends by itself to be affirmative, separative, and domineering; it tends to establish a relationship of dependence. And clearly, these differences can lead to real opposition.[141]

Roberto Assagioli introduced the term "joyous will". He stated: "The good will is joyous! It creates a harmonious, joyful atmosphere, and acts of good will have rich and sometimes amazing results."[142]

The task of a person is to develop these two aspects of mind in order to have them fully developed and in unity. It has been clearly mentioned about the importance of having fully developed will and love.[143] The gradual and complete fusion of will and love should give its synergetic results.

1.15 Personal Identity

Some questions may arise in the thesis concerning the personal identity. They involve the problems of what is a person and what is for a person to exist through time.

1.15.1 Brian Garret's Problems of Personal Identity

Concerning the problem of what is a person, philosopher Brian Garret has mentioned that a person is the self-conscious mental being. Self-consciousness, in Brian Garret's words, distinguishes people from other beings, such as cats.[144] In addition, there are some ethical and social components to be a person. Person is free, rational and moral agent. He or she lives a live that depends upon interactions with other people.

The question what is a person could be answered in a materialistic way and immaterialist one. There are different versions about a materialistic personal identity. The common thing of the mentioned versions is the rejection of the point of view that a person has any immaterial parts. Brian Garret has pointed out three main versions of materialistic personal identity. According to the animalist theory, a person is identical to an animal.[145] According to the body theory, a person is

[141] Assagioli R., The Act of Will, Penguin Books 1974, p. 95
[142] Ibid., p. 200
[143] Fully developed will and love are necessary conditions in order to carry out the experiment in consciousness described in Chapter 4.
[144] B. Garret, Personal Identity and Self- Consciousness, Routledge, London and New York 1998, p.5
[145] Animal is used in the meaning of a living creature including people.

identical to his or her body. And according to the brain theory, a person is identical to the physical location of his or her mental life which is in the brain and central nervous system. The identity of a person over time means the continued existence of the biological object, such as an animal, body, or brain.

The only view of an immaterialist personal identity considered by Brian Garret is the dualist view. This is the view of Plato, Descartes, and Christian tradition, though not all. A person has an immaterial soul. The soul interacts with the body in some way. The soul is the place of a person's mental life. The identity of a person over time means the continued existence of the immaterial soul.[146]

There is also psychological theory which represents both materialistic and immaterialist points of views. Brian Garret has written:

> On this psychological theory, what is crucial to a person's survival is the survival of the mental life or stream of consciousness (beliefs, memories, character, sense of humour, desires, long-term plans, etc.), and this stream can continue even after the body and brain have been replaced with a new (for example, bionic) body and brain.[147]

The identity of a person over time could be understood in terms of psychological continuity.

1.15.2 Understanding of Personal Identity

Considering personal identity, we should take into account a person's consciousness, mind, and body. Consciousness is considered to be the most essential part of a person. Mind is an agent of interactions between the person's consciousness on one side, body and environment on another side.

A person has both material and immaterial parts. Consciousness and mind are immaterial constituents.

In order to understand what is for a person to exist through time, let us carry out the thought experiment.[148] Two people, X. and Y., decided to exchange their consciousness. This process was carried out by means of mind. Before carrying out the experiment, the person X. had consciousness X(c), mind X(m), and body X(b); the person Y. had consciousness Y(c), mind Y(m), and body Y(b). Just after having carried out the experiment, the person X had consciousness X(c), mind X(m), body Y(b), the person Y had consciousness Y(c), mind Y(m), body X(b). Consciousness is the most essential part of a person; therefore the personal identity is recognized according to

[146] B. Garret, Personal Identity and Self- Consciousness, Routledge, London and New York 1998, p. 6-12
[147] Ibid., p. 11
[148] The experiment is a constituent part of Tibetan Buddhism traditions.

consciousness. Minds of the people will be "reconstructed" a lot, as far as they occupy the new bodies now.

Let us suppose that the person X. is 30 years old, the person Y. is 60 years old. After having exchanged consciousness, the person Y. appeared to be in the former body of the person X. If the person Y. does not change his or her mind and consciousness in a radical way, his or her new body will become 30 years older in a short period of time. If the person X. has not changed his or her mind that he or she is 60 years old, his or her new body will remain the same and it "will become older with age". If the person X has not changed his or her mind that he or she is 30 years old, his or her new body "will not become older with age". Probably it "will become younger with age".

Just after the physical death the personal identity of a person does not include a body any more. There are no any grounds to think that it does not include the person's consciousness. Also there are no any grounds to think that it does not include the person's mind. A lot of religions state that at least part of a person's consciousness remains after the physical death. Folk traditions are the essential part of the people beliefs about immortality of consciousness.

Also different cases and practices of the altered states of consciousness, such as near-death experiences and out-of-body experiences, give some more arguments in order to show that consciousness may exist without a physical body.

The question if consciousness exists after the physical death seems to be cognitively closed for us. At least it is cognitively closed for us at present moment. But it may be revealed in the future, at the end of this century.

1.16 Consciousness, Mind, and Body Unity

1.16.1 Francisco Varela's, Evan Thompson's, and Eleanor Rosch's Mind and Body Unity

Francisco Varela, Evan Thompson, and Eleanor Rosch mentioned that mind and body could be united and fully coordinated by means of habits developing. The result will be known not only for the person, but also to other people. Mindfulness plays an important role in mind and body bringing together. [149]

Francisco Varela, Evan Thompson, and Eleanor Rosch stated that "mind-body relation or modality is not simply fixed and given but can be fundamentally changed."[150] According to them, present day Western philosophy does not deny this fact. Western philosophy ignores this fact. The ideas about mind and body unity were progressive at the end of the twentieth century. They still remain to be progressive.

[149] F.J. Varella, E. Thompson, E. Rosch, The Embodied Mind. Cognitive Science and Human Experience, Cambridge, Massachusets – London, England 1993, p.28
[150] Ibid., p. 28

1.16.2 Principle of Complementarity Derived from Quantum Physics

Niels Bohr, a Nobel Prize winner in physics, proved that the wave and matter aspects of a particle complement each other. It depends upon the observation whether one or another aspect appears.

Philosopher Ervin Laszlo speculates that a similar principle explains the mental and physical properties of the universe. According to him, complementarity means if the mental or physical aspect appears for an observer depends upon the point of view of the observer. He has stated:

> In the perspective of the external observer, it is the physical aspect that emerges: even the brain of the observer, seen from the "outside", is a system of neurons embedded in gray matter. In the perspective of introspection, on the other hand, it is the mental aspect that appears: not only the observer herself, but the widest reaches of the cosmos are experienced as elements of consciousness, only interpreted as elements of physical reality.[151]

In Ervin Laszlo's words, physical health needs the integrated functioning of mind and body. Mental health requires coherence between a person and his or her social and ecological environment.[152]

1.16.3 David Bohm's Mind and Body Interactions

David Bohm emphasized in his research about connection between mind and body. He wrote: "In the view that I have been proposing, the mental and the material are two sides of one overall process that are (like form and content) separated only in thought and not in actuality."[153] He mentioned about the energy that is the base of connection.

David Bohm explained this interaction by means of the information at the level of quantum field. According to him:

> The particles constituting matter in general may be considered to represent a more gross (explicate) somatic level of activity, while the Schrodinger wave field corresponds to a finer, subtler, more implicate and 'mind-like' level. In human experience however, it has been proposed that each 'mind-

[151] E. Laszlo, The Connectivity Hypothesis, Foundations of an Integral Science of Quantum, Cosmos, Life, and Consciousness, State University of New York Press 2003, p. 112.
[152] In my opinion, Ervin Laszlo has forgotten about consciousness. Therefore, physical health needs the integrated functioning of consciousness, mind, and body.
[153] D. Bohm, Meaning and Information, p. 5, [Online]. Available at http://www.implicity.org/Downloads/Bohm_meaning+information.pdf

like' level can be regarded as a somatic bearer of form when seen from a yet finer and more subtle level.[154]

David Bohm wrote that psychosomatic connection of the mind and body implied only their interactions. In order to show their connection, he proposed his "implicate order" model. According to that model, "… mind enfolds matter in general, and therefore the body in general. Similarly, the body enfolds not only the mind, but also, in some sense, the entire material universe."[155]

The "implicate order" model is based on the following principles of theory of quantum physics. The quantum theory implies all material systems have a wave-particle duality. All actions are in the forms of units of energy, called quanta that could not be divided further. Particles are at great distances from each other affect each other by no known means of their interactions.[156]

In David Bohm's words, the main feature of the idea of the implicate order is the whole universe is enfolded in everything in some way, and, on another hand, everything enfolds everything in some way, but with a great deal of relative independence. The basic idea is the enfoldment relationship is active.

According to David Bohm, a kind of information exists in nature which is physical and mental at the same time. This active information is a link between two sides of reality which are inseparable. The deeper reality is beyond mind and matter, two aspects that should be investigated further.[157]

Philosopher Paavo Pylkkänen who knew and worked together with David Bohm has summarized his ideas about mind and matter:

In general terms, he [David Bohm] saw mind and matter as two aspects of or ways of looking at an underlying reality, which is movement. This is a type of viewpoint that has roots in Aristotle and Spinoza and more recently in Russel, and is variously labelled "aspect monism" or "neutral monism" in philosophy. Of course, Bohm's emphasis on the fundamental status of movement connects him with the tradition of "process philosophy', from Heraclitus to Whitehead. Aristotle's philosophy involves a dual aspect ontology and takes the notion of process as fairly fundamental. There is thus a particularly interesting similarity between Aristotle's and Bohm's views…[158]

[154] Ibid., p. 9
[155] D. Bohm, The Enfolding-Unfolding Universe and Consciousness, [in:] Science and Consciousness. Two Views of the Universe, ed. by Michel Cazenave, Pergamon Press 1984, p. 84
[156] See Bell's Theorem in Chapter 3.
[157] D. Bohm, A New Theory of the Relationship of Mind and Matter, Philosophical Psychology, 3:2, p. 271-286
[158] P. Pylkkänen, Mind, Matter and the Implicate Order, Springer 2007, p. 37-38

David Bohm carried out the vast research having explained mind and body interactions. At the same time I have not found any signs that he has done any research in consciousness, mind, and body interactions.[159]

1.16.4 Understanding of Consciousness, Mind, and Body Unity

Consciousness and mind may be clearly differentiated during near-death, out-of-body, and mystical experiences.[160] Their unity is also understood during the mentioned experiences. Practical experiments give the most vivid understanding of consciousness, mind, and body. The practice of phowa in Tibetan Buddhism understood theoretically and carried out practically is helpful in order to understand consciousness, mind, and body properly.

Consciousness is the most essential part of a person; mind is the only agent capable to direct the stream of consciousness. Mind is the agent of interactions between the person's consciousness, body and the environment. Consciousness and mind are waves that could not be registered by any known equipment.

Mind and body unity will be understood better if we take consciousness into consideration. It seems, the person's mind, first of all, has its influence on the consciousness, and only then the person's consciousness has its influence on the body. A lot of efforts should be carried out by the person's mind in order to influence the consciousness, and some time should pass before the unity of the person's consciousness, mind, and body will be achieved, as well as their common interactions with the environment.

It seems mind in some cases has the ability to influence the body even without the intermediary of consciousness. This influence could be clear if a person tries to concentrate only by means of mind at some specific zones of their body, and the concentration should be carried out on the tiny zones of the body, for example at the end of the tongue or the end of the nose.

The first described concentration is carried on the tip of the tongue. A person should concentrate at its end not less than 15 minutes a day. The concentration is done exclusively by means of mind without any known senses such as sight, hearing, smell, taste, and touch. The visualization of the tip should be minimized practically to its very small amount, nearly to the point. In a few weeks depending upon the intensity of the trainings the person may feel the constant vibration at the tip of his tongue. This vibration will later spread to all the mouth. Sometimes the person will feel the wonderful taste not compared with something else.

The second described concentration is carried on the tip of the nose. A person should also concentrate on its end not less than 15 minutes a day. In this case, act of gaze could be added to the work of mind. The visualization of the tip of the nose should be minimized to the minimum

[159] Consciousness is understand here according to the conceptions described in the thesis.
[160] All mentioned experiences are described later.

possible area. In a few weeks the person may have the constant sensation spread to all nasal cavity. Later the person will feel wonderful fragrance not compared with another fragrance.[161]

Mind should be developed in a proper way in order to influence consciousness, or body. Even in the case of fully developed mind such as Gautama the Buddha's mind, its direct influence on body may be so tiny that could not be easily registered or proved. Only a long period of time of the sustained influence may show some vivid results.

1.17 Brief Conclusions

There exist different conceptions of consciousness and mind. The main attention has been paid to the description of conceptions which, in my opinion, correspond to reality. There are several grounds for stating it. Firstly, it is clear that consciousness and mind could be clearly differentiated. Secondly, consciousness, mind, and body should interact among each other. Thirdly, they should be shown to be in unity.

No any science, philosophy, or religion could state it knows about consciousness, mind, body and their interactions. The best method of showing that a conception is true is practical experimentation. Some practical experiments concerning consciousness, mind, and body differentiation and being in unity has been shown.

[161] The described concentration is from Buddhist traditions.

Chapter 2

Altered States of Consciousness, Evolution of Consciousness, and Cognition

2.1 Definition of Altered State of Consciousness

Nearly all cultures had altered states of consciousness. People valued them as a powerful means for the connection with God and other sacred realities, nature. They used the altered states of consciousness for healing and cognition. The states were used as important sources for intuition and perception. A lot of time was spent in order to develop different techniques for altering the states of consciousness and use them in practice.

Charles Tart coined the term "altered state of consciousness". Altered state of consciousness[162] is "a qualitative alteration in the overall pattern of mental functioning, such that the experience feels his consciousness is radically different from the way it functions ordinarily."[163] Strictly according to this definition, a person's consciousness should differ from the normal way of functioning.[164]

Psychologist William Farthing defines the altered state of consciousness as "a temporary change in the overall pattern of subjective experience, such that the individual believes that his or her mental functioning is distinctly different from certain general norms for his or her normal waking state of consciousness".[165] The weak side of this definition is that change in the pattern of subjective experience could be not only temporary. It could be permanent too.

Psychiatrist Arnold Ludwig defines the altered state(s) of consciousness as "any mental state(s) of consciousness, induced by various physiological, psychological, or pharmacological maneuvers or agents, which may be recognized subjectively by the individual himself (or by an objective observer of the individual) as representing a sufficient deviation in subjective experience or psychological functioning from certain general norms for that individual during alert waking consciousness. This sufficient deviation may be represented by greater preoccupation than usual with internal sensations or mental processes, changes in formal characteristics of thought, and impairment of reality testing to various degrees".[166]

Based on these definitions and the differentiation between consciousness and mind, I would define the altered state of consciousness as a qualitative alteration in the functioning of consciousness or/and mind such as the person knows or believes or/and other people observe that

[162] The shortening forms are ASC in singular, and ASCs in plural.
[163] C. Tart, States of Consciousness and State-Specific Sciences. Science 176, 1972 year, p. 1203
[164] If not strictly, other cases when only mind, not consciousness, differs from its normal way of functioning may be taken into account. These cases will not be described.
[165] G. W. Farthing, The Psychology of Consciousness, Englewood Cliffs, NJ, Prentice Hall 1992, p. 205
[166] A. Ludwig, Altered States of Consciousness, [in:] C. Tart, Altered States of Consciousness, p. 9-22, New York 1969, [Online]. Available at http://www.adolphus.nl/xcrpts/xcludwig.html

that his or her functioning of consciousness or/and mind varies greatly from the functioning of consciousness or/and mind of other people, or/and general norms of consciousness or/and mind functioning. This definition clearly states that the altered state of mind and altered state of consciousness do not coincide.

2.2 Ervin Laszlo's Analysis of Altered States of Consciousness

Systems theorist Ervin Laszlo has skillfully worked out the transition from the conception of consciousness to the altered states of consciousness.

It has been pointed out that meditation, prayer, rhythmic movements, and controlled breathing may cause altered states of consciousness which give the possibility to receive non-sensory information. While a person is in the altered state of consciousness, his or her brain most probably functions "in a mode in which information that does not fit the commonsense conception of the world is not repressed".[167]

Ervin Laszlo supposes that people in altered states of consciousness receive things which are not expressed by their ordinary senses. He has mentioned that the brain is dead in near-death experiences, but people could have clear experiences. Survivors can recall all things using a lot of details. People could "see" things from a point of space that is far away from their body in out-of-body experiences. People have the feeling of being in union with someone or something larger than themselves in mystical experiences. The consciousness of people becomes separated from physical brain in some of the mentioned experience, but the experiences are realistic and clear.[168]

The attitude of people towards altered states of consciousness has been strongly criticized:

> Parents tell their children not to imagine things, teachers insist that they should stop dreaming and be sensible, and peer groups, already brainwashed, laugh at the child who persists. As a result, modern youngsters grow up to be commonsense individuals for whom everything that does not accord with the dominant materialist idea of the world is denied and repressed.[169]

People usually consider altered states of consciousness to be pathological with the exclusions of dreaming and alcoholic intoxication.

At the same time progressive psychiatrists, consciousness researchers, and healers have an opposite point of view. Ervin Laszlo has mentioned the psychiatrist John Nelson who thinks that

[167] E. Laszlo, Science and the Akashic Field, An Integral Theory of Everything, Inner Traditions, Rochester, Vermont 2004, p. 99
[168] Ibid., p.157
[169] Ibid., p.99

altered states of consciousness are basic for a person's psyche. One end of the psyche's spectrum goes into madness and the opposite one reaches genius.

2.3 Classification of Altered States of Consciousness

I have not found any clear classification of altered states of consciousness. Therefore I have done the classification myself.

The definitions provided by Charles Tart, William Farthing, and Arnold Ludwig do not differentiate between altered states of consciousness (ASCo) and altered states of mind (ASMi).[170] ASMi are the states with the alteration of functioning of mind, with consciousness not altered. The examples of the ASMi are trance, states caused by passive meditation, some drug-induced states. ASCo are the states with the alteration of functioning of consciousness. In this case, there is also the alteration of functioning of mind. Near-death experience, out-of-body experience, shamanic practices are examples of ASCo.

ASCo and ASMi may be pathological and non-pathological. Pathological ones include such mental disorders as schizophrenia, bipolar affective disorder etc. Non-pathological ones includes states caused by meditation, hypnotic states etc.

Finally, ASCo and ASMi may be temporary or permanent. Temporary ones last only for short period of time; they include alcohol-induced states, lucid dreams etc. Permanent ones include schizophrenia, some states caused by meditation.

The branch of my research is permanent non-pathological ASCo. It means that these states do not return to their normal states of functioning. There are no any signs of pathology; people do not have any problems with their health, and do not cause any problems to other people. These altered states are the states of both consciousness and mind.

Non-pathological ASCo give us grounds to consider them as the next stage in the process of the evolution of consciousness. The described later cosmic consciousness will be one more stage in the evolution of consciousness.

2.4 Functions of Altered State of Consciousness

[170] The shortening 'ASCo' should be differentiated from 'ASC' (altered state of consciousness in its general usage).

Arnold Ludwig has analyzed if the altered states of consciousness serve useful functions for people. According to him, the division has been carried into maladaptive, i.e. not assisting or promoting adaptation, and adaptive. [171]

Concerning adaptive expressions, "man has employed a variety of ASCs in an effort to acquire new knowledge or experience, express psychic tensions or relieve conflict without danger to himself or others, and to function more adequately and constructively in society."[172] Adaptive expressions have been divided by Arnold Ludwig into healing, avenues of new knowledge or experience, and social functions. Concerning avenues of new knowledge or/and experience, Arnold Ludwig has mentioned: "There are… numerous instances of sudden illumination, creative insights, and problem solving occurring while man has lapsed into such ASCs as trance, drowsiness, sleep, passive meditation or drug intoxication."[173]

My research interest concerns ASCo that promote avenues of new knowledge or/and experience.

2.5 Out-of-Body Experience

Out-body-experience is an example of ASCo.

> An OBE [out-of-body experience] is an experience in which a person seems to perceive the world from a location outside their physical body. In other words it feels as though 'you' have left your body, and can move and see without it.[174]

OBEs may occur in different situations: at time of relaxing and falling asleep, as a result of electro-stimulation of the brain, or usage of psychedelic drugs.

Susan Blackmore has written about people who had out-of-body experiences:

> OBErs (people who have OBEs) say that the world looks as real as normal, or even 'more real', and that OBEs are nothing like dreams. Vision and hearing seem to be clearer and reach further than normal, and some claim to see paranormally at distance. In rare cases, time and space seem to disappear as in mystical experiences.[175]

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[171] Ibid.
[172] Ibid.
[173] Ibid.
[174] S. Blackmore, Consciousness. An Introduction, London, Hodder & Stoughton 2003, p. 356
[175] Ibidem, p.356
G. Gabbard, S. Twemlow, With the Eyes of the Mind: An Empirical Analysis of Out-of-Body States, New York, Praeger 1984

It is not easy to induce out-of-body experience. At the same time some people had this experience involuntary. Susan Blackmore notes that 15-20 per cent of people claimed to have at least one out-of-body experience during their life. [176] Involuntary out-of-body experiences usually last for a few seconds or minutes.

Out-of-body experience promotes clear differentiation between consciousness and mind. When a person has out-of-body experience, it may be the evidence that his or her consciousness is not located within the person's body. At the same time it may be clear that mind does not coincide with the person's consciousness.

OBE could be a part of near-death experience, the experience which is described later.

2.6 ASCo Caused by Meditation

From a psychological point of view, "meditation refers to a family of self-regulation practices that focus on training attention and awareness in order to bring mental processes under greater voluntary control and thereby foster general mental well-being and development and/or specific capacities such as calm, clarity, and concentration."[177] Meditation is sometimes defined in terms of the altered state of consciousness. "Meditation can be regarded as a slow, cumulative, long-term procedure for producing an altered state of consciousness."[178]

Meditation may lead to both ASMi and ASCo.

When a person meditates in order to have out-of-body experience, his or her task is to change and intensify the stream of consciousness only by means of mind. ASCo caused by meditation might be received with the aim of obtaining new knowledge, experience, or heal himself or herself.

2.7 Stanislav Grof's Idea of Non-Ordinary States of Consciousness

Psychiatrist Stanislav Grof, one of the founders of transpersonal psychology, has been carrying research in non-ordinary or ASCo and ASMi for more than fifty years. His observations and insights are based on systematic exploration of practical cases of ASCo and ASMi. ASCo states caused by meditation, experimental psychotherapy, near-death experience, shamanic rituals have

[176] S. Blackmore, Consciousness. An Introduction, London, Hodder & Stoughton 2003, p. 356
[177] R. Walsh and S.L. Shapiro, The Meeting of Meditative Disciplines and Western Psychology: A Mutually Enriching Dialogue, American Psychologist (American Psychological Association) 61 (3), p. 228-229
[178] B. Wallace and L. Fisher, Consciousness and Behavior, Boston, MA, Allyn & Bacon 1991, p. 153

been taken into account. But in majority of cases, there were psychedelic therapy and "holotropic breathwork".

An important conclusion obtained by Stanislav Grof has been "the recognition that many conditions mainstream psychiatry considers bizarre and pathological are actually natural manifestations of the deep dynamics of the human psyche."[179] In a lot of cases, this manifestation could be the effort to free oneself from some limitations, heal oneself, and find better way of functioning.

As a result of having observed thousands of people in ASCo and ASMi, he has understood that a person's individual consciousness is directly connected not only with the immediate environment and different periods of a person's past, but also with the events which are without the scope of physical senses.

According to Stanislav Grof, transpersonal experience of a lot of people has destroyed the fundamental assumptions of materialistic science:

> Researchers who have seriously studied and/or experienced these fascinating phenomena realize that the attempts of traditional psychiatry to dismiss them as irrelevant products of imagination or as erratic fantasmagoria generated by pathological processes in the brain, are superficial and inadequate. Any unbiased study of the transpersonal domain of the psyche has to come to the conclusion that these observations represent a critical challenge for the Newtonian-Cartesian paradigm of Western science.[180]

Therefore, the ASCo, or non-ordinary states of consciousness, in Stanislav Grof's words, give all grounds to construct new theories concerning a person and his or her interactions with other people, and the environment. These theories should be tested practically.

2.8 Near-Death Experiences

Across ages and different cultures, people who were close to death reported experiences of the process of dying. The experiences include the ones of people who died just after telling about their experiences as well as survivors. Near death experiences (NDE) do not only occur with people who are close to death. Medical anthropologist Ornella Corazza based on different sources has mentioned that NDE could occur in a lot of other situations: with people who are extremely tired, after a long period of isolation and sensory deprivation, as a result of shamanic or meditative

[179] S. Grof with H. Bernett, The Holotropic Mind, the Three Levels of Human Consciousness and How They Shape Our Lives, HarperSanFrancisco 1990, p.18.
[180] S. Grof, Modern Consciousness Research and Human Survival, [in:] Human Survival and Consciousness Research, edited by S. Grof, State University of New York Press 1988, p.70.

practices, with people who have used some drugs, such as ketamine etc.[181] NDE are a vivid example of ASCo.

The term "near-death experience" was coined by physician Raymond Moody, Ph.D. degree in philosophy, Ph.D. degree in psychology, M.D. degree, in 1975. About one hundred and fifty survivors were interviewed by him.

A person is dying; he or she hears oneself pronounced to be dead. He or she suddenly finds oneself outside the physical body, but still in the immediate physical environment, and sees his or her own body from a distance. He or she notices that he or she still has a body. This body has a different nature and with different powers from the physical body he or she has left. Others come to meet and help him or her. A loving, warm spirit of a kind never experienced before, a being of light, appears before him or her. This being helps a person to evaluate his or her life while showing the major events of the life in reverse order. At some point he or she finds oneself approaching some sort of border, apparently representing the limit between the "earthly life" and "next life". He or she finds that he or she must return to the earthly life. As it was mentioned by Raymond Moody, the above narrative is not a representation of the concrete person's experience; it is a typical model.[182]

Following Raymond Moody, medical anthropologist Ornella Corazza described the most typical features of NDE:

(1) the difficulty of expressing in words an experience of such a nature, or ineffability;
(2) the feeling of dying;
(3) moving through darkness or a tunnel, a cave, a cylinder, a valley;
(4) the sense of joy, love, and peace;
(5) encountering the presence of deceased loved ones and other entities;
(6) visions of beings of lights, guardian spirits, and so on – communication with these beings occurs without words, by the power of mere thought;
(7) the perception of separation of the physical body, or out-of-body experience;
(8) a life review, or a panoramic view of the proper life, or specific events that had happened in life;
(9) many people reported hearing certain sounds, some of these were described as unpleasant (such as noise, buzzing, ringing sounds); and, finally,
(10) the decision of conscious return.[183]

NDE may differ according to the age of a person, his or her religious beliefs, country of origin. At the same time, as it was mentioned by O. Corazza, there have always been the common features, such as:

[181] O. Corazza, Near Death Experiences, Exploring the Mind-Body Connection, Routledge, Taylor & Francis Group, London and New York 2008, p. 32
[182] R. A. Moody, Life after Life, Atlanta, GA: Mockingbird Books 1975, p. 19-20
[183] O. Corazza, Near Death Experiences, Exploring the Mind-Body Connection, Routledge, Taylor & Francis Group, London and New York 2008, p. 28.

(1) what happened was 'real' and was not a mere hallucination or a dream;

(2) they [people] will emphasize that they travelled to another 'place', as if it is always there but we are not always able to see it;

(3) finally, they may say that the experiences was one of the most important experiences of their life and that it had a life-changing effect on them, often in a 'spiritual sense'. [184]

One of interesting things mentioned by the majority of survivors is a clear border where there is no return. As only they cross over this border, no return to life is possible. In some cases, people are forced by some entities including deceased relatives to return. And in some cases, it is their conscious choice to come back.

Raymond Moody has found a lot of indications from NDE that mind and consciousness could exist separately from body. If it is true, he considers that therapy in order to treat mental disorders should be absolutely different.[185]

A lot of people have emphasized about the importance of finding new knowledge. In Raymond Moody's words, obtaining of knowledge probably takes place during near-death experiences.

Possible similarities between NDE and the Bardo states in Tibetan Buddhism have been traced. According to Soyal Rinpoche, the author of the book *"*The Tibetan Book of Living and *Dying"*, the Bardo state, similarly to NDE, is characterized as the state of great mobility and clarity.[186]

Having analyzed some cases of NDE, I have found some common features. One of the most important features is NDE teach us to love other people and acquire new knowledge. NDE give evidence that life may not end after death.[187]

2.8.1 Transformative Effects of NDE

The ideas of transformative effects of NDE are based on the paper "Near-Death Experiences: Implications for Human Evolution and Planetary Evolution" written by psychologist Kenneth Ring, the co-founder and past president of the International Association for Near-Death Studies.[188]

Kenneth Ring has pointed out some effects of NDE that are of great importance in the process of the transformation not only the personal life of the individual who had the NDE, but also

[184] Ibid., p. 66
[185] R. A. Moody, Life after Life, Atlanta, GA: Mockingbird Books 1975, p. 132, 157, and others
[186] S. Rinpoche, The Tibetan Book of Living and Dying, HarperCollins Publishers, Inc. 2002, Part Two – Dying.
[187] At the same time I do not state that there is life after death.
[188] K. Ring, Near-Death Experiences: Implications for Human Evolution and Planetary Evolution, [in:] Human Survival and Consciousness Research, edited by S. Grof, State University of New York Press 1988, p. 251-270

other people. Firstly, people emerge from NDE with an increased "appreciation of life". It often takes the form both of a greater responsiveness to the natural beauty of life and tendency to give special attention to the present moment of life. Both past grievances and worries about future tend to decrease.

One more clear change that happens after NDE is an "increased concern for the welfare of others". Kenneth Ring has mentioned here increased tolerance, patience, and compassion for others. But the most important thing is "an increased ability to express love". Really, after NDE, people have a tendency to emphasize the great importance of sharing love as the significant value in their lives.

Finally, the people who had NDE have a tendency "to seek a deeper understanding of life, especially its spiritual or religious aspects". They become to be more involved in their self-understanding. They usually begin describing themselves as more spiritual, not necessarily more religious. Also NDE promote the people's understanding that all major religious traditions have their unity.

Kenneth Ring has summarized that the exciting and impressive transformations of people often go after NDE. These transformations have their great importance in human evolution and planetary transformation.[189]

NDE occur when a person carries out the experiment in consciousness, described in chapter four. Therefore, its understanding correctly will promote avoiding some pitfalls that will take place during the experiment conduction.

2.9 Transference of Consciousness in Tibetan Buddhism

Transference of consciousness in Tibetan Buddhism is a classical example of ASCo. This tradition has been known for hundreds of years.

Transference of consciousness (also called as phowa) is carried out in Tibetan Buddhism in two main cases.

The first case is in the period when a person knows or feels that he or she will die in a short period of time. This practice should be tried to be done several times in order to know how to do it in the process of dying. Other people might help a dying person with the consciousness ejection.[190]

[189] Ibid.
[190] It was described in details in chapter 1.

Venerable Khenchen Dalden Sherab Rinpoche also gives the instructions of what should be done in the case of sudden death. He clearly states that a person should try to eject consciousness by means of mind.[191]

Another case is when a person would like to rebalance himself or herself.[192] This case is taken into account in my research and Ph.D. thesis. Exactly the experiment in consciousness described in chapter four is done by consciousness when it is being transferred.

According to Lama Yeshe, transference of consciousness is not easy. First of all, it is necessary to "practice inner fire meditation and be able to direct energies into central channel".[193] The practice of transference of consciousness helps to understand some basic steps which are important for the performing of the experiment in consciousness (chapter four).

2.10 Richard Maurice Bucke's Idea of Cosmic Consciousness and Evolution

Richard Maurice Bucke, progressive Canadian psychiatrist of the late 19-th century, is known for writing about mystical experience and its interpretation. His name is not widely spread in the philosophy of psychiatry. There are several reasons for this. In the history of psychiatry, even in the second half of the 20-th century, having mystical experience meant having mental disorder. However his pioneering ideas about mystical experience and mental disorder seemingly are not understandable by the majority of psychiatrists and philosophers of psychiatry.

Richard Maurice Bucke suggested the idea of the evolution of a person's consciousness and mind. Concerning consciousness, the evolution will lead to the appearance of cosmic consciousness. The evolution will lead to the appearance of the highest stage of mind, intuitional mind.

2.10.1 Three Grades of Consciousness

Richard Maurice Bucke outlined the existence of three grades of consciousness in his book *"Cosmic Consciousness:* A Study *in the Evolution of the Human Mind"*.[194] The first grade of consciousness is called as "simple consciousness". The animals, "their upper half", such as dogs, horses, possess this grade of consciousness. This consciousness is also characteristic for people under the age of three.[195]

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[191] Ibid., p. 39
[192] Ibid., p. 40
[193] Lama Yeshe, The Bliss of Inner Fire: Heart Practice of the Six Yogas of Naropa, Wisdom Publications, Boston 1998, p. 169
[194] R. Maurice Bucke, Cosmic Consciousness. A Study in the Evolution of the Human Mind, Innes & Sons, Philadelphia 1905, [Online], Available at http://djm.cc/library/Cosmic_Consciousness_edited02.pdf
[195] Animal is used in the meaning of any living creature that is not a plant or a person.

Another, higher, form of consciousness called "self consciousness" belongs to people. Very rarely (in 0.1% of cases) people do not attain self consciousness, they have only simple consciousness. These are the cases of idiots, mentally deficient people. When people acquire self consciousness, their simple consciousness continues to exist. People, unlike animals, by means of self consciousness, are able of treating their own mental states as objects of consciousness.[196]

Richard Maurice Bucke mentioned about self-consciousness: "If it could only be seized and clearly understood, self consciousness would doubtless prove to be the primary and fundamental human attribute. Our language seems to lack the proper word to express it in its simplest form."[197]

Another, higher form of consciousness, is called "cosmic consciousness". Both simple consciousness and self consciousness continue to exist with this grade of consciousness. The main characteristic of cosmic consciousness is "that is, of the life and order of the universe"[198] It is the consciousness, "which is in Dante's phrase capable of transhumanizing a man into a god"[199]

Richard Bucke gave some characteristics concerning cosmic consciousness. The approximate average age of its appearance is thirty-five years old. The minimum mentioned age is twenty-four, the maximum one is fifty-four.[200] It appears to be only in the ratio of one person to a lot of millions people. Cosmic consciousness is only present from a few seconds to a few hours. [201]

There are a lot of elements belonging to cosmic sense.

> Along with the consciousness of the cosmos there occurs an intellectual enlightenment or illumination which alone would place the individual on a new plane of existence – would make him almost a member of a new species. To this is added a state of moral elevation, an indescribable feeling of elevation, elation, and joyousness, and a quickening of the moral sense, which is fully as striking and more important both to the individual and to the race than is the enhanced intellectual power.[202]

2.10.2 Four Stages of Mind

Richard Maurice Bucke stated about the existence of four stages of mind:

> These four stages are, first, the perceptual mind – the mind made up of percepts or sense impressions; second, the mind made up of these and recepts – the so called receptual mind, or on other words the mind of a simple consciousness; third, we have the mind made up of percepts and

[196] R. Maurice Bucke, Cosmic Consciousness. A Study in the Evolution of the Human Mind, Innes & Sons, Philadelphia 1905, [Online], Available at http://djm.cc/library/Cosmic_Consciousness_edited02.pdf , pp. 1, 2, 43
[197] Ibid, p.20
[198] Ibid., p.2
[199] Ibid., p.14
[200] Ibid., p.67
[201] Ibid., p.43
If a person knows how to induce cosmic consciousness, it may be always present.
[202] R. Maurice Bucke, Cosmic Consciousness. A Study in the Evolution of the Human Mind, Innes & Sons, Philadelphia 1905, [Online], Available at http://djm.cc/library/Cosmic_Consciousness_edited02.pdf , p.2

> concepts, called sometimes the conceptual mind or otherwise the self conscious mind – the mind of self consciousness; and, fourth, and last, we have the intuitional mind – the mind whose highest element is not a receipt or a concept but an intuition. This is the mind in which sensation, simple consciousness and self consciousness are supplemental and crowned with cosmic consciousness.[203]

2.10.3 From Self Consciousness to Cosmic Consciousness

Next, Richard Maurice Bucke described the process of appearing of a new faculty, such as self consciousness or cosmic consciousness:

> When a new faculty appears in a race it will be found in the very beginning, in one individual of that race; later it will be found in a few individuals; after a further time in a larger percentage of the members of the race; still later in half the members; and so on, until, after thousands of generations, an individual who misses having the faculty is regarded as a monstrosity.[204]

In Richard Maurice Bucke's words, when people have achieved cosmic consciousness, it does not mean that they have become omniscient or infallible. Instead, they might be compared with a three-year old child who just has acquired self consciousness. Such individuals have reached a new grade of consciousness; but they have not had enough time to exploit it.

Finally, one more successful comparison has been provided:

> As a man with self consciousness may sink in morals and intelligence below the higher animal with simple consciousness merely, so we may suppose a man with cosmic consciousness may (in certain circumstances) be little if at all above another who spends his life on the plane of self consciousness.[205]

People, then, with cosmic consciousness have reached a higher mental level, but at this level there exist equal chances of "comparative wisdom and comparative foolishness", as with the level of self consciousness.

Individuals who have attained this new consciousness "must not be condemned because neither the men nor the new consciousness are absolute".[206] Furthermore, "Within the plane of cosmic consciousness one man shall be a god while another shall not be, to casual observation, lifted so much above ordinary humanity, however much his inward life may be exalted, strengthened and purified by the new sense".[207]

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[203] Ibid., p.13
[204] Ibid., p.44
[205] Ibid., p.66
[206] Ibid., p.66
[207] Ibid., p.56

Richard Maurice Bucke posited that cosmic consciousness appeared mainly in the individuals of the male sex, the ones who are highly developed, people with good intellect and high moral qualities. [208] It usually appeared at the time of life at the age between thirty and forty years.[209]

It was mentioned that the cases of people with cosmic consciousness became more frequent in the last centuries. I have concluded that they would be more frequent from century to century. And moreover, there would be not only individuals with instances of cosmic consciousness, but individuals with entire cosmic consciousness.

As examples, Richard Maurice Bucke described the cosmic consciousness of fourteen people who, in his opinion, had expressed this state of being in the most vivid way. His list includes Gautama the Buddha, Jesus the Christ, Paul, Plotinus, Mohammed, Dante, Las Casas, John Yepes, Francis Bacon, Jacob Behmen, William Blake, Honore de Balzac, Walt Whitman, Edward Carpenter. Also thirty-six more instances of cosmic consciousness were described, but it was mentioned, that these instances were lesser and imperfect.

In my opinion, the most distinguishable of all mentioned people who obtained some elements of cosmic consciousness were Gautama the Buddha and Jesus the Christ.

2.10.4 Cosmic Consciousness and Altered States of Consciousness

From the point of view of "self consciousness", cosmic consciousness is a vivid example of the altered states of consciousness, more exactly ASCo. Sometimes cosmic consciousness may seem to be mental disorder. From the point of view of cosmic consciousness, self consciousness seems to be the consciousness that needs to be developed into cosmic consciousness. The person himself or herself could only develop it.

2.11 Mystical Experience and Mental Disorder

All people mentioned by Richard Maurice Bucke had mystical experiences. Mystical experience is an example of ASCo. The Free Dictionary by Farlex gives the main meanings of the word "mysticism":

"1. a. Immediate consciousness of the transcendent or ultimate reality or God.

b. The experience of such communion as described by mystics.

[208] I suppose that the situation may radically change: there will be approximate equal numbers of individuals of male and female sexes having cosmic consciousness.

[209] Having taken into account that there will be individuals of female sex, and life expectancy has increased, it seems that the usual age will be between twenty-five and forty-five.

2. A belief in the existence of realities beyond perceptual or intellectual apprehension that are central to being and directly accessible by subjective experience."[210]

Richard Maurice Bucke described his mystical experience:

> All at once, without warning of any kind, he found himself wrapped around as it were by a flame-colored cloud. For an instant he thought of fire, some sudden conflagration in the great city; the next he knew that the light was within himself. Directly afterwards came upon him a sense of exultation, of immense joyousness accompanied or immediately followed by an intellectual illumination quite impossible to describe. Into his brain streamed one momentary lightning-flash of the Brahmic Splendor which has ever since lightened his life; upon his heart fell one drop of Brahmic Bliss, leaving thenceforward for always an after taste of heaven. Among other things he did not come to believe, he saw and knew that the Cosmos is not dead matter but a living Presence, that the soul of a man is immortal, that the universe is so built and ordered that without any peradventure all things work together for the good of each and all, that the foundation principle of the world is what we call love and the happiness of every one is in the long run absolutely certain.[211]

Stanislav Grof caused in himself ASCo and had mystical experience. He has mentioned that this experience is regarded as a clear sign of severe pathology in psychiatric books. It became clear for him that it had not been a psychosis but "a glimpse into a world beyond ordinary reality".[212]

In Stanislav Grof's words, mechanistic science has depicted consciousness as the product of highly developed matter, the brain. The model of the psyche that exists in academic psychiatry is oriented towards a person herself or himself; it describes the newborn as a tabula rasa, epistemological theory that people are born without built-in mental content and that their knowledge comes from experience and perception. The practical life has not shown any evidence that either consciousness is an epiphenomenon, or the newborn is like an erased tablet.[213]

Before 1970-ies mainstream psychiatry did not make any distinction between mystical experience and mental disorder.[214] Thus according to mainstream psychiatry, Richard Maurice Bucke as well as other people with elements of cosmic consciousness might have been considered to have mental disorder.

Therefore, even nowadays the proper division concerning mystical experience and mental disorder should be carried out. People with such mental disorders as schizophrenia, bipolar affective disorder (maniac episodes), and paraphrenia sometimes have mystical experience, more often than people without any mental disorder. At the same time, people without any mental disorders

[210] The Free Dictionary by Farlex, , [Online]. Available at http://www.thefreedictionary.com/Mystical+experience
[211] Ibid., p.8
[212] S. Grof with H. Bernett, The Holotropic Mind, the Three Levels of Human Consciousness and How They Shape Our Lives, HarperSanFrancisco 1990, p.16.
[213] S. Grof, Modern Consciousness Research and Human Survival, [in:] Human Survival and Consciousness Research, edited by S. Grof, State University of New York Press 1988, p. 57.
[214] Group for the Advancement of Psychiatry, Mysticism: Spiritual quest or psychic disorder?, New York, GAP 1996

sometimes may have mystical experience, and this experience does not have any relations to mental disorders. Mystical experience of some people may lead to absolutely new knowledge. Having used the term "absolutely new knowledge", I mean the knowledge not known before to people.

Richard Maurice Bucke noted:

> …It is certain that modern civilization (speaking broadly) rests (as already said) very largely on the teachings of the new sense. The masters are taught by it and the rest of the world by them through their books, followers and disciples, so that if here called cosmic consciousness is a form of insanity, we are confronted with the terrible fact (were it not an absurdity) that our civilization, including all our highest religions, rest on delusion.[215]

According to the Religious Experience Research Unit in the United Kingdom, founded by the biologist Alister Hardy, mystical experiences of people have changed their lives in a much better way.[216]

Thus, having mystical experience does not mean having mental disorder anymore. Moreover, mystical experience may improve people "mental health". It may even improve the "mental health" of other people.

2.12 Mysticism as Frontier of Consciousness Evolution

The idea of mysticism as frontier of consciousness is strongly supported in the paper *"Thoughts on Mysticism as Frontier of Consciousness Evolution"* written by Brother David Steindl-Rast, Ph.D. degree in experimental psychology.[217]

First of all, Brother David Steindl-Rast has given the definition of mystical experience in its broadest sense as "the experience of communion with Ultimate Reality". He has pointed out that it is not a theory; it is the practical own experience; and it is a special experience of communion, a special relationship with someone or something which makes you feel that you understand them very well.

Mystical experience is a discovery at a frontier of consciousness. A person cannot go back from that point. He or she has discovered something that could be in his or her mind forever. Mysticism is a particular frontier of consciousness evolution.

In Brother David Steindl-Rast's words, all religious traditions originate from mystical experience:

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[215] Ibid., p. 59.
[216] http://www.tsd.ac.uk/en/lrc/librariesandcentres/alisterhardyreligiousexperienceresearchcentre/research/
[217] D. Steindl-Rast, Thoughts on Mysticism as Frontier of Consciousness Evolution, [in:] Human Survival and Consciousness Research, edited by S. Grof, State University of New York Press 1988, p. 93-117

> They all start from mystical experience. There is not one religious tradition in the world that starts from anything else. Often it starts historically with the mystical experience of the founder or reformer. Always it starts psychologically with the mystical experience of the believer. This is the starting point. And the end point of every religion in the world is the same. The goal of every religion is to make all experience ultimate belonging and act accordingly.[218]

Lastly, according to Brother David Steindl-Rast, there are some things that a person's mind does with the mystical experience. The intellect of the person begins interpreting it. It is not possible to stop it. Then, the mind turns the experience into doctrine, ethics, or ritual.

In my opinion, mystical experience could be inner core not only of a religion, possibly new religion, but also a new philosophy and science.

2.13 Altered States of Consciousness (ASCo), Cognition, and New Knowledge

Non-pathological ASCo play much more important role in the process of cognition and obtaining absolutely new knowledge.

Let us compare three methods of the knowledge acquiring. In the case one, a person obtains knowledge by means of studying, reading books etc. It is the way of gaining knowledge by the majority of people. The positive side of this method is that it is easy to obtain a lot of knowledge available in the world. The negative side of this method is it seems rarely absolutely new knowledge could be acquired by this method.

In the case two, a person obtains knowledge by means of altering his or her state of consciousness and mind as in the case of meditation that causes the altered states of consciousness. The positive side of this method is that some knowledge obtained by such means is absolutely new knowledge. The negative side is that it is not possible to share this knowledge with other people.

In the case three, it is the combination of the methods one and two. It is the case where the positive sides from the above mentioned cases may remain, and negative sides may be omitted.

Concerning cosmic consciousness as kind of ASCo, Richard Maurice Bucke stated that "he learned more within the few seconds during which the illumination lasted than in previous months or even years of study, and that he learned much that no study could ever have taught."[219] It may be inferred that altered states of consciousness (ASCo) enable a person to learn a lot in a very short period of time.

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[218] Ibid., p. 101

[219] R. Maurice Bucke, Cosmic Consciousness. A Study in the Evolution of the Human Mind, Innes & Sons, Philadelphia 1905, [Online], Available at http://djm.cc/library/Cosmic_Consciousness_edited02.pdf , p. 8

Having obtained absolutely new knowledge, the person will have the possibility to compare it with the knowledge obtained before. It will appear that there would be some contradictions in his or her system of thoughts, and some dogmatism in mind. Later less and less dogmatism will remain. Thus mind will become more flexible.

The question of finding out the maximum value of conscious cognitive processes could be arisen. The speculations that will follow in the next chapters will show that a person in the altered state of consciousness may obtain information and knowledge concerning another universe in multiverse.

2.14 Brief Conclusions

The non-pathological altered states of consciousness (ASCo) show us that they could be the next stage of the evolution of consciousness. They could be the states when a person's self consciousness is transmuted into cosmic consciousness.

Mystical experience of some people could be not the signs of mental disorder, but the signs of the evolution of consciousness. Obtaining cosmic consciousness will allow a person to receive absolutely new knowledge, never known before to people.

Chapter 3

The Warping of Time and Consciousness

3.1 Space as a Plenum, Cosmic Plenum

Ervin Laszlo has pointed out that according to the recent research and conclusions, the fundamental properties of reality include the following findings:

> 1. Space is an energy-filled plenum.
> 2. The energies that fill space are the virtual energies of the cosmic plenum (misleadingly named quantum vacuum).
> 3. The universal forces and constants of nature arise in the interaction of the virtual energies of the cosmic plenum with particles and systems of particles in space and time.[220]

The first premise of space as an energy-filled plenum, often intuitively, was stated in a lot of ancient cosmologies. The school of Parmenides and Zeno in ancient Greece considered space to be full rather than empty as well as it was considered by Aristotle. Later it was the beginning of Newton's conception of space. In the nineteenth century the space field which carries out electromagnetic waves was regarded as the ether. Later the idea of ether was rejected. But it did not mean that space was considered as empty. Albert Einstein mentioned that according to the theory of relativity space is filled in with some physical qualities. The last years have shown the idea that space-time is a physical energy medium. Also the idea of plenum was supported by a lot of other physicists, among them Max Planck, Max Born, John Wheeler.

It may be considered that a tiny volume is an "empty space", but it is not, in fact. David Bohm wrote:

> …What we perceive through the senses as empty space is actually the plenum, which is the ground for the existence of everything, including ourselves. The things that appear to our senses are derivative forms and their true meaning can be seen only when we consider the plenum, in which they are generated and sustained, and into which they must ultimately vanish. [221]

When we visualize a geometric point, our mental imagery includes not the point itself, but tiny volume. Space, even in its tiny volume, is not empty. It contains physical realities, both material and energetic.

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[220] E. Laszlo, The Connectivity Hypothesis, Foundations of an Integral Science of Quantum, Cosmos, Life, and Consciousness, State University of New York Press 2003, p.51.
[221] D. Bohm, Wholeness and the Implicate Order, Routledge Classics, London and New York 2002, p. 243

The second premise stating that the energies filling out space are virtual energies of the cosmic plenum means that this domain of energy is below the quanta level. David Bohm calculated that the amount of the mentioned energy in one cubic centimetre of space with the shortest possible wavelength, 10^{-35} metres, would be extremely more than total energy of all the matter in our universe.[222]

The cosmic plenum consists of energy fields that fluctuate near absolute zero value. Energy of the mentioned fields is active even in the case of absolute zero temperature; it is known as zero-point energy. The conception of zero-point energy started at the beginning of the 20-th century when Max Planck got it from the blackbody radiation. Later Albert Einstein confirmed about the existence of these energies. Zero-point energies are the essential part of Max Born's, Werner Heisenberg's, Paul Dirac's research.

The third premise about interactions between the cosmic plenum and systems of particles in space and time, as it was mentioned by Ervin Laszlo, has become clear from the most advance theories in physics. These theories include research carried out by Hendrik Casimir, Andrei Sakharov, Gennady Shipov, Andrey Akimov etc.

Metaphysics of connectivity, in Ervin Laszlo's words, could be divided into two main domains. One of them is the domain of observable particles; another is the virtual domain of the cosmic plenum. The latter domain could not be observed; its existence is inferred from the effects on the observable domain. [223]

3.1.1 Freya Mathew's Idea of a Universe as a Unified and Expanding Plenum

Philosopher Freya Mathew has argued that physical reality could be regarded as an indivisible unity. In her opinion, if we take a considerable view of space, the universe could be conceived as a unified and expanding plenum. At the same time, the universe is internally differentiated and dynamic. She has written: "Such a plenum in necessarily self-actualizing, and its expansiveness and self-differentiation are twin aspects of this self-actualization. Since the plenum is relationally and holistically rather than aggregatively structured, it also, according to these earlier arguments, qualifies as what I call a "self", or self self-realizing system. A self-realizing system is, in this context, defined in systems-theoretic terms, as a system with a very special kind of you, namely its own maintenance and self-perpetuation."[224]

According to Freya Mathew, the plenum, as the indivisible unity, could be as a place of subjectivity. The materiality of the universe is subjectively present in the plenum. The difference between the world as real and the one as appearance could be explained by means of a subject status

[222] D. Bohm, Causality and Chance in Modern Physics, Routledge & Kegan Paul, London 1957, p.163.
[223] E. Laszlo, The Connectivity Hypothesis, Foundations of an Integral Science of Quantum, Cosmos, Life, and Consciousness, State University of New York Press 2003, p. 103.
[224] F. Mathews, For Love of Matter: A Contemporary Panpsychism, State University of New York Press, Albany 2003, p. 47.

of the world itself. This attribution could be expressed as possible by the hypotheses that the plenum is indivisible and the universe is a self with a will and its own purpose.

Quantum mechanics has shown some physical realities that "allow, at the microlevel, for the indefiniteness, diffuseness, indeterminism, and sudden resolutions or crystallizations (and dissolutions) that typify mental or subjective processes". Quantum physics seems to be more applicable to mental processes than to physical processes.[225]

In my opinion, Freya Mathew has depicted skillfully the elaborated model of transition from panpsychism to the plenum in quantum physics, and later to systems philosophy. The Earth, the universe, and the multiverse should be considered as living systems, more developed than human beings.

3.2 Black Holes

Black hole is "maximum condensed energetic spacetime that by swirling motion create Einstein's spacetime curvature that create vortex and from the most condensed vortex space [called singularity] expelled swirling path [string] that create open or closed quanta formations."[226]

One more definition of a black hole is given by theoretical physicist Stephen Hawking: "Black hole: A region in space-time from which nothing, not even light, can escape, because gravity is so strong."[227] This definition appears to be obsolete or partly wrong. Several physicists, among them Yakov Zel'dovich, William Unruh, Don Page etc, have proved that a black hole emits radiation.[228] Yakov Zel'dovich asserted that "a spinning hole will radiate not only gravitational waves, but also electromagnetic waves (photons), neutrinos, and all other forms of radiation that can exist in nature".[229]

Physicist Robert Wald also argues that energy could be extracted from black holes.[230] It could be inferred that energy goes freely through black holes in both sides. Similarly, physicists Leonard Susskind and James Lindesay prove that information is conserved in black holes.[231] The information goes without any obstacles in both sides.

The surface of a black hole is called as event horizon.

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[225] Ibid., p. 49
[226] T. Chaim, Black hole: definition, [Online]. Available at http://www.grandunifiedtheory.org.il/Book7/Black_Hole_Def.htm
This definition is too difficult for those who do not have enough knowledge in physics, but it is the most accurate.
[227] S. Hawking, A Brief History of Time, Bantam Books 1998, p.199.
[228] K. Thorne, *Black Holes and Time Warps. Einstein's Outrageous Legacy,* W W Norton & Company 1994, p. 435
[229] Ibid., p. 433
[230] R. Wald, Space, Time, and Gravity: The Theory of the Big Bang and Black Holes, The University of Chicago Press 1992, p. 105-114
[231] L. Susskind and J. Lindesay, Black Holes, Information and the String Theory Revolution: the Holographic Universe, World Scientific Publishing Co. Pte. Ltd. 2005, p. 81-93

The physicists did the research to find out what it is inside a black hole. The work of Roger Penrose and Stephen Hawking carried out between 1965 and 1970 showed that "according to general relativity, there must be a singularity of infinite density and space-time curvature within a black hole."[232]

The word "singularity" was borrowed from algebra. It means that in some point the mathematical function goes to infinity or has some other irregularities such as critical points.

> A singularity is a region where – according to the laws of general relativity – the curvature of spacetime ceases to exist. Since tidal gravity is a manifestation of spacetime curvature, a singularity is also a region of infinite tidal gravity, that is, a region where gravity stretches all objects infinitely along some directions and squeezes them infinitely along others.[233]

At one extreme, a black hole may have the mass equal to millions of solar masses. At another extreme, a black hole exists at the Planck scale. The sphere of my research interests deals with singularities created at the Planck scale.

3.2.1 Planckian Black Holes

In 1965 after having combined the laws of general relativity and quantum theory, theoretical physicist John Wheeler concluded that at the Planck scale, "the vacuum fluctuations are so huge that space as we know it "boils" and becomes a froth of quantum foam – the same sort of quantum foam as makes up the core of a spacetime singularity."[234]

There are no technologies to see the quantum foam. Theoretical physicist Kip Thorne writes:

> But to see the quantum foam, one would have to zoom in with a (hypothetical) supermicroscope, looking at space and its contents on smaller and smaller scales. One would have to zoom in from the scale of you and me (hundreds of centimeters) to the scale of an atom (10^{-8} centimeter), to the scale of an atomic nucleus (10^{-13} centimeter), and then on downward by twenty factors of 10 more, to 10^{-33} centimeter.[235] At all the early, "large" scale, space would look completely smooth, with a very definite (but tiny) amount of curvature. At the microscope zoom nears, then passes 10^{-32} centimeter, however, one would see space begin to writhe, ever so slightly at first, and then more and more strongly until, when a region just 10^{-33} centimeter in size fills the supermicroscope's entire eyepiece, space has become a froth of probabilistic quantum foam.[236]

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[232] S. Hawking, A Brief History of Time, Bantam Books 1998
[233] K. Thorne, *Black Holes and Time Warps. Einstein's Outrageous Legacy,* W W Norton & Company 1994, p.557
J. Wheeler, Geometrodynamics, Academic Press, New York 1962
[234] K. Thorne, *Black Holes and Time Warps. Einstein's O*utrageous Legacy, W W Norton & Company 1994 , p.494
[235] Technologies allow measurement only to 10^{-16} cm.
[236] Ibid., p.495

Quantum foam is everywhere, in cosmic space, in the room where a person sits, in brain.[237] As it was mentioned earlier, the quantum foam consists of virtual Planckian black holes and wormholes.[238] And as it was mentioned earlier, the roots of consciousness could be found at the Planck scale.

Planckian black holes are virtual and "eternal" objects. "Notice, however, that although being a virtual object, a Planckian black hole can be considered "eternal" as a quantum superposition: (its decoherence time is 10^{34}, equal to the squared age of the universe)."[239] They are quantum objects.[240]

Bernard Carr and Steven Giddings have written about the formation of Planckian black holes:

> The known laws of physics allow for a matter density up to the so-called Planck value of 10^{97} kilograms per cubic meter – the density at which the strength of gravity becomes so strong that quantum-mechanical fluctuations should break down the fabric of spacetime. Such a density would have been enough to create black holes a mere 10^{-35} meter across (a dimension known as the Planck length) with a mass of 10^{-8} kilogram (the Planck mass).[241]

It has been mentioned that the Planckian black hole is the lightest possible black hole. At the same time it is much more massive than an elementary particle. It has much smaller size than an elementary particle.

3.3 The Warping of Time

Until the beginning of the 20-th century, the view of time was like as linear, the sequence of moments following one after another. It was the point of classical physics and common sense. It was Newton's absolute time that existed in the scientific and philosophic thinking for two centuries. Even today this concept continues existing in the minds of the majority of people on Earth. In the cases when time is not linear or/and not absolute, however, we could speak about the curve or warping of time.

Kip Thorne has stated:

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[237] Ibid., p. 494

[238] P. Zizzi, Consciousness and Logic in a Quantum-Computing Universe, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Berlin 2006, p.471

J. Wheeler, Geometrodynamics, Academic Press, New York 1962

[239] P. Zizzi, Consciousness and Logic in a Quantum-Computing Universe, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Berlin 2006, p.473

[240] Ibid., p.473

[241] B. Carr and S. Giddings, Quantum black holes, Scientific American 292 N5 (2005), p. 30-37

> In an idealized universe, without gravity, there is no warping of space, no warping of time; spacetime has no curvature. In this universe, according to Einstein's special relativity law, freely moving particles must travel along absolutely straight lines. They must maintain constant direction and constant velocity, as measured in any and every inertial reference frame. This is a fundamental tenet of special relativity."[242]

The most important discovery came out from general relativity is the realization that space is warped. The influence of any mass as it was showed by Albert Einstein is such as to bend the space in its vicinity, and the amount of bending is equivalent to the gravitational field. The space around the Earth is slightly warped, but this warping is so small that it remains practically undetectable. The mass of the Sun is great enough to show an effect, such as is seen in the deflection of light rays coming to Earth from stars.

It has been shown in special relativity that the old categories of time and space are incorrect. Herman Minkowski changed these categories into the four-dimensional space-time continuum in which space and time became integral functions of each other. This continuum was brought into general relativity by Albert Einstein. Thus, according to Einstein, any warping of space requires warping of time.

Einstein's revolution in relativity theory departed from the proof that order of events in some length of time is neither fixed nor absolute, meaning that events that should go in the sequence A, B, and C as defined by classical physics, may go in the order B, A, and C, or some other sequence.

Also there is no absolute time and no absolute space. For example, as the speed of a spacecraft approaches the velocity of light, time will slow down for any person travelling within that craft. The space around them will shrink, and their mass will go towards the infinity. Time does not run if the spacecraft flies with the velocity of light. It is an example of the warping of time due to relative motion.

Also there is the warping of time near a star or a black hole. It is the warping of time produced by its strong gravitation. Gravitational field distorts space and time in the vicinity. Time in a strong gravitational field runs more slowly in comparison of outside the strong gravitational field. If the gravitational field is strong enough, time does not run, as it would be with time of an object travelling at the speed of light. At the boundary of a black hole, gravity is so strong that time does not run. Time stops to exist inside a black hole.

3.4 Time Reversibility

[242] K. Thorne, *Black Holes and Time Warps. Einstein's Outrageous Legacy,* W W Norton & Company 1994, p. 109

As it was mentioned by physical chemist and systems theorist Ilya Prigorine, people are becoming more and more aware that irreversibility plays an increasing role at all levels, from elementary particles to cosmology. Science is in the process of discovering time. A new dimension in science and the humanities began.[243]

Time reversibility means that events that should go in the sequence A, B in some length of time in classical physics, may go in the sequence B, A.

Physicist and philosopher Olivier Costa de Beauregard wrote:

> In Newtonian [physics] the separation between past and future was objective, in the sense that it was determined by a single instant of universal time, the present. This no longer true in relativistic… There can no longer be any objective and essential (that is, not arbitrary) division of space-time between events which have already occurred and events which have not yet occurred.[244]

Logician and philosopher Kurt Gödel published the solution to the relativity equations in 1949. This solution showed that the possibility of self-intersecting lines and stated that a present moment could be simultaneously with another moment in past or with another moment in future. Albert Einstein gave a positive review to the article. Later postulates of black holes provided the basis for time reversibility. The postulates of black holes confirm Kurt Gödel's solution to the relativity equations.

If someone would go into a black hole, for other people outside, it would like as it had taken an infinite time for the person to go there. For the person in the black hole, time would run normally. The effect would be similar to one, predicted by relativity theory: the time of the traveller approaching the velocity of light would slow down and finally would not run. The person going into the black hole would go into our future.

The astrophysicist John Gribbin has written:

> Inside a black hole, time as we know it (together with space as we know it) ceases to exist… A very massive, compact object such as a black hole, with an intense gravitational field surrounding it, provides the intrepid space traveller with the means to jump into the future not just once but repeatedly… Just driving a spacecraft into the region of strong gravity and swinging out again on the other side, the astronaut would see time in the outside universe speeded up, with millennia – or longer intervals – flicking by in the few weeks he spent manoeuvering his spacecraft around the hole and out again.[245]

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[243] I. Prigogine, The Rediscovery of Time, a discourse given in 1983, Mountain Man Graphics, [Online]. Available at http://www.mountainman.com.au/ilyatime.htm

[244] The Voices of Time, London, Fraser, J.T., ed., Allen Lane, 1968, p. 429

[245] J. Gribbin, Timewarps, London: Dent, 1979, p. 67-68

Later the possibility of time reversibility was shown on the subatomic level. An electron may, with the same probabilities, have a transition from a lower energy state to a higher one, or from a higher energy state to a lower one.[246]

Some interpretations of quantum physics allow physical influences going backwards in time. A positron that is antiparticle of an electron moves backwards in time. Rupert Sheldrake based on transactional interpretation of quantum mechanics has stated:

> …Quantum processes are seen as standing waves between emitters and absorbers, with forward-in-time waves moving from emitter to absorber, and backward-in-time waves from absorber to emitter. At the very moment your eye absorbs a photon of light reflected from the page of [a] book, it emits a kind of antiphoton moving in the reverse direction that reaches the page just as the photon is emitted towards your eye. There is a 'handshake' between the page and your eye with connections going both ways in space and time."[247]

Thus the person going into the black hole would go into the future. It is not the actual future; it is the probable future. If it is possible to send the information from the black hole, the information will be sent to the present.

I argue later than a person's mind and consciousness could go into the Planckian hole, the probable future.

3.5 Henri Bergson's Idea of Duration

Philosopher Henri Bergson clearly differentiated between duration and time. The main difference is that duration does not have any connection with space as in the case of time: "Homogeneous time as the medium in which conscious states form discrete series. This time is nothing but space, and pure duration is something different."[248] In Henri Bergson's words, time is projected into space, and duration is expressed in terms of extensity.[249]

Inner duration has some relations with consciousness.

> Granted that inner duration, perceived by consciousness, is nothing else but the melting of states of consciousness into one another, and the gradual growth of the ego, it will be said, notwithstanding,

[246] D. Bohm, Quantum Theory, London: Constable, 1951, p. 415
[247] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012, p.141-142.
[248] H. Bergson, Time and Free Will, An Essay on the Immediate Data of Consciousness, London: George Allen & Unwin Ltd 1910, p. 98
[249] It should be mentioned that the book was being written at the time when Herman Minkowski and Albert Einstein were developing their theories of spacetime.

that the time which the astronomer introduces into his formulae, the time which our clocks divide into equal portions, this time, at least, is something different: it must be a measurable and therefore homogeneous magnitude."[250]

Duration does not belong to the external world; it belongs to the consciousness and mind.

In Henri Bergson's words, duration could not be represented by any formula. Duration is not an object, it is a mental synthesis. Henri Bergson's idea of time and duration seems to be similar to the idea of time and the warping of time in physics. Pure duration may decrease to zero when a person's consciousness is its majority inside a Planckian black hole.

3.6 Ilya Prigogine's Internal Time

Ilya Prigogine worked out the conception of internal time based on unstable dynamic systems. In his opinion, the dynamics of these systems has internal time which corresponds to algebra of observables. As only we begin using internal time and partitions, the laws of classical physics could not be used. Instability would lead to non-locality.[251] The main obstacle of transition between theories of dynamic systems and description in probabilistic terms would not exist anymore. A microscopic theory of irreversible processes would be reached.[252]

It was mentioned that problem of the "now" worried Albert Einstein a lot. The experience of the "now" which differs in a great deal from the past and future means something peculiar for a human being. It could be outside of the framework of science. Traditional linear representation of time could not be taken into consideration anymore.

Ilya Prigogine depicted some imaginary world in which people would not age together: future of some people is the past of others. The distribution (Y) as a superposition of partitions has been described. Mathematically, the formula is:

Y= sum (Cn Xn), where n is from + infinity to - infinity

The index n = 0 means present; the values of n that are more than 0 correspond to the future, and the values of n that are less than 0 corresponds to the past. The sum in this case extends symmetrically in the past and in the future. Xn is the partition which corresponds to internal time n.

Ilya Prigorine has concluded:

[250] H. Bergson, Time and Free Will, An Essay on the Immediate Data of Consciousness, London: George Allen & Unwin Ltd 1910, p. 107

[251] Non-locality in general and Bell's theorem is described later in this chapter.

[252] I. Prigogine, The Rediscovery of Time, a discourse given in 1983, Mountain Man Graphics, [Online]. Available at http://www.mountainman.com.au/ilyatime.htm

> This contributes us with a quite interesting situation: while the classical distribution of past, present, and future refers to a given, "astronomical" time (time as read on a watch), the new description, as expressed in the mathematical formula just given, combines contributions coming from all values of the internal time. In this sense, time becomes "non-local" – the present is a recapitulation of the past, and anticipation of the future.[253]

The present state of people's neuronal system containing an element of their past experience, and an element of anticipation of future events: all have been taken into account.

3.7 David Lewis' Time Travel

Philosopher David Lewis maintained the idea about the possibility of time travel. First of all, the definition of time travel has been provided:

> …If he is a time traveler, the separation in time between departure and arrival does not equal the duration of his journey. He departs; he travels for an hour, let us say; then he arrives. The time he reaches is not the time one hour, let us say; then he arrives. The time he reaches is not the time one hour after his departure. It is later, if he has traveled toward the future; earlier if he has traveled toward the past. If he has traveled far toward the past, it is earlier even then his departure. [254]

David Lewis compared time traveller with "a streak through the manifold of space-time, a whole composed of stages located at various times and places". If a person travels toward the future, he or she is on a stretched out streak.

According to him, time may have different dimensions. David Lewis distinguished "time itself" from the "personal time of a particular time traveler".[255] Thus in the case of travelling toward to future, when the personal time is one hour, the external time is more than an hour.

It was mentioned that the problem of personal identity may be especially serious. Especially it is the case when the person is a time traveller whose trips are instantaneous. Thus the streak consists of different unconnected segments. This could be solved while uniting all segments of a time traveller by means of mostly mental continuity. The time traveller is connected and continuous only when it concerns his or her own personal time. The stages may be taken in order, and the changes, both mental and bodily, would be mostly gradual.

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[253] Ibid.
[254] D. Lewis, The Paradoxes of Time Travel, [in:] The Philosophy of Time, edited by R. Le Poidevin and M. Macbeath, Oxford University Press, Oxford 1993, p. 134
[255] The conception of 'time itself' is similar to the conception of duration in Henri Bergson's understanding.

All these arguments have been made in the pattern of four-dimensional space-time, without any extra time dimensions.

David Lewis described the hypothetical time travel of a person. He did not know that his description would be of great importance taken into consideration that not a person's body, but its consciousness might travel in time.

3.8 Time Slip

Time slip is a psychical phenomenon according to which a person's consciousness or/and mind travel though time and could occur in another reality, in past or future.[256] The main difference from time travel is that in the case of time slip, a person's body does not travel.

The possibility of time slip could be explained based on the Colin McGinn's, Paola Zizzi's, and Ervin Laszlo's conceptions of consciousness and Rupert Sheldrake's conception of extended mind.

Concerning time slip into past, Rupert Sheldrake has argued that memories as non-material traces are stored in space. The fields of consciousness and mind are supposed to exist; these are natural fields.[257] It seems there are some places on the Earth, where, from unknown reasons, the field of mind is more concentrated than in other places and the mind and consciousness of a person might slip into past.

Concerning time slip into future, the existence of Planckian black holes everywhere in space provides theoretical and practical background for this. It will be shown later that a person's consciousness and mind could flow into them. Also it will be shown that it is flowing into future, probable future. Also there are probably some places on the Earth, where it is more likely for a person to carry out time slip into future.

3.9 Quantum Theory: Denial of Commonsense Physical Reality

Quantum theory (also "quantum physics" or "quantum mechanics") includes "the laws of physics that govern the realm of the small (atoms, molecules, electrons, protons), and that also underlie the realm of the large, but rarely show themselves there. Among the phenomena that

[256] Different cases of alleged time slips could be found in the archives at the Cambridge University Library. They include the cases of time slips into past. The objective reality of these cases could be disputed. On another hand, their possibilities could be explained.
[257] The mentioned fields are described in Chapter 5.

quantum mechanics predicts are the uncertainty principle, wave/particle duality, and vacuum fluctuations."[258]

Niels Bohr, a founding figure in quantum theory, told that if you were not shocked by quantum theory, you had not understood it.[259] Quantum theory is not an intuitive one. Even those with qualifications is physics, cannot accept some facts revealed by quantum theory. "Today, quantum experiments deny a commonsense physical reality."[260] But the experiments, carried out in the last decades, have shown that it is completely correct. "If a theory meets these high standards, we are obliged to accept it as reliable science, no matter how it conflicts with our intuitions."[261]

One of the claims of the quantum physics without any common sense for the majority of people is the following: "if you observed a small object, an atom, say, to be someplace, it was your looking that caused it to be there."[262] Another claim is: "the observation of an object can instantaneously influence the behavior of another greatly distant object – even if no physical force *connects the two."* [263]

According to the practical, the Copenhagen interpretation of quantum physics, "only the observed properties of microscopic objects exist."[264] John Wheeler, a leading quantum cosmologist, stated: "No microscopic property is a property until it is an observed property." [265] But what is the observation? Well agreed definition of this term does not exist. Observation happens "whenever a microscopic, an atomic-scale object, interacts with a macroscopic, large-scale object."[266]

3.10 John Wheeler's Idea of the Participatory Universe

John Wheeler introduced the idea of the participatory universe. Physicists John Barrow, Paul Davies and planetary scientist Charles Harper wrote in the book *"Science and Ulti*mate Reality. *Quantum Theory, Cosmology, and Complexity"*:

> The universe according to Wheeler is thus a "strange loop" in which physics gives rise to observers and observers give rise (at least part of) physics. But Wheeler seeks to go beyond this two-way interdependence and turn the conventional explanatory relationship
>
> matter -> information -> observers

[258] K. Thorne, Black Holes and Time *Warps. Einstein's Outrageous Legacy,* W W Norton & Company 1994, p.557
[259] B. Rosenblum and F. Kuttner, Quantum Enigma. Physics Encounters Consciousness, Oxford University Press 2011
[260] Ibid., p.6
[261] Ibid., p.27
[262] Ibid., p.4
[263] Ibid., p.7
[264] Ibid., p.103
[265] Ibid., p.103
[266] Ibid., p.130

on its head, and place observership at the base of the explanatory chain

observers -> information -> matter

thus arriving at his famous "it from bit" dictum, the "it" referring to a physical object such as an atom, and the "bit" being the information that relates to it. In it from bit, the universe is fundamentally an information-processing system from which the appearance of matter emerges at a higher level of reality.[267]

According to the authors, the application of quantum theory to the entire universe is, probably, the most impressive extrapolation of physics in the history of science with a main role played by John Wheeler.[268]

In my opinion, the idea of the participatory universe is valuable, because it explains that people themselves partly create the universe.

3.11 Heisenberg Uncertainty Principle

Werner Heisenberg proved that the foundations of our universe are built on the unpredictability of sub-atomic events. Heisenberg Uncertainty Principle had its origin from the problem of trying to follow the movements of subatomic particles along their ways. The physicists trying to measure the movement of an electron will have to choose either knowing its momentum without identification its position or knowing its position without knowing its momentum. They will never know both characteristics so necessary in order to know about the electron movement.

Max Born, a Nobel Prize winner in physics, wrote:

> If we can never actually determine more than one of the two properties [of a particle] (possession of a definite position and of a definite momentum), and if when one is determined we can make no assertion at all about the other property for the same moment, so far as our experiment goes, then we are not justified in concluding that the 'thing' under examination can actually be described as a particle in the usual sense of the term.[269]

Elementary particles could be described like either particles or waves at the sub-atomic level. We do not know under what conditions a sub-atomic particle will behave as particle or as a wave. Particles-waves are complex mathematical entities which show their dualistic nature.

[267] J. Barrow, P. Davies, C. Harper, Science and Ultimate Reality. Quantum Theory, Cosmology, and Complexity, Cambridge University Press, p. 10
[268] Ibidem, p. 12
[269] M. Born, Atomic Physics, Glasgow: Blackie, 1969, p. 97

The implications of Heisenberg Uncertainty Principle state that reality consists not of any fixed actualities that we might know but rather of all the probabilities of the actualities. It is not known yet how the possibility becomes actuality in quantum theory.

According to Heisenberg Uncertainty Principle, it is not possible to know the sufficient conditions for carrying out some experiments dealing with elementary particles. One of the examples is the experiment in consciousness described in chapter four.

3.12 Bell's Theorem

Bell's Theorem is often called the most important discovery in science in the second half of the twentieth century. Irish physicist John Bell proved mathematically that there are genuine nonlocal connections over great distances. The principle of non-locality, i.e. that something could be affected without any local cause, is highlighted in Bell's Theorem.

Quantum theory states that there are no such things as separate parts. It was mentioned by Henry Stapp that our world is "… not a structure built out of independently existing unanalysable entities, but rather a web of relationships between elements whose meanings arise wholly from their relationships to the whole"[270]

According to the non-locality principle, there could be correlations between very distant objects or events, and the action at a distance will be instantaneous.

Bell's Theorem was tested in the laboratory in 1974 when two physicists, Stuart Freedman and John Clauser completed the experiments on polarized photons successfully. They established that correlations happen as quantum theory predicts. Later the experiments were repeated successfully several times.[271] "…The experiments showed that properties of our world either have only an observation-created reality or that there exists a connectedness beyond that mitigated by ordinary physical force, or both."[272]

In contrast to relativity theory, quantum theory is non-local as far as a quantum system state is spread throughout space.

Bell's Theorem could explain some things in the process of mental imagery, such as the visualization of a geometric point. There might be the correlations between the mind of a person and some objects of mental imagery over great distances. Also Bell's Theorem could explain the phenomenon of telepathy as well as other phenomena in parapsychology.[273]

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[270] H. Stapp, S-Matrix Interpretation of Quantum Theory, The Physical Review: 1971

[271] At the same time up to the present, it has not been proved experimentally that correlations are instantaneous.

[272] B. Rosenblum and F. Kuttner, Quantum Enigma. Physics Encounters Consciousness, Oxford University Press 2011, p. 185

[273] Telepathy is described in Chapter 6.

3.13 Inside Singularities

One more definition of singularity has been given by Bob Toben, Jack Sarfati, and Fred Wolf: "Singularities are entry and exit points of that which is beyond space-time projecting itself into space-time."[274] Kip Thorne carried out the research in order to find out what it is inside black holes and singularities. He writes: "Very near the singularity,…the laws of quantum mechanics merge with Einstein's general relativistic laws and completely changes the "rules of the game". The new rules are called quantum gravity."[275] However, no successful theory of quantum gravity has been worked out yet.

Spacetime ceases to exist inside singularities. Neither space exists, no time exists there. "Everywhere inside the horizon… gravity is so strong (spacetime is so strongly warped) that time itself (everyone's time) flows into the singularity."[276]

Inside singularities all known laws of science are broken. Neither relativity theory, nor quantum mechanics works. Thus, metaphysical cosmology may be helpful in order to find out what it is inside singularities.

As it had been written, Colin McGinn considers consciousness to be non-spatial. According to Paola Zizzi, its roots could be found at the Planck scale. Thus the origin of consciousness is inside singularities.[277] It can not be probed there.

Kip Thorne argues that one of the tasks in future will be "to determine the probabilities for the singularity to give birth to "new universes", that is, to give birth to new, classical (non-quantum) regions of spacetime, in the same sense as the big bang singularity gave birth to our Universe some 15 billion years ago."[278]

A person's mind and consciousness could go into singularities. Probably a person's consciousness and mind may have the abilities to give birth to a new universe. This universe may have some physical laws opposite to the laws in our universe. One of the probable laws may include time flowing into opposite direction. The universe should be in future while comparing it to our universe.

3.14 Consciousness and Quantum Theory

[274] B Toben, J. Sarfati, and F. Wolf, Space-Time and Beyond: Towards an Explanation of the Unexplainable, Dutton, New York 1974, p. 153.
[275] K. Thorne, Black Holes and Time Warps. Eins*tein's Outrageous Legacy,* W W Norton & Company 1994, p. 476
[276] Ibid., p. 453
[277] For sure, the roots of consciousness could not be in a wormhole, as far as the wormhole only connects two separated locations in our universe.
[278] Ibid., p. 478

From the non-orthodox interpretation of quantum physics, especially from writings of physicists John Wheeler, Henry P. Stapp, Bruce Rosenblum, Fred Kuttner, and Eugene Wigner - it becomes clear that is not possible to understand quantum physics without taking consciousness into account. When a person tries to visualize tiny particles, the process involves his or her mind and consciousness. An example of the conscious observation could be the following: a person visualizes a small object, with the scales not more than an atom.

Quantum theory is a base for physics, a base for other sciences, and it could describe a lot of things in the universe. "It even encounters the essence of our humanity, our consciousness."[279] At the same time, at present moment quantum physics and consciousness are issues more for philosophy than physics, since physicists in general do not wish to deal with consciousness.

Eugene Wigner, a Nobel Prize winner in physics, published the article *"Remarks on the* mind-*body problem"*.[280]The article emphasized the main role of consciousness in quantum theory. He hypothesizes that consciousness collapses the wave function, consciousness is responsible for its changing from possibility into reality. According to Wigner, the conscious observers themselves play the most important role in bringing that what they observe.

Fritjof Capra further has explained:

> In quantum theory, the observed "objects" can only be understood in terms of the interaction between the processes of preparation and measurement, and the end of this chain of properties lies always in the consciousness of the human observer. The crucial feature of quantum theory is that the human observer is not only necessary to observe the properties of an object, but it is necessary even to bring about these properties. My conscious decision about how to observe, say, an electron – whether I decide to use my apparatus in one way or another – will determine the electron's properties to some extent. In other words, the electron does not have objective properties independent of my mind.[281]

In Fritjof Capra's words, there is no any sharp split between mind and matter, between a person and the environment in quantum physics.

Quantum theory deals with everything; mind and consciousness should be taken into account in the science in its future consideration. Without it, it is not possible to have its further progress in understanding of reality.

[279] B. Rosenblum and F. Kuttner, Quantum Enigma. Physics Encounters Consciousness, Oxford University Press 2011, p. 6

[280] E. Wigner, Remarks on the mind-body problem, [in:] The Scientist Speculates, I. J. Good (Ed.), Heinemann, London 1961, p. 284-302

[281] F. Capra, The Tao of Physics, [in:] Science and Consciousness. Two Views of the Universe, ed. by M. Cazenave, Pergamon Press 1984, p.24

3.15 Brief Conclusions

The theory of the warping of time has been analyzed. The theory of the Planckian black holes has been analyzed too. The combination of these theories has allowed us to carry out the analysis what is inside black holes.

A person's consciousness and mind play an important role in quantum theory. They could flow inside singularities. Probably the streams of the person's consciousness could give a birth to or reach another universe.

Chapter 4
Experiment in Consciousness

4.1 Experimental Philosophy

Experimental philosophy is an emerging field of philosophy. It appeared around 2000 as a new philosophical movement. Joshua Knobe, Shaun Nichols, and Joshua Alexander are among the philosophers who contributed to the development of experimental philosophy. The most recent and, in my opinion, the most advanced publication in experimental philosophy is a seminal book *"Experimental Philosophy: An Introduction"* written by philosopher Joshua Alexander.[282]

4.1.1 Philosophical Intuitions

Joshua Alexander has written in the introduction about philosophical intuitions:

> We ask philosophical intuitions – what we would say or how things seem to us to be – to do a lot of work for us. We advance philosophical theories on the basis of their ability to explain our philosophical intuitions, defend their truth on the basis of their overall agreement with our philosophical intuitions, and justify our philosophical beliefs on the basis of their accordance with our philosophical intuitions. This may not be all that we do and maybe not all of us do it. But enough of us do it, and often enough, that this way of thinking about philosophy has come, at least in certain circles, to be the way to think about philosophy.[283]

Philosophical intuitions are the base of experimental philosophy. Joshua Alexander has mentioned that philosophers may be interested in studying both folk philosophical intuitions and their own philosophical ones.

It has been pointed out that there are different approaches towards the definition and explanation of philosophical intuitions. They range from the conceptions that describe philosophical intuitions as "generic kinds of mental states" such as beliefs to the conceptions that provide "additional conditions on what kinds of mental states count as genuine philosophical intuition". The mentioned conceptions include the following ones: doxastic, phenomenological, semantic, and methodological.[284] [285]

4.1.2 Collision between Philosophical Intuitions

[282] J. Alexander, Experimental Philosophy: An Introduction, Polity Press, Maiden, MA, USA 2012
[283] Ibid., p.1
[284] Ibid., pp. 20-27
[285] It should be mentioned that philosophical intuitions in all these conceptions differ from the conception of mathematical intuition worked out by Paola Zizzi (Chapter 5).

Joshua Alexander has compared expert philosophical intuitions and folk philosophical intuitions. In his opinion, there are no any grounds to consider expert philosophical intuitions to be more valuable than folk philosophical intuitions.[286]

I am sure that an expert philosophical intuition and a folk philosophical intuition may represent opposite points of view. The task is to find out what philosophical intuition is more valuable. Sometimes it is possible to clarify it in the process of a collision between philosophical intuitions.

Case 2

Person A has the philosophical intuition that mind is extended in space. Person B does not consider mind to be extended in space. Person A wants to persuade person B to change her or his opinion about mind.

According to person A, if person B does not believe that mind is extended in space, person B should think that it is not possible for her or him to be hypnotized only by means of mind of the person A. If mind is extended in space, it is quite natural to suppose that the mind of person B could *be "put inside" of* the mind of the person A.

If person A carries out the hypnosis only by mind, it gives him more evidence to believe that his or her philosophical intuition concerning the view that mind is extended in space is right and valuable. On another hand, person B will not have backgrounds to believe anymore that mind is not extended in space.

The question may arise why carrying out the hypnosis by means of mind does not occur often, only in very rare occasions. The answer is simple: in order to do it mind should be highly developed. The hypnosis could also be carried out by means of consciousness. The most effective way is both by mind and consciousness.

The mentioned case is one of the examples of the construction of philosophical theories based on philosophical intuitions which grew in the process of a collision with a diametrical point of view. Before the collisions with opposite views, philosophical intuitions could be based on different knowledge, beliefs etc. In our case, the main background of their development could be philosophy of Buddhism and some knowledge of quantum physics.

Ph.D. thesis which deals with experimental philosophy is based on different philosophical intuitions. Some of them have been developed in the processes of collisions between opposite points of view. The example of another collision: it is possible to extract consciousness from body through the central channel by means of mind against the opposite point of view could be explained in terms of philosophy of mind and metaphysical cosmology against the opposite point of view.

[286] J. Alexander, Experimental Philosophy: An Introduction, Polity Press, Maiden, MA, USA 2012, pp. 90-98.

The main philosophical intuition is the following.

The age of a person, in its physical and biological sense, may not change with the passed time, i.e. the person*'s body* may not have any significant changes for the period, as an example, of fifty years. Albert Einstein proved this fact in relativity theory. The classical example was a person travelling in the spacecraft at the speed of the light. The problem is that at present moment it cannot be done. We do not have any equipment to travel nearly or at the speed of the light. The example described in the thesis allows us to reach the permanent altered state of consciousness when our bodies will not have any significant changes for a long period of time. It is the case of gravitational *time dilation based on a person's consciousness.*

The main backgrounds of the intuition is consciousness and mind based on the theories of A. Einstein's special and general relativity, quantum physics, philosophy of Buddhism, especially Tibetan Buddhism as well as a lot of people philosophical intuitions. The intuition was developed for the period of thirteen years (2001-2014). It struggled against an opposite view, in severe collisions. It always survived and found its way in philosophy of mind and metaphysical cosmology.

4.1.3 Methods of Experimental Philosophy

Joshua Alexander in *"A Note on the Methods of Experimental Philosophy"* has pointed out that survey methods are the ones which are predominantly used in experimental philosophy.[287] I agree with him concerning this point of view.

At the same time, I would like to point out that an experiment itself should be mentioned as one of the main methods of experimental philosophy.

Case 3

Let us take into consideration the philosophical intuition about consciousness leaving from body through the central channel by means of mind, the practice of phowa in Tibetan Buddhism and other traditions. If survey is conducted concerning the intuition, they would probably show that overwhelming majority of people including *"experts in philosophy"* will neither understand it, nor support it.

Only the experiment itself may show to the holder of philosophical intuitions that they are right and valuable. His or her philosophical intuitions should overcome collisions with opposite points of view.

If possible, the experiment should be conducted by other people. At the same time, it should be clear that an overwhelming majority of people would refuse even to try to carry out the

[287] J. Alexander, Experimental Philosophy: An Introduction, Polity Press, Maiden, MA, USA 2012, p. 110-113.

mentioned experiment. Also the majority of people who would agree to carry out the experiment will not achieve any positive results.

From the mentioned example it should be understandable that survey methods cannot be the most important methods in experimental philosophy; experiment itself seems to be the most important method.

4.2 Mental Imagery

Thomas Nigel has defined mental imagery: "Mental imagery (varieties of which are sometimes colloquially referred to as "visualizing," "seeing in the mind's eye," "hearing in the head," "imagining the feel of," etc.) is quasi-perceptual experience; it resembles perceptual experience, but occurs in the absence of the appropriate external stimuli."[288]

Mental imagery, then, is a form of experience. Mental imagery theoretically and practically could occur in any sense: visual, auditory, olfactory, gustatory, and tactile. Most often people deal with visual sense, therefore mental imagery is often called as visual imagery or visualization. Auditory images are often called as "inner speech". In the majority of cases, the combination of sense modes is used for the purpose of mental imagery.

4.2.2 Mental Imagery of a Quantum Object

Physicist and philosopher Danah Zohar has stated:

> In fact, it has been known for decades that the visual cortex of the human brain is sensitive enough to register a single proton of light, and that is equivalent to saying that it is registering a single quantum process – the passage of one electron from a higher energy state within an atom to a lower energy state. Such single quantum processes are, of course, subject to the uncertainty principle, and are the locus of non-local effects.[289]

If single quantum processes are registered by the human brain, it could be suggested that quantum objects as Planckian black holes could be registered by the brain too. In fact, Planckian black holes are described according to laws of quantum physics.

[288] T. Nigel, Mental Imagery, [in:] The Stanford Encyclopedia of Philosophy (Winter 2011 Edition), Edward N. Zalta (ed.), [Online]. Available at http://plato.stanford.edu/archives/win2011/entries/mental-imagery/
[289] D. Zohar, Through Time Barrier, A Study in Precognition and Modern Physics, London, Heinemann, 1982, p.139

Thomas Nigel has mentioned: "We are unlikely to be able to understand imaginal consciousness unless we understand perceptual consciousness (and perhaps vice-versa)"[290] Thus, our minds are able to visualize a quantum object without its registration without any previous experience of perception. At the same time we take not a quantum object, but the geometric point as an object of mental imagery and concentrative meditation.

4.3 Geometric Point as an Object of Mental Imagery

I take the geometric point as an object of mental imagery in the experiment in consciousness.

I would like to prove why the geometric point but not another geometric figure should be taken as an object of the mental imagery.

Let us take such simple illustrative example. We are in the room of the building and looking at the ceiling. The task is to make a hole in the ceiling by means of mind power. For sure, we suppose that the mind has some power, probably the power still unknown to us.[291] Let the mind power at some time is equal to "P".

In order to measure the pressure of the mind per unit area "A", we do the calculation P / A. The pressure per unit area goes to infinity in the case "A" goes to zero. The person can't visualize the geometric point itself, as far as it is dimensionless. But we suppose the person can visualize the geometric point model which square is nearly equal the square of the Planckian length, the minimum length known to people.

In the case the person tries to visualize another geometric figure or a set of geometric points, as well as any other sets, the square of this figure or a set will be larger than the square of the geometric point model. For example, in the case of the rectangle with the side 3 cm and 2 cm, it contains a great number of the mentioned geometric point models.

So, if it happens that the mind power exists, only in the case of the geometric point model, the pressure will be the largest. But the person should try to visualize the geometric point itself. In the case of taking the geometric point model and visualizing not geometric point, the object of the mental imagery will contain not one geometric point model, and thus the pressure on the object will be less.

The geometric point is not the subjective mental imagery comparing to other imageries, for example to the mental imagery of a flower or candle light. In the case of a flower or candle light,

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[290] T. Nigel, Mental Imagery, [in:] The Stanford Encyclopedia of Philosophy (Winter 2011 Edition), Edward N. Zalta (ed.), [Online]. Available at http://plato.stanford.edu/archives/win2011/entries/mental-imagery/

[291] Once again, I do not state that mind has some power from the view of physics. I suppose that mind has power only with the aim to show why the geometric point should be taken as an object of mental imagery and concentrative meditation.

everybody visualizes them in different ways. The geometric point is the object that is visualized and should be visualized in the same way by all people.

4.4 Roberto Assagioli's Act of Will

Roberto Assagioli's act of will includes the following stages:

1. The purpose, aim, & goal, based on evaluation, motivation, and intention
2. Deliberation.
3. Choice and Decision.
4. Affirmation: the Command or "Fiat" of the Will.
5. Planning and Working Out a Program.
6. Direction of the Execution.[292]

According to the mentioned stages, in order to carry out the described further experiment in consciousness, the act of will may include the following:

1. The aim of carrying out three stages of the experiment in consciousness should be put forward.
2. It is necessary to think about it carefully having taken into account all possible advantages and disadvantages.
3. If the choice is to conduct the experiment, all efforts should be directed towards its performing.
4. The confirmation should be done out that it is possible to carry out the experiment successfully.
5. A program of preparation and doing the experiment including different details should be worked out.
6. Direction of the execution, another universe for the streams of consciousness, should be clearly understood.

4.5 The Experiment in Consciousness (Part 1)[293] [294]

[292] Assagioli R., The Act of Will, Penguin Books 1974, p.134
[293] The process of carrying out the experiment is risky. It may cause harm to a person's health or provoke death.
[294] Part 2 of the experiment in consciousness is described in Chapter 5.

The described experiment in consciousness is not a so called "thought experiment" which is the imaginative one. Surely a "thought experiment" could be carried out in this case; and it would help in understanding the experiment. I am sure that this experiment is a real one. It means the stream of person's consciousness could flow inside a virtual Planckian black hole, and this task should be carried out by means of mind.

I do not know the sufficient conditions for carrying out the experiment. According to Heisenberg Uncertainty Principle, it is not possible to know these conditions.

The main idea of the experiment is to transfer the equilibrium point of the consciousness inside of the Planckian black hole.[295] It is clear that at the beginning the equilibrium point of the consciousness could be inside only for a short period of time, probably a few hours. A few years should pass before it could be there constantly.

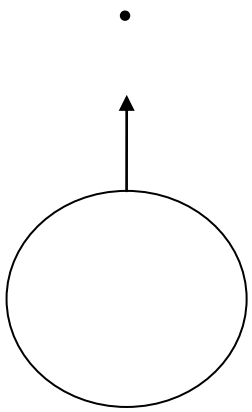
Just after being inside the Planckian black hole for a short period of time, it would be the reverse process, during which the equilibrium point of the consciousness will go sharply in the opposite direction and would be at the lower level comparing to the level before the experiment. But it would be at this level for a short period of time, probably a few hours too. Then it would return to the level a little bit higher than it was before the experiment. A few years should pass before the equilibrium point will be inside the Planckian black hole constantly.

The experiment in consciousness deals with the mental imagery of the geometric point. The geometric point is taken in a peculiar way. It is taken on the ray going from the person perpendicularly to the surface of the Earth.[296] The point is visualized as the point full of power, love, light, and wisdom.

[295] The equilibrium point of consciousness is the point to which the person's consciousness could be mathematically approximated: if we could calculate "the amount" of consciousness above and below the point, these quantities are equal; if we could calculate "the amount" of consciousness from the right side of the point and from the left side of the point, these quantities are equal too.

[296] It is proved in Chapter 4 why the geometric point is taken in such specific way.

Graph 1

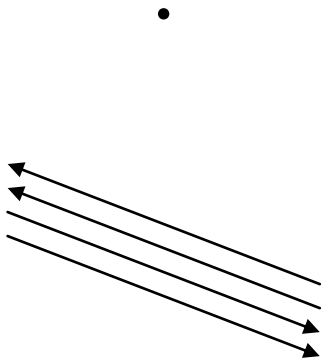


The Earth as a globe and the direction of the geometric point visualization

In fact, it will be the mental imagery of the virtual space that can be compared with a geometric point.

The concentration in the experiment is carried out on the singular desire to reach a horizon of the Planckian black hole. Even more, the individual stream of consciousness should flow inside the Planckian black hole. The black hole itself should be visualized as a geometric point.

Graph 2



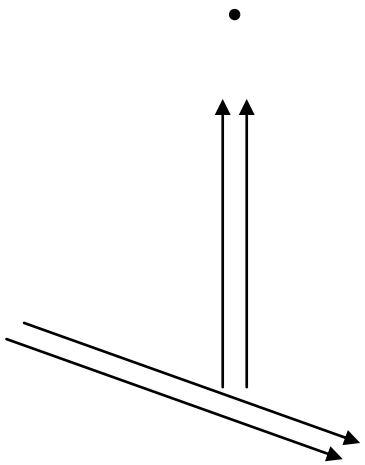
Streams of consciousness and a geometric point as an object of mental imagery

Individuals should empty their mind of thoughts with the exclusion of the thought about their streams of consciousness flowing inside the Planckian black hole. The mind should be empty

of dogmatism. Individuals should hold the feelings of joy, love to everybody and everything, and fully developed will.

This may result in the stream of consciousness beginning to flow continuously to the visualized geometric point.

Graph 3



The stream of consciousness begins flowing to the visualized geometric point

The stream of consciousness will flow towards the horizon of the Planckian black hole and later inside it. This stream of consciousness will next result in near-death experiences. The mystical experience begins at the horizon of the black hole and later inside it.[297]

The beginning of transferring consciousness seems to be similar to the described phowa in Tibetan Buddhism. The main difference is that consciousness should be transferred through the entire fields of consciousness and mind in the case of the experiment.

4.6 One-Pointedness of Mind in Buddhism

The conception of "one-pointedness" of mind is used in Buddhism. "The Complete Illustrated Encyclopedia of Buddhism" gives the definition of the term "one-pointedness concentration" as "a state of deep trance, intense concentration and higher consciousness".[298]

[297] The description of the experiment will be continued in Chapter 5.

Buddhist and philosopher Bhante Henepola Gunaratana states: "Concentration is often called one-pointedness of mind. It consists of forcing mind to remain on one static point."[299] Bhante Gunaratana describes concentration having used the analogy of a lens:

> Parallel waves of sunlight falling on a piece of paper will do no more than warm the surface. But the same amount of light, when focused through a lens, falls on a single point and the paper bursts into flames. Concentration is the lens. It produces the burning intensity necessary to see into the deeper reaches of the mind. Mindfulness selects the object that the lens will focus on and looks through the lens to see what is there.[300]

The main differences between the one-pointed concentration in Buddhism and concentration in the experiment in consciousness are the following. Firstly, I take a Planckian black hole as an object of the concentration with its mental imagery as a geometric point. I have not found any evidence that a Planckian black hole is taken as an object of meditation in Buddhism. Secondly, the object of concentration is taken in a specific way. Thirdly, the task of mind in my case is to transfer consciousness inside a model of the geometric point.

4.7 Cosmology of a Geometric Point

Several philosophers and scientists have taken a geometric point into consideration, including consideration in cosmology. Gottfried Leibnitz, Alfred North Whitehead, P. Teilhard de Chardin, D. Bohm, S. Hawking, P. Zizzi, and Ralph Abraham and are among them.

4.7.1 Gottfried Leibnitz's Monads

Gottfried Leibniz's monad is partly similar to A. Whitehead's definition of the geometric point. "1. Monads, which I am going to talk about here, are nothing other than simple substances which make up compounds. By 'simple' I mean 'without parts'".[301] At the same time, each two monads are different.

"63.The monad to which a body belongs is either an entelechy or a soul. If it belongs to an entelechy, the combination can be called a living being; and if it belongs to a soul, the combination can be called an animal."[302] [303] G. Leibniz stated that monads may refer to human beings, and that

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[298] The Complete Illustrated Encyclopedia of Buddhism, Consultant Editor: Ian Harris; H. Varley, P. Connolly, S. Travagnin, Hermes House, an imprint of Anness Publishing Ltd 2011, p. 250.
[299] B. Henepola Gunaratana, Mindfulness in Plain English, Wisdom Publications 2002, p. 149.
[300] Ibidem, p. 150.
[301] G. Leibniz, The Monadology, Translation by George MacDonald Ross 1999, [Online]. Available at http://www.philosophy.leeds.ac.uk/GMR/moneth/monadology.html
[302] Ibid.

entelechies and souls derive from the monads. Monads are the most essential constituents of human beings.

"In organising the whole, God paid attention to each part, and in particular to each monad."[304] G. Leibniz considered monads to be the most important units. "Each monad is a mirror of the universe in its own unique way…"[305] According to G. Leibniz, monads are the substances, the most important for God substances which represent our universe.

G. Leibniz wrote about the possibility of the infinite number of universes "…there is an infinity of possible universes among God's ideas…" Each monad represents the whole universe, our universe "in its own unique way".

4.7.2 Alfred North Whitehead's Geometric Point and Cosmology

Alfred North Whitehead defined a point in the following way: "A point is a set of mutually equivalent abstractive classes such as that (1) it contains all the abstractive classes equivalent to its members, and (2) its members are punctual."[306] Punctual members mean to be "absolute prime."

In the course of classic (non-Whitehead's) geometry, the point is undefined. It is usually written that it is a zero-dimensional figure, i.e. it does not have length, area, or volume.[307] Point is ultimate in classic geometry.

Having taken into account the above mentioned definition of a geometric point based on the classical geometry, Alfred North Whitehead's geometry is sometimes called as point-free geometry. At the same time Whitehead's geometric point marks ontologically space, objects, classes.

Alfred North Whitehead situated cosmology to be midway between physical science and metaphysics. "Cosmology desires to discuss the world of perception in terms sufficiently general to be at once identified with metaphysical theory and sufficiently specific with physical theory."[308]

He mentioned extensiveness to be the most usual fact of cosmology, to be more exactly its extensive continuity. The point is defined in terms of extensiveness as well.

A point is considered by Alfred North Whitehead to be as "a route of diminution."[309]

4.7.3 Pierre Teilhard de Chardin's Omega Point

Pierre Teilhard de Chardin wrote about "the birth of some single centre from the convergent beams of millions of elementary centres dispersed over the surface of the thinking earth". [310] This

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[303] Animal is used in the meaning of a living creature that is not a plant, including people.
[304] Ibid.
[305] Ibid.
[306] Alfred North Whitehead Lectures. Notes taken by Edwin L. Marvin. A joint publication of Process Studies Supplements and the Whitehead Research Project, 2009, p.135
[307] Geometry Glossary, [Online]. Available at http://library.thinkquest.org/2647/geometry/glossary.htm
[308] Alfred North Whitehead Lectures. Notes taken by Edwin L. Marvin. A joint publication of Process Studies Supplements and the Whitehead Research Project, 2009, p.137
[309] Ibid., p.140

centre was named as Omega Point. He mentioned that Omega Point "can only be a distinct Centre radiating at the core of a system of centres; a grouping in which personalization of the All and personalisations of the elements reach their maximum, simultaneously and without merging, under the influence of a supremely autonomous focus of union".[311] This centre was created under the influence of the factors of non-miscibility of consciousness and the mechanism of unification.

Pierre Teilhard de Chardin mentioned about the main attributes of Omega Point which are autonomy, actuality, irreversibility, and transcendence. He indicated that it is the Omega Point where "something in the cosmos escapes from entropy, and does so more and more". [312]

4.7.4 David Bohm's Origin of the Universe and "Moments".

David Bohm wrote about a geometric point (in terms of A. Whitehead) or about the approximation to a geometric point (in terms of classic geometry) in cosmology.

He took into the consideration the theory that "…the universe as we know it originated in what is almost a single point in space and time, from a "big bang" that happened some ten thousand million years ago."[313] Therefore, according to David Bohm, it is not possible to understand our universe independently. And a great role in this understanding should be paid to black holes. He compared the "big bang" with a "little ripple" on the ocean. Our universe "can be treated correctly as a sub-totality, at least to a point."[314]

David Bohm, as well as Alfred North Whitehead, wrote about the extensiveness of a region, including very small. "We propose instead that the basic element be a moment which, like the moment of a consciousness, cannot be precisely related to measurements of space and time, but rather covers a somewhat vaguely defined region, which is extended in space and has duration in time."[315] He compared his moments with G. Leibniz's idea of monads. The similar feature is that both moments and monads reflect the whole in their own way. The difference is G. Leibniz's monads are permanent; they are not the moments.

4.7.5 Stephen Hawking's Singularity

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[310] P. Teilhard de Chardin, The Phenomenon of Man, Collins Fontana Books 1965, [Online]. Available at http://ebookbrowse.com/the-phenomenon-of-man-pierre-teilhard-de-chardin-pdf-d275169311, p. 285
[311] Ibid., p. 288
[312] Ibid., p.298
Entropy is connected with the arrow of time, thus it may be inferred that there is no arrow of time within the Omega Point.
[313] D. Bohm, The Enfolding-Unfolding Universe and Consciousness, [in:] Science and Consciousness. Two Views of the Universe, ed. by Michel Cazenave, Pergamon Press 1984, p. 76
[314] Ibid., p. 87
[315] Ibid., p.83

Stephen Hawking has written about the origin of time "The beginning of time would have been a point of indefinite density and infinite curvature of space-time".[316] This point is called as singularity. According to Penrose-Hawking singularity theorems, singularity means either space singularity, where matter is compressed to a point, or time singularity, where light rays come from an area of infinite curvature.

Stephen Hawking has mentioned that "all the known laws of science would break down at such a point".[317] Having predicted the singularities, general relativity foresees its own downfall.[318] Therefore, general relativity cannot be used at these small scales.

Roger Penrose has proposed "the cosmic censorship hypothesis", according to which singularities occur only in the area, like black holes. The black holes are hidden from outside the world by an event horizon.[319] Stephen Hawking has mentioned that there are solutions of the general relativity equations, according to which the astronaut could see a singularity.[320]

Stephen Hawking has stated about the possibility of the big crunch existence for our universe in future. It will be the end of time.[321] Even if the big crunch does not appear, there will be "singularities in any localized regions that collapsed to form black holes." Going into the mentioned singularities will be the end of time.

According to my point of view, Stephen Hawking's cosmology of a geometric point is similar to David Bohm's one. The main differences are the following. The model of singularity has been worked out by Stephen Hawking and Roger Penrose. David Bohm considers the geometric point model to be the origin of the universe, while Stephen Hawking considers the geometric point model "singularity" to be only the origin of time, not the origin of universe.

4.7.6 Planckian Black Hole

Paola Zizzi has written that at the Planck scale "the familiar notion of an event like a point in a four-dimensional manifold loses its meaning".[322] Similar to Alfred Whitehead, Paola Zizzi has mentioned about the extensiveness of the point, but only at the Planck scale.[323]

She has also mentioned that Planckian black holes are the quantum objects with the extremely small sizes: "The surface area of a virtual (Planckian) black hole is one pixel (one unit of Planck area), and by the (quantum) holographic principle, it encodes one qubit of information."[324]

[316] S. Hawking, A Brief History of Time, Bantam Books 1998, p. 68
[317] Ibid., p. 68
[318] Ibid., p. 34
[319] Ibid., p. 47
[320] Ibid., p. 47
[321] Ibid., p. 94
[322] P. Zizzi, Consciousness and Logic in a Quantum-Computing Universe, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Springer 2006, p.472
[323] Ibid., p. 472
[324] Ibid., p. 472

Paola Zizzi has mentioned that a Planckian black hole, which is a virtual object, could be considered as "eternal" with the age equal to the square root of the universe.[325]

Planckian black holes are similar to G. Leibniz's monads which are also permanent. Firstly, both monads and Planckian black holes reflect our universe. Secondly, they deal with a person's soul or consciousness.

4.7.7 Ralph Abraham's Omega Limit Critical Point

Mathematician and systems theorist Ralph Abraham has worked out the model of omega limit critical point in a dynamical system.[326] He used the idea of Pierre Teilhard de Chardin's Omega Point and developed it.

It has been supposed that a dynamical system has a critical point. Also it has been supposed that this critical point is the limit set of some trajectories. The plane inside the trajectories forms inset of the critical point. Other trajectories go from the limit point. The plane inside the trajectories forms outset of this critical point.

In Ralph Abraham's words, omega limit refers to the future asymptotic behaviour. Also some trajectories may never arrive to or depart from the critical point; they could pass close to the point.[327]

All the mentioned cases give us strong evidence that a geometric point has found its important value in both physical and metaphysical cosmology.

4.8 Approximation to a Point in Tibetan Buddhism and Hypnosis.

Approximation from a circle to a point has been traced in Buddhism in the diagrams of mandalas. Also it has been noticed in the concentric circles which are used for self-hypnosis.

4.8.1 Mandalas in Tibetan Buddhism

"The Complete Illustrated Encyclopedia of Buddhism" gives the definition of the "mandalas" as "sacred diagrams, usually circular and full of complex, colourful symbols and images that represent the universe".[328] Mandala is the Sanskrit word which means "circle"; the circle is "cosmic" or "sacred" one.

[325] Ibid., p. 473
[326] R. Abraham, C. Shaw, Dynamics - the Geometry of Behavior, Addison-Wesley Publishing Company 1992
[327] Ibid., p. 43
[328] The Complete Illustrated Encyclopedia of Buddhism, Consultant Editor: Ian Harris; H. Varley, P. Connolly, S. Travagnin, Hermes House, an imprint of Anness Publishing Ltd 2011, p. 104.

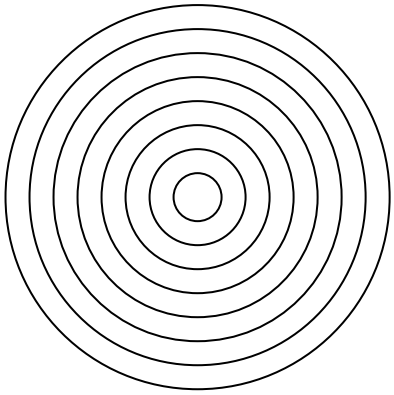
As it has been mentioned in *"The Complete Illustrated Encyclopedia of Buddhism"*, mandalas are used for meditation: "Devotees visualize themselves crossing the mandala's outer circles, which represent the external world, and following the path to the internal gateways to approach the deity. They meditate on each guardian figure and bodhisattva, then on central Buddha or bodhisattva".[329] Mandalas are used during rituals of initiation for monks too; they represent the universe with the Buddha in the centre.

The mandalas are constructed or painted in the way that the visualization of the realms inside them slides to the centre of mandalas, i.e. to one-pointed concentration.

4.8.2 Concentric Circles in Hypnosis

Concentric circles are circles that have the centers in the same point.

Graph 4



Concentric circles

Concentric circles are used in self-hypnosis. The visualization of circles in self-hypnosis is carried out from the bigger circles to lesser ones. Therefore, the mental imagery is approximated from the circles to nearly a point.

4.9 Time Dilation

[329] Ibid., p. 105

Bruce Rosenblum and Fred Kuttner believe that science is based on inductive reasoning which may be wrong: "The only argument for accepting its [inductive reasoning] validity is that it has worked (in particular cases) in the past."[330]

Let us consider the case of time dilation. Time dilation is "a slowing of the flow of time". [331] In other words, it is a difference of passed time for two people.

According to Einstein's relativity theory, if astronauts travel in a spacecraft at nearly the speed of the light, their time passes much more slowly compared to time of those stationary on Earth. Following from this, it is possible, for example, for me to be younger than my son or daughter physically and biologically. If it becomes possible to travel at this speed, inductive reasoning concerning the case that I have to be older than my children in physical and biological sense will not work. This stands as an example of time dilation due to relative motion.

Another case involves gravitational time dilation. In this case, time dilation is based on a person's consciousness flowing inside and outside of a Planckian black hole and is one of the most important results of the experiment in consciousness. Therefore, I am sure, that nowadays more attention should be paid to practical experiments than inductive reasoning.

The theories and practice discussed in the thesis hold that time dilation is possible now. I do not know if we knew any examples of time dilation in past. Nonetheless, such events should occur in the nearest future, perhaps within twenty years.

As of yet, the interior reality of Planckian black holes remains unknown. But it is quite evident that distribution of a person's consciousness will be outside and inside a singularity. If the ratio of the distribution of the consciousness inside the Planckian black hole to an individual's consciousness is one to four at any given moment of time, the time dilation will be "a" years in the period of "4a" years. For example, if the period is twelve years, time dilation will be three years. If the ratio is one to two, the time dilation will be "b" years in the period of "2b" years, so if the period is twelve years, time dilation will be six years. If the ratio is three to four, the time dilation will be "3c" years in the period of "4c" years, so if the period is twelve years, time dilation will be nine years.

Case 4

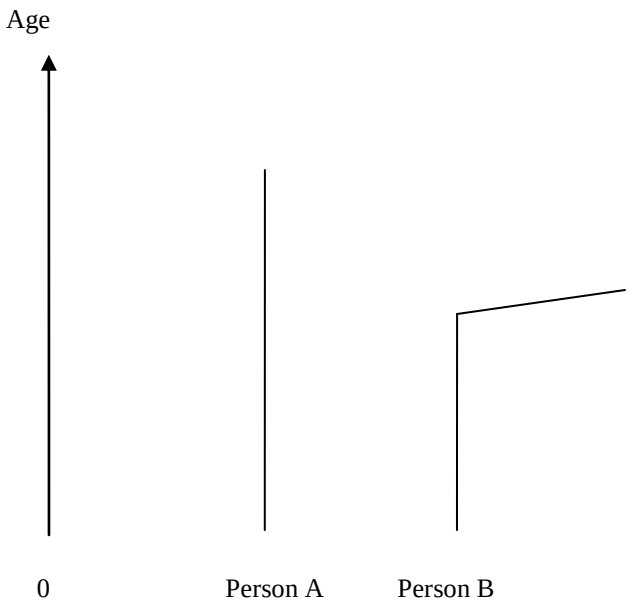
Let us take into account the case in which the average time dilation is nine years in the period of twelve years. We will compare two people which will be of the same age in 2020. Let us take two people who will be thirty in 2020. The first person (person B) will carry out the experiment in consciousness in 2020; another person (person A) will not have carried the mentioned experiment in consciousness by 2032. Let us suppose that in the period of 2020-2032 the average

[330] B. Rosenblum and F. Kuttner, Quantum Enigma. Physics Encounters Consciousness, Oxford University Press 2011, p. 190

[331] K. Thorne, *Black Holes and Time Warps. Einstein's Outrageous Legacy,* W W Norton & Company 1994, p. 558

time dilation of the former will be nine years. It means that this person will be 33 in 2032. The age of the latter will be 42.

Graph 5

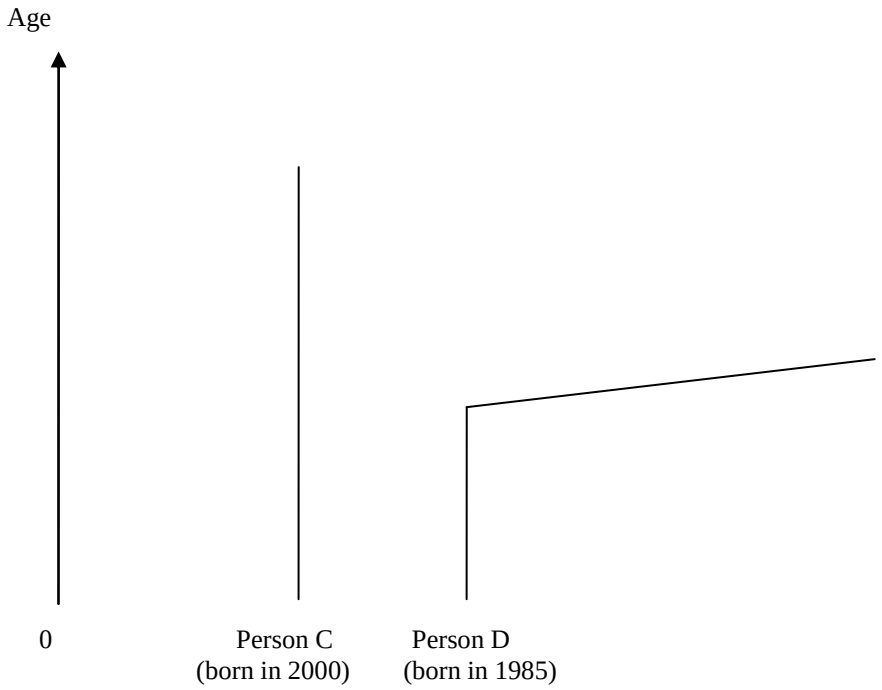


Age in the year of 2032

Case 5

Let us take into account a case, when the average time dilation is forty years in the period of fifty years since having done the experiment in consciousness successfully by a person D in 2015. Person C then has not and will not carry out the experiment in consciousness. Person D was born in 1985; and the person C was born in 2000. We can calculate that person D will be 40, and person C will be 65 in 2065.

Graph 6



4.10 Brief Conclusions

The original experiment in consciousness has been provided. This experiment is carried out by mind. The main task that should be done is transferring of consciousness (part of it) inside a Planckian black hole.

Time does not run inside the Planckian black hole. Thus, we will deal with a person's gravitational time dilation. It means that since the time a person has carried out the experiment in consciousness his or her time passes much more slowly compared to time of another person, who has not done the mentioned experiment in consciousness. As a result, it may happen that the former person may not become older with the age.

Chapter 5

Evolution from a Human Being to a Post-Human

5.1 A Person's Evolution

Sometimes people state that there is only one theory of evolution. They usually mention Charles Darwin's or neo-Darwinian theory of evolution. Both Charles Darwin's and neo-Darwinian theories are not proved to be true. Other theories of evolutions which are worth considering include the following ones.

- The forgotten Jean-Baptiste Lamarck's theory of evolution. The theory stressed the importance of acquired characteristics.
- Richard Maurice Bucke's evolution of mind and consciousness. The main attention has been devoted to the description of the three stages of consciousness including cosmic one.
- Teilhard de Chardin's complex theory of evolution. The theory is based on Charles Darwin's one, but it has some amendments. Also it includes the evolution of mind and consciousness.
- Rupert Sheldrake's theory of morphic resonance and morphogenetic fields. The theory is based on the influence on the organism from outside.
- Sri Aurobindo's evolution of consciousness. The person evolves from the mental type to the type of "fully consciousness being".
- Erwin Laszlo's evolution of consciousness. The evolution is based on the altered states of consciousness.

5.1.1 P. Teilhard de Chardin's Evolution

P. Teilhard de Chardin mentioned that for a lot of people evolution is only an old Darwinian conception of transformism, which states that living beings originate by the changes of some existing forms of living matter. While working out a theory of evolution, it is necessary to take into account different subjects, such as physics, chemistry, history of religions, mathematics.[332]According to him the evolution is biological, psychological, and spiritual.

According to P. Teilhard de Chardin, a person himself or herself might and should take part in the process of evolution.

5.1.2 Rupert Sheldrake's Analysis of Theories of Evolution

[332] P. Teilhard de Chardin, The Phenomenon of Man, Collins Fontana Books 1965, [Online]. Available at http://ebookbrowse.com/the-phenomenon-of-man-pierre-teilhard-de-chardin-pdf-d275169311, p. 239

Rupert Sheldrake analyzed theories of evolutions and provided his ideas about the evolution in the mentioned earlier book "The Science Delusion, Freeing the Spirit of Enquiry"[333].

At a time when Charles Darwin lived, people usually believed that acquired characteristics could be inherited. Jean-Baptiste Lamarck believed that it was true, and used it in his theory of evolution. His theory was published a half century before Charles Darwin's one. Charles Darwin also believed in it. Rupert Sheldrake has mentioned that Jean-Baptiste Lamarck's well-known example was the giraffe. Its long neck was obtained because of the habit to eat leaves on the trees; it was obtained through a lot of generations.

Nobody knew how to explain the acquired characteristics. Charles Darwin explained it by means of his "pangenesis" hypothesis. "He proposed that all the units of the body threw off tiny 'gemmules' of 'formative matter', which were dispersed throughout the body and aggregated in the buds of plants and in the germ cells of animals, through which they were transmitted to the offspring."[334]

The neo-Darwinian theory of evolution differed from the Darwin's one in that it denied the inheritance of acquired characteristics. Only genes were taken into account. Only in 1990-ies the inheritance of acquired characteristics began to reappear. It was called as "epigenetic inheritance".[335] Epigenetic inheritance occurs in plants, animals, and human beings.

Epigenetic inheritance as well as genes has not challenged the materialistic assumption that inheritance is material. But morphogenesis, the biological process that causes an organism to develop the shape, and instinctive behaviour have not been explained.

5.1.3 Rupert Sheldrake's Morphic Resonance and Morphogenetic Fields

Rupert Sheldrake thinks that the only way of explanation of acquired characteristics inheritance is by means of systems properties.[336]

Morphic resonance is "invisible influence on the organism coming from outside it". It occurs from previous similar organisms. Morphogenetic fields have the inheritance by morphic resonance from the mentioned organisms.[337]

In Rupert Sheldrake's words, the hypothesis of morphic resonance is testable experimentally. If animals, like squirrels, learn something new, for example a trick, in one place, the more squirrels learn it, the easier it will be to learn something new for the squirrels of the same species in another part of the world.

The inheritance by morphic resonance is not material, but it is physical from the point of view that it is not supernatural, it is natural.[338]

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[333] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012, Chapter 6.
[334] Ibid., p. 175.
[335] Epigenetic means above genetics.
[336] This idea coincides with the idea of Ervin Laszlo's fields in systems philosophy.
[337] R. Sheldrake, The Science Delusion, Freeing the Spirit of Enquiry, Coronet 2012, p.178

Rupert Sheldrake's idea of morphic resonance and morphogenetic fields could be used in order to work out the model of the evolution of consciousness. Peter Russell has argued:

> Applying Sheldrake's theory to the development of higher states of consciousness, we might predict that the more individuals begin to raise their own level of consciousness, the stronger the morphogenetic field for higher states would become, and the easier it would be for others to move in that direction.[339]

In Peter Russell's words, the reaction could be chain, and a great number of people would transit to a higher level of consciousness.

5.2 The Evolution of Consciousness

The evolution of consciousness has been described in the works of Richard Maurice Bucke, Sri Aurobindo, Teilhard de Chardin, Ervin Laszlo, Rupert Sheldrake.[340]

5.2.1 Sri Aurobindo's Evolution of Consciousness

Sri Aurobindo pointed out his ideas bout the evolution of consciousness. According to him, the evolution of consciousness is the main aim of a person's existence. Consciousness should be delivered "out of its thick and tenebrous prison". It should be delivered slowly, in extremely small amounts. The person should evolve from the mental type to the type of "fully consciousness being". A man is the crest of the evolutionary process. The evolution will change from unconscious stage to its conscious one, i.e. the person will know how to carry it out and what to expect.[341]

In Sri Aurobindo's words, the change of consciousness will be the next evolutionary transformation. And the consciousness itself with his own mutation will cause the necessary changes in the body of a man.

Firstly, super-consciousness or cosmic consciousness will appear only in a few evolved human beings. Only then other people will acquire it.

Sri Aurobindo wrote: "… New Consciousness has itself the nature of infinity: it brings to us the abiding spiritual sense and awareness of the infinite and eternal with a great largeness of the nature and a breaking down of its limitations; immortality becomes on longer a belief or an

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[338] Ervin Laszlo has also written about morphogenetic fields including Rupert Sheldrake's one. These fields were entitled as biological fields.
[339] P. Russel, The Global Brain Awakens: Our Next Evolutionary Leap, Global Brain Inc., USA 1995, p. 267
[340] Richard Maurice Bucke's cosmic consciousness was described in the details in Chapter two
[341] S. Aurobindo, The Future Evolution of Man, collation of the works by Saint-Hilaire, Mountain Man Graphics, Australia 1996, [Online]. Available at http://www.mountainman.com.au/auro.html

experience but a normal self-awareness".[342] The peace and joy of the infinite will be concrete and constant in the new evolved beings.

The consciousness itself will give "the supramental transformation"; there will be the appearance of "supermind". According to Sri Aurobindo, it is difficult to imagine what kind of supermind will appear. The greatest amount of human mind is impossible for understanding by animals (non-human); similarly, supermind is beyond its understanding by human beings. Its qualities are hidden by the nature, but they will be revealed.

The emergence of cosmic consciousness in a person will result in "a total liberation of soul, mind, heart and action, a casting of them all into the sense of the cosmic self and divine reality." Consciousness will be integrated with the consciousness of other beings, "with universal self and force and action".[343]

5.2.2 Pierre Teilhard de Chardin's Evolution of Mind and Consciousness

Pierre Teilhard de Chardin has expressed his ideas about the evolution of consciousness in the book *"The Phenomenon of Man"*.[344]

He has written:

> In short, the further the living being emerges from the anonymous masses by the radiation of his own consciousness, the greater becomes the part of his activity which can be stored up and transmitted by means of education and imitation. From this point of view man only represents an extreme case of transformation. Transplanted by man into the thinking layer of the earth, heredity, without ceasing to be germinal (or chromosomatic) in the individual, finds itself, by its very life-centre, settled in a reflecting organism, collective and permanent, in which phylogenesis merges with ontogenesis. From the chain of cells it passes into the circumterrestrial layers of the noosphere.[345]

According to Pierre Teilhard de Chardin, a person takes part in the evolution by means of development of his or her consciousness. He mentioned: "Evolution = rise of consciousness, Rise of consciousness = Union effected."[346] Evolution of consciousness, in Pierre Teilhard de Chardin's words, is carried out when it is raised on higher level and in unity with the consciousness of other people.

5.2.3 Ervin Laszlo's Evolution of Human Consciousness

[342] Ibid.
[343] Ibid.
[344] P. Teilhard de Chardin, The Phenomenon of Man, Collins Fontana Books 1965, [Online]. Available at http://ebookbrowse.com/the-phenomenon-of-man-pierre-teilhard-de-chardin-pdf-d275169311
[345] Ibid., p. 247
[346] Ibid., p. 266

Ervin Laszlo has expressed his ideas about the next evolution of human consciousness in the book *"Science and the Akashic Field, An Integral Theory of Everything"*[347]

Ervin Laszlo has mentioned that our consciousness is not permanent; it has been developing for a long period of time. During the last fifty thousand years, a person's body has not changed in a great deal, but consciousness changed a lot. Human consciousness has evolved from simple forms and will evolve further if human beings survive.

Progressive evolution of consciousness and its various levels were thought to be likely happen in the future by a lot of traditions. Ervin Laszlo has written:

> …Some Native American cultures (the Mayan, Cherokee, Tayta, Xingue, Hopi, Inca, Seneca, Inuit, and Mapuche traditions) hold that we are presently living under the Fifth Sun of consciousness and are on the verge of the Sixth Sun. The Sixth Sun will bring a new consciousness and with it a fundamental transformation of our world.[348]

The evolution of consciousness is "from the ego bound to the transpersonal form". Transpersonal consciousness is able to receive more information than today's consciousness. Transpersonal consciousness might provide better abilities to understand feelings and problems of other people. It would promote greater sensitivity not only to people, but also to all biosphere including animals and plants. It would change the world and create subtle contacts with all cosmos.

It has been stated:

> A society hallmarked by transpersonal consciousness is not likely to be materialistic and self-oriented; it would be more deeply and widely informed. Under the impact of a more evolved consciousness, the system of nation-states would transform into a more inclusive and coordinated systems with due respect for diversity and the right of all peoples and cultures to self-determination… Societies would become more peaceful and sustainable, offering a fair chance of life and well-being to all their members, living and yet to be born.[349]

According to Ervin Laszlo, evolution could not be fully predictable. His conclusion is the following: if people do not destroy the environment, "the dominant consciousness of a critical mass" would evolve from the ego bound one to transpersonal.

5.2.4 Rupert Sheldrake's Evolution of Consciousness

[347] E. Laszlo, Science and the Akashic Field, An Integral Theory of Everything, Inner Traditions, Rochester, Vermont 2004, p. 151-153
[348] Ibid., p. 151
[349] E. Laszlo, Science and the Akashic Field, An Integral Theory of Everything, Inner Traditions, Rochester, Vermont 2004, p. 153

According to Rupert Sheldrake, the majority of religions are based on the idea that a person's consciousness plays an important role in the destiny of people and in the world. People have the possibility to "participate" in God, cosmic consciousness, or divine life. Religions began with the direct connection through ancient Indian saints, Gautama the Buddha, Hebrew prophets, Jesus the Christ, and Muhammad.

Hinduism and Buddhism state that lives continue in endless repetitive cycles. Some persons could escape them by having established a connection with the universal mind, spirit. Rupert Sheldrake has written:

> Neither Hinduism nor the original form of Buddhism are intrinsically evolutionary; indeed, in Hindu cosmology, in each cosmic cycle there are four ages, and we are currently in the last, the kali yuga, a time of strife and discord, when civilization degenerates and people are as far as possible from God. By contrast, Tibetan Buddhists see a progressive process: enlightened beings come back in new incarnations to work for the liberation of all sentient beings. They will continue to do so until all have been liberated from the cycles of birth and death.[350]

Some questions have been put forward to be answered in the future. These questions deal with evolution of consciousness as a goal of evolution, its development in the universe, and probable contacts of our consciousness with other minds in the universe. These are the questions which at present moment could be answered neither by science nor by religions.

In my opinion, a person's evolution could and should be understood by means of the evolution of his or her consciousness. The task of a person is to distribute it more and more inside a Planckian black hole. It is not possible for us to know the situation with a person's consciousness inside singularities. One of the suggestions is that it flows to another universe.[351]

As far as a person's mind is the only agent capable to influence her or his consciousness, mind should be developed in a proper way.

5.3 Idea of a Post-Human

A post-human is another stage in a development of a person. Some theories of evolution have taken it for granted that a human being has evolved from an animal (non-human). Analogically, it may be inferred that a post-human should evolve from a human-being. I have

[350] Ibid., p. 154
[351] In the case another universe exists.

considered the idea of a post-human developed by philosopher Asher Seidel.[352] Max More's and Nick Bostrom's ideas of a post-human and becoming a post-human have been criticized.

The term "god" may be used as a synonym to the word "post-human".[353] In fact, both a god and a post-human are used to represent the idea of the further development of a person that he or she could not be considered as a human being anymore.

5.3.1 Max More's Idea of a Post-Human and Its Criticism

Philosopher Max More has described his idea of a post-human and becoming a post-human in the paper *"On Becoming Posthuman"*.[354] According to him, the transition from a human being to a post-human could be defined both physically and memetically.[355] Max More thinks that physically a person will become a post-human only he or she has made such great modifications to his or her inherited genetics, physiology, neurophysiology, and neurochemistry, that he or she would not be classified with homo sapiens anymore. He thinks that memetically, a post-human might have a different motivational structure from a human or at least he or she could make some modifications such as transforming sexual orientation, control over emotions by means of neurochemistry.

Max More has emphasized the importance of the merging of a human being and machine. He has mentioned that machines are more self-modifying and intelligent nowadays and the new fields such as artificial intelligence, intelligent agents, neural networks etc. have appeared. People begin include technologies into themselves such as pacemakers, artificial joints, contact lenses etc.

At the same time, he believes that computers could be implanted in brains of human beings, and it will be able for them to have extra cognition. In my opinion, this point of view is wrong. The machines are developed by people. Machines, computers etc. will make the life of people easier. But they will not give any new cognition, and they will not assist in transhumanizing from a human being to a post-human.

Max More predicted that at the beginning of our century people would "use engineered viruses to alter the genetic structure of any cell, even adult, differentiated cells". According to him, molecular nanotechnology would give people the complete control of the structure of matter. It will allow people to construct everything, atom by atom. He thinks that it would be possible to construct people's bodies. The result of these attempts would be the abolition of aging and the majority of involuntary death.

The beginning of our century has shown that Max More was absolutely wrong. There are no any signs of construction of people's bodies in general. It seems that it is impossible at all. It is not possible to do it by means of replacing, in Max More's words, atom by atom. Consciousness, the

[352] Asher Seidel's conception of a post-human will be depicted in Chapter 6.
[353] A "god" should not be mixed up with the "God" in monotheistic religions.
[354] M. More, On Becoming Posthuman, 1994, [Online]. Available at http://www.maxmore.com/becoming.htm
[355] Memetics is an idea of mental content which is analogy with Darwinian evolution

most essential part of a human being, does not compose of any atoms. He was right that there would probably be the abolition of aging, but the methods by which we could reach it do not have any connection with the materialistic conception.

In my opinion, Max More overestimates the importance of science, and underestimates the importance of religion. People's progression should be carried out on the base of synthesis of science, religion, and philosophy.

5.3.2 Nick Bostrom's Idea of a Post-Human and Its Criticism

Philosopher Nick Bostrom has described his idea of a post-human and becoming a post-human in *"The Transhumanist FAQ"*.[356] According to him, a post-human is a possible future being "whose basic capacities so radically exceed those of present humans as to be no longer unambiguously human by our current standards". It has been mentioned that it does not mean that a post-human will appear after the human era; and it does not mean that it deals with the posthumous existence.

In Nick Bostrom's words, "posthumans could be completely synthetic artificial intelligences, or they could be enhanced uploads,… or they could be the result of making many smaller but cumulatively provided profound augmentation to a biological human." The latter one would need some reconstruction or redesign of a person's organism with the help of some advance nanotechnology or great improving of the organism with the usage of genetic engineering, anti-aging therapies, memory enhancing drugs, cognitive techniques etc.

Nick Bostrom idea of a post-human is similar to Max More's idea of a post-human. The criticism of such ideas has been provided earlier. One more important moment should be added here. As it was mentioned by Rupert Sheldrake (chapter one), a human being's memory is not stored in a human's mind and it does not have any materialistic characteristics. That is why it is clear that the idea of memory enhancing drugs does not have any grounds.

Nick Bostrom does not know how to become a post-human. At the same time, he has given some advice how to increase chances in order to become a post-human:

1. Live healthily and avoid unnecessary risks (such as smoking);
2. Sign up for cryonics;
3. Keep abreast of current research and save some money so that you can afford future life-extension treatments when they become available;
4. Support the development of transhuman technologies through donations, advocacy, investment, or choosing a career in the field; work to make access more universal and to make the world safer from existential risks…;

[356] N. Bostrom, The Transhumanist FAQ – A General Introduction, 2003, [Online]. Available at http://www.transhumanism.org/resources/FAQv21.pdf

5. Join others to help promote transhumanism.[357]

I do not agree completely with the advice 2-5. The main idea of the advice is to save money and spend for the things which do not have any proved value. Probably, this money could have been spent for a person's basic needs or other, more important, things.

5.4 Idea of a Transhuman

Transhuman is a person who is in an intermediary transition from a human being to a post-human. He or she has not become a post-human yet; he or she has acquired some features which do not belong to a human being.

It has been traced that the word "transhumanize" was used by Dante in the phrase "transhumanizing a man into a god".[358] Folk intuitions concerning transhumanizing into a god existed a long time ago.

Pierre Teilhard de Chardin has written:

> In consequence one is the less disposed to reject as unscientific the idea that the critical point of planetary Reflection, the fruit of socialization, far from being a mere spark in the darkness, represents our passage, by Translation or dematerialization, to another sphere of the Universe: not an ending of the ultra-human but its accession to some sort of trans-humanity at the ultimate heart of things.[359]

The link between critical point of the Earth reflection, transhumanism, and "another sphere" of the universe has been noticed here.

Nick Bostrom has defined "transhuman" as "an intermediary form between the human and the posthuman". According to him, "a transhumanist is simply someone who advocates transhumanism".[360]

I will define transhuman as a person who has carried out at least the first stage of the experiment in consciousness successfully and has not become a post-human yet.[361]

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[357] Ibid., p.51-52
[358] R. Maurice Bucke, Cosmic Consciousness. A Study in the Evolution of the Human Mind, Innes & Sons, Philadelphia 1905, [Online], Available at http://djm.cc/library/Cosmic_Consciousness_edited02.pdf , p. 14
[359] P. Teilhard de Chardin, The Future of Mankind, Almanach des Sciences 1951, [Online], Available at http://www.users.globalnet.co.uk/~alfar2/cosmos/TeilhardFutureOfMan.pdf , p. 158
[360] N. Bostrom, The Transhumanist FAQ – A General Introduction, 2003, [Online]. Available at http://www.transhumanism.org/resources/FAQv21.pdf , p. 6
[361] The stages of the experiments in consciousness will be described in this chapter later.

5.5 Model of a Person's Evolution: Becoming a Post-Human

The model of a person's evolution is the following: a human being, a post-human$_1$, a post-human$_2$, a post-human$_3$, and so on (to the infinity). Instead of the names "post-human$_1$", "post-human$_2$", "post-human$_3$" etc, other names, for example such name as a "god$_1$", "god$_2$", "god$_3$" etc could be taken. Post-humans$_1$ are higher in their evolution than human beings and lower than post-humans$_2$. Similarly post-humans$_2$ are higher in their evolution than post-humans$_1$ and lower than post-humans$_3$ and so on.

The model may be a logical continuation of the Darwin's and neo-Darwinian theories of evolution. According to theories, a human being has the origin from earlier apes. Most probably, a human being may become a post-human$_1$ in the course of the evolution.

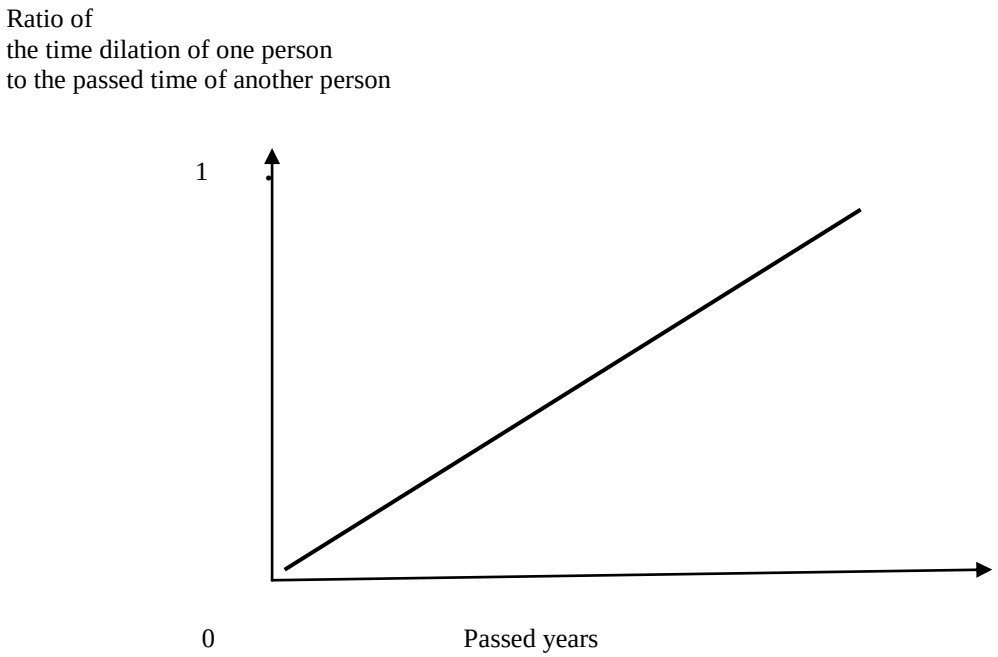
In the case both Darwin's and neo-Darwinian theories of evolution concerning the origin of a human being from earlier apes appear to be wrong, the evolution from a human being to a post-human$_1$ is natural too.

A person has become a post-human$_1$ when his or her time dilation is equal to the passed time of another person for some period of time.

In order to see the practical results, i.e. the person has probably become a post-human$_1$, the mentioned period of time seems should be not less than a few dozens years.

The ratio of the time dilation of the person having carried the experiment in consciousness to the elapsed time of the person not having carried the experiment should increase from year to year if we could calculate time dilation for the period of one year.

Graph 7



From a human being to a post-human$_1$[362]

Since having carried out the experiment in consciousness, a person is in the process of changing from a human being to a post-human$_1$.

It seems it is possible to develop completely from a human being to a post-human$_1$ within a person's life. Time dilation will provide favourable conditions for this.

It is impossible to know about the evolution from post-human$_1$ to post-human$_2$, from post-human$_2$ to post-human$_3$ and so on at present moment. The speculations about the mentioned evolution could be carried out, but they will not have any backgrounds.[363]

5.6 Ervin Laszlo's Advent of Integral Quantum Science

Ervin Laszlo has written that "scientific knowledge grows not only, or even primarily, through the sustained accumulation of observations built into preexisting theories, but through leaps

[362] For sure, the graph of the mathematical function will not be the straight line; it is the approximate model.
[363] Later instead of using the name "post-human$_1$", I will use simply "post-human".

from one fundamental theoretical conception to another".[364] These paradigm shifts happen periodically in history.

It has been mentioned there were paradigm shifts based on theories of Galileo, Kepler, and Newton from the seventeenth to the nineteenth century. There were revolutions in physics, biology, cosmology, and consciousness studies in the twentieth century. At the same time, researchers in the mentioned field have found great anomalies. Ervin Laszlo supposes that another scientific revolution is to happen.

In his opinion, the rise of integral quantum science provides the paradigm shift. The integral quantum science "will embrace quantum physics and quantum biology, as well as quantum cosmology and quantum brain and consciousness research. It will be a transdisciplinary field of research and experimentation applying concepts developed in the microscopic domain across the full range of observed phenomena."[365]

Ervin Laszlo has emphasized two basic concepts that will be base of the integral quantum science of the twenty first century. They are fields and information. The attempt to find out the truth about the cosmic plenum as the base of the observable phenomena will underline the role of different fields in all the scale of the observed phenomena.[366] Science will become more inclusive and succeed in understanding new areas of reality. Information will not only be a form, but also a physical factor that will connect different phenomena.

The main conclusions concerning integral quantum science carried out by Ervin Laszlo are the following.

> …Integral quantum science will penetrate deeper into the domains of reality than the physical, biological and psychological sciences of the twentieth century – below the level of the quanta that populate space-time, to the cosmic plenum that generates the quanta and interconnects the particles and systems built of them. It will also penetrate wider into the cosmos – beyond the spatial and temporal boundaries of this universe, to the metaverse that gave birth to this universe and set its parameters.[367]

According to Ervin Laszlo, the mentioned extensions will be the continuation of breakthroughs to the deeper and wider areas of observation.

5.7 Theory of Multiverse

[364] E. Laszlo, The Connectivity Hypothesis, Foundations of an Integral Science of Quantum, Cosmos, Life, and Consciousness, State University of New York Press 2003, p. 95
[365] Ibid, p. 97
[366] Physical, biological, transpersonal fields have been taken into account.
[367] E. Laszlo, The Connectivity Hypothesis, Foundations of an Integral Science of Quantum, Cosmos, Life, and Consciousness, State University of New York Press 2003, p. 100

Bernard Carr, as well as other scientists, philosophers and thinkers, stated:

"Cosmologists have come to realize that there are many contexts in which our universe could be just one of a (possibly infinite) ensemble of 'parallel' universes in which the physical constants vary. This ensemble is sometimes described as a multiverse."[368] Universes are often compared with the bubbles. "Our observable domain is part of a single 'bubble' which underwent an extra-fast expansion phase at some early time. There are many other bubbles, each with different laws of low-energy physics, so in this case the different universes are spread out in space."[369]

Our universe could be created inside a black hole of maternity university. Similarly new universes could be created inside black holes of our universe.

It is of great importance to find out how our universe may be connected to other universes. Physicists Michio Kaku, Stephen Hawking have written that they are connected by wormholes, the topological invisible spacetime tunnels. [370]

As it was mentioned wormholes could be found at the Planck scale. The energy density at this scale is immense. Ervin Laszlo has mentioned that the energy of the cosmic plenum is equal to 10^{93} kg/m^3. It is much greater than the energy density of the atomic nucleus that is equal to 10^{13} kg/m^3.[371] Paola Zizzi has also written what happens at the Planck scale: "In fact, at the Planck scale, space-time starts to lose its well-known structure, and becomes a marasmus of virtual black holes and wormholes: the "quantum foam". Any attempt at probing space-time at this scale would then lead to outcomes belonging to another universe."[372] The supposition is that virtual black holes would have their corresponding white holes in another universe.

The speculations will be carried out if our consciousness and mind enters another universe, what kind of universe it could be. The first assumption is that it is the universe that gave birth to our universe. Another possibility is that our consciousness and mind creates a new universe. Finally, it is the universe that already existed, the one that did not give the birth to our universe.

5.7.1 White Holes

A white hole is a theoretical object in cosmology which is the reverse of a black hole. A white hole is a region of spacetime from which matter, light etc have the ability to escape. A Planckian white hole, like a Planckian black hole, is associated with a space-time singularity.

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[368] B.Carr, Introduction and overview, [in:] Universe or Multiverse, ed. B.Carr, Cambridge University Press 2007, p.3
[369] Ibidem, p.4
[370] M. Kaku, What Happened before the Big Bang?, Astronomy Magazine: May, 1996, [Online]. Available at http://www.stealthskater.com/Documents/Kaku_02.pdf
[371] E. Laszlo, The Connectivity Hypothesis, Foundations of an Integral Science of Quantum, Cosmos, Life, and Consciousness, State University of New York Press 2003, p. 53
[372] P. Zizzi, Qualia and Quantum Space-Time, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Berlin Springer-Verlag 2006, p.471

This brings in some prospects for symmetry. Exactly, what goes into a black hole into our universe should appear into a white hole in another universe. Our universe could be the result of the white hole explosive expansion. The new universe could also be the result of the mentioned outburst.

5.7.2 Itzhak Bentov's Model of Border between Universes

Itzhak Bentov's model of border between universes consists of a black hole in an old universe in which energy goes in and a white hole in a new universe from which energy goes out:

> As the jet of matter continues to flow out of the white hole, it slows down and begins to be pulled back by the gravity of the original seed, the source in the center. The jet reverses its direction and eventually is drawn back into the seed through the black hole. The gravitational collapse causes matter to become transformed into energy, as it passes from the black to the white hole, and it reemerges from the white hole as a new universe. It is a continuous cycle of birth and death of matter[373]

According to Itzhak Bentov, the white and black holes are not only the points of birth and death of matter, but also the points of the beginning and end of time.

5.7.3 Model of Uniborder

Uniborder[374] is a model of quantum physics system and multiple possible universes theory that combines our universe and another universe or other universes. It consists of the Planckian black hole (our universe), traversable wormhole (the exact border) and Planckian white hole (another universe or other universes). Uniborder is a geometric point model as far as its dimensions are estimated to be so tiny that could be compared with the point.

This model provides the possibility of consciousness flowing through it. When a person's consciousness appears to be at horizon of Planckian white hole, it appears to be in a probable future of our universe.

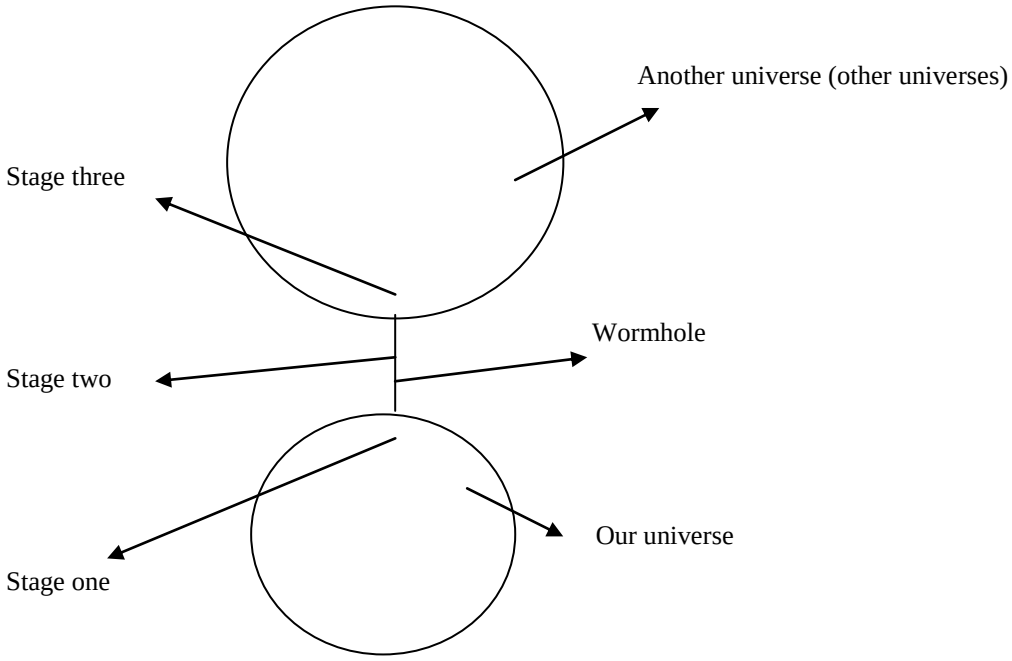
The model of Uniborder is a particular case of Itzhak Bentov's model: its dimensions are tiny, the Planckian black hole and Planckian white hole. Itzhak Bentov did not mention about the wormhole. In my opinion, it was clear for him that it should be.

5.7.4 Stages of Carrying Out the Experiment in Consciousness

[373] I. Bentov, A Brief Tour of Higher Consciousness: A Cosmic Book on the Mechanics of Creation, Destiny Books, Rochester, Vermont USA 2000, p.14
[374] Derivation from the words "universe" and "border"

There are 3 main stages in carrying out the experiment in consciousness. The consciousness continuous flow will reach its first destination in the event horizon of the Planckian black hole (stage one). The middle destination of the consciousness flow is the wormhole (stage two). The final destination of the consciousness flow is another universe or other universes (stage three).

Graph 8



Stages of carrying out the experiment in consciousness

The periods between carrying out different stages of the experiment in consciousness may vary from a few hours to a lot of years.

5.7.4.1 Equilibrium Points of the Consciousness

After carrying out successfully the first stage of the experiment in consciousness, its equilibrium point will be in the event horizon of the Planckian black hole of the Uniborder. It will not be there for a long period of time, probably, for a few hours. After that it will abruptly ascend.[375] Similarly, after the second stage of the experiment, the equilibrium point of the consciousness will be in the traversable wormhole, probably, for a few hours. And, finally, after the third stage, the equilibrium point will be in another universe.

[375] The field of consciousness, described in this chapter later, helps to explain why the equilibrium point of consciousness abruptly ascends.

Now, it becomes clear that there are different cases of performing the experiment in consciousness. One of the cases is when just after carrying out the first stage of the experiment (when the equilibrium point is temporarily in the event horizon of the Planckian black hole), a person does the second stage. And just after the performing the second stage, a person carries out the third stage. It is the most extreme case. The ascending of the equilibrium point of consciousness will be suddenly from another universe to its possible bottom.

The less extreme is case when only two stages of the experiment are performed at once, and the third one later. And, lastly, there is a case when all three stages are performed separately. This case enables to have enough time after carrying out each stage of the experiment in consciousness to ascend the equilibrium point once again to its previous ascended position.

5.7.5 Time Dilation

Let us take into the consideration time dilation in the case of multiverse. We do not know anything about time running in other universes. Atrophysicist Sean M. Carrol, as well as other scientists, has shown the possibility of the time running backward in other universes.[376]

Let us suppose that time run backwards "with the same speed" as in our universe. The distribution of the person's consciousness will be in our universe and another universe. If the ratio of the distribution of the consciousness in another universe to the person's consciousness is one to four at some moment of time, the time dilation will be "d" years in the period of "2d" years. For example, if the period is twelve years, time dilation will be six years. In the case the ratio is one to two, the time dilation will be "e" years in the period of "e" years. For example, if the period is twelve years, time dilation will be twelve years. It means time does not run. The person will not become older with the age.

If time does not run in another universe or runs much slower, the situation with time dilation will be similar to the one described in chapter four.[377]

Time dilation could be the result of influence of some energies originated in another universe, but this question is "cognitively closed" to human beings.

5.8 Noosphere

According to philosopher P. Teilhard de Chardin's definition, noosphere is "a new layer", the "thinking layer", which is "outside and above the biosphere".[378] It has been also named as "the

[376] S.M. Carrol, Does Time Run Backward in Other Universes?, [Online]. Available at http://www.stealthskater.com/Documents/BigBang_05.pdf

[377] It is the case when time does not run inside a Planckian black hole.

threshold of the terrestrial planet". P. Teilhard de Chardin mentioned that noosphere has been created in the process of evolution as a result of the development of the mind.

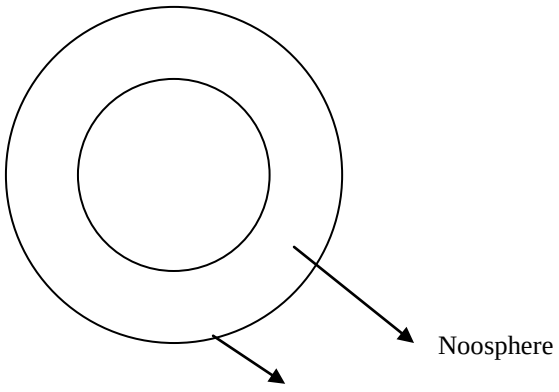
> In short, the further the living being emerges from the anonymous masses by the radiation of his own consciousness, the greater becomes the part of his activity which can be stored up and transmitted by means of education and imitation. From this point of view man only represents an extreme case of transformation. Transplanted by man into the thinking layer of the earth, heredity, without ceasing to be germinal (or chromosomatic) in the individual, finds itself, by its very life-centre, settled in a reflecting organism, collective and permanent, in which phylogenesis merges with ontogenesis.[379]

Thus, according to P. Teilhard de Chardin, the active work of our minds will promote the further development and sophistication of noosphere.

5.8.1 The Model of Collective Uniborder

Collective Uniborder is a part of noosphere, bordering noosphere and another universe. It is a sphere around the Earth consisting of individual Uniborders. Thus it consists of of Planckian black holes (our universe), traversable wormholes (the exact border) and Planckian white holes (another universe or other universes).

Graph 9

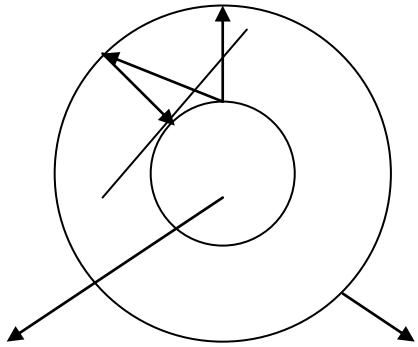


Noosphere and Collective Uniborder

[378] P. Teilhard de Chardin, The Phenomenon of Man, Collins Fontana Books 1965, [Online]. Available at http://ebookbrowse.com/the-phenomenon-of-man-pierre-teilhard-de-chardin-pdf-d275169311, pp. 197-198
It has been still a dispute who coined the term "noosphere". The suggestion is that it was coined either by P. Teilhard de Chardin, E. le Roy, or V. Vernadsky.
[379] P. Teilhard de Chardin, The Phenomenon of Man, Collins Fontana Books 1965, [Online]. Available at http://ebookbrowse.com/the-phenomenon-of-man-pierre-teilhard-de-chardin-pdf-d275169311, p. 247

From the knowledge of geometry, it is clear why the geometric point as an object of mental imagery is taken on the ray going from the person perpendicularly to the surface of the Earth as a globe. It is the shortest way to the Collective Uniborder. Let us prove this fact.

Graph 10



Proof of the direction of mental imagery

Let us suppose that the geometric point as an object of mental imagery is taken on the ray going from the person not perpendicularly to the surface of the Earth as a globe. It will intersect the Collective Uniborder in some point. Then from the point where it intersects the Collective Uniborder the perpendicular to the surface of the Earth will be dropped. This perpendicular will be shorter than the previous segment.

Let us suppose that the geometric point as an object of mental imagery is taken somewhere else. For example, it is visualized in the wall in the room. In this case, the consciousness and mind of a person does not have the possibility to go across the noosphere. Therefore, the chances of reaching another universe are smaller.

Thus the geometric point as an object of mental imagery should be taken on the ray going from the person perpendicularly to the surface of the Earth as a globe.

5.9 Mathematical Intuition

As it was mentioned earlier by Paola Zizzi, "mathematical intuition is an interactive task between the mind and the universe, in some sense different from the understanding of physical

laws, which includes all minds and black holes. Mathematical intuition is a private communication between our world and the whole universe."[380]

When a person is in the process of changing from a human being to a post-human, her or his consciousness is inside and outside the Planckian black hole. Thus her or his consciousness is in present and in probable future.

Mathematical intuition could be also understood in terms of time travelling. It is David Lewis' case where different segments have been connected and thus personal identity has been clearly understood.[381] Different segments in personal time have been taken into account including stretched out steaks (into the future). Personal time of a person is understood from the point of external time.

Mind has its peculiarities both promote stream of consciousness and follow consciousness. But, unlike consciousness, mind could be at any time of the probable event on the time scale from present moment to the probable future in the Planckian black hole.

Thus having added the events and experience of different steaks including stretching steaks of personal time and also having added their corresponding steaks from external time, we may find out that one or more steaks of probable events and actions connected with them are missing. Thus these steaks are found as a difference between the sum of the events and experience from personal time minus the sum of the events and experience from the external time.

Case 6

Steaks of a person (according to personal time) include the following segments of experience and actions: a_1, a_2,.., a_{n-1}, a_n. The segments a_{n-1} and a_n are stretched out ones. The corresponding steaks of the same person (according to external time) are: b_1, b_2, .., b_{m-1}, b_m. They could not include any stretched out segments. We add the segments a_1, a_2,.., a_{n-1}, a_n, and the segments b_1, b_2, .., b_{m-1}, b_m. Then we find the difference between the sum of a_1, a_2,.., a_{n-1}, a_n and the sum of b_1, b_2, .., b_{m-1}, b_m. We have found out the steaks with our probable actions in the nearest future.

Having analyzed the data from the universe and the black hole at present and probable event in the future, a person carries out his or her further actions with the help of mathematical intuition. When one single action is carried out or some actions are carried out, the situation changes, and once again mathematical intuition helps a person to judge the situation and make the next actions.

5.9.1 Mathematical Intuition and Theory of Multiverse

[380] P. Zizzi, Consciousness and Logic in a Quantum-Computing Universe, [in:] The Emerging Physics of Consciousness, ed. J.A. Tuszynski, Springer 2006, p.474

[381] In this case a person's consciousness and mind have been taken into account.

According to Paola Zizzi's definition of mathematical intuition and theory of multiverse including the model of Uniborder, we could paraphrase the definition of mathematical intuition as an interactive task between the mind and the multiverse, in some sense different from the understanding of physical laws, which includes all minds as well as black holes, wormholes, and white holes. Mathematical intuition is a private communication between our world and the multiverse.

Thus mathematical intuition helps to carry out further actions in the case of multiverse existence.

Theoretically, mathematical intuition in the case of multiverse existence could be compared with one in the case of the existence of only our universe. Practically, it is difficult to carry out such research and analyze results.

5.10 Fields of Consciousness and Mind

The existence of fields of consciousness and mind has been supposed to be true based on the writings of Ervin Laszlo, Rupert Sheldrake, Teilhard de Chardin, Carl Jung, Itzak Bentov.

Ervin Laszlo based on different findings has supposed that the Akashic field exists. This field exists among other fundamental fields such as gravitational field, electromagnetic field, different quantum fields. The Akashic field is the field dealing with the zero-point field of the quantum vacuum; it is the field of information and consciousness. The field is not registered by any known senses. The existence of field is an ancient intuition supported by cutting-edge research in cosmology, quantum physics, biology, and consciousness studies.[382]

Rupert Sheldrake has argued that minds are extended both in space and time. Therefore minds should form their field. Also morphogenetic fields having the inheritance by morphic resonance from the organisms are the fields created by means of mind.

Psychotherapist and psychiatrist Carl Jung's main contribution to psychology was his modification of Sigmund Freud's ideas to encompass the idea of "collective unconsciousness". Sigmund Freud understood the nature of mind by realizing that we all have own personal unconscious mind that influences our thoughts and actions. The concept that we all share a collective unconscious was proposed. This collective unconsciousness is constructed from all memories and patterns of behaviour that have accumulated over the history of all people on the Earth. Carl Jung wrote: "This collective unconscious does not develop individually but is inherited. It consists of pre-existent forms, the archetypes, which can only become conscious secondarily and

[382] E. Laszlo, Science and the Akashic Field, An Integral Theory of Everything, Inner Traditions, Rochester, Vermont 2004, p. 6-57

which give definite form to certain psychic contents."[383] The mentioned collective unconscious is a field of consciousness.

Teilhard De Chardin supposed that noosphere, the "thinking layer" of the Earth exists. It is a clear case of the field of mind.

According to Itzhak Bentov, the universe is a hologram in which all parts are connected. All parts have information about each other and about the whole universe. The hologram of information was called as the universal mind by him.[384] Universal mind is the field of mind.

Itzak Bentov wrote:

> Each individual human consciousness is part of that hologram: therefore, by projecting one's consciousness into the universal mind is a heightened state of awareness, one can obtain knowledge about the whole universe.
>
> It also follows that the thoughts of all human beings are interconnected, affecting each other and in turn affecting the entire universe. Whatever one thinks or does becomes part of the universal hologram. The implications of this are obvious and far-reaching.[385]

In Itzak Bentov's words, there exists consciousness, the higher consciousness. This consciousness is the observer or "soul of the Earth". The human beings are contained within this consciousness. This is the example of the field of consciousness.[386]

Technologies and equipment allow measurement only to 10^{-16} cm. Therefore, the fields of consciousness and mind should have waves less than 10^{-16} cm. It should be mentioned that the mentioned fields are not supernatural, they are natural. They are usually cognitively closed for people. One of the partial exclusions is altered states of consciousness when people could have access to them. Cosmic consciousness, in Richard Maurice Bucke's understanding, gives the access to fields of consciousness and mind.

Fields of consciousness and mind are not homogeneous. They may have their concentration in some parts. Psychical phenomena of time slip could be explained by the high concentration of fields of mind and consciousness in some parts which are adjacent to the boundaries of the Earth at some places. The example of the alleged time slip into past is Bond Street in Liverpool, the United Kingdom of Great Britain and Northern Ireland. [387]

Field of consciousness explains why the equilibrium point of consciousness could be for a short period of time, for example, in another universe just after performing successfully the third

[383] C. Jung, The Collected Works, Volume Nine, The Archetypes and the Collective Unconsciousness, translated by R. Hull, Routledge, London 1981, p. 43
[384] I. Bentov, A Brief Tour of Higher Consciousness: A Cosmic Book on the Mechanics of Creation, Destiny Books, Rochester, Vermont USA 2000, p. 15
[385] Ibid., p. 15-16
[386] Ibid., p. 31
[387] A. Mackenzie, Adventures in Time:Encounters with the Past, Athlone, UK 1997.

stage of the experiment in consciousness. Consciousness of other people draws it back and it descends. The further work of individual mind will promote its further ascending.

The examples of the alleged time slip into future are some places in historical Tibet, present day People's Republic of China. Tibetan Buddhism has developed into quite unique religion and philosophy having not analogies to other religions and philosophies. Historically known "technologies" of working with mind and consciousness do not have their analogies in other parts of the Earth. The examples of such "technologies'' could be mentioned in chapter one case when a person transfers his or her consciousness from the body to the "appropriate part of the space".

On another hand, each place on the Earth could provide possibilities of time slip into future. In a great deal, the possibility of time slip into future depends upon the desires, intentions and goals of a person. The experiment in consciousness, described in chapter four, and its continuation in chapter five deals with time slip into future.

5.11 The Experiment in Consciousness (Part 2)[388]

Based on the theory of multiverse, let us continue carrying out thought experiment what will happen later with the person's consciousness. It was mentioned earlier it is not the thought experiment in consciousness; it means that the stream of consciousness will be carried out by means of mind and only by it.

The stream of consciousness will go through the fields of consciousness and mind. It is deeply ASCo. As it has been stated earlier by Ervin Laszlo, the information is received which is not expressed by the ordinary senses. The first stage will have been carried out successfully after a person has gone through fields of mind and consciousness and reached Collective Uniborder, more exactly the event horizon of the Planckian black hole of his or her Uniborder. It is clearly registered by a person.

If the person would like to carry out the second stage of the experiment in consciousness successfully, he or she should try to direct his or her consciousness inside the traversable wormhole by means of mind.

The second stage of experiment in consciousness is deeply NDE and mystical experience. The person will understand that he or she will die; in actual fact he or she will not die.

If the person would like to carry out the third stage of the experiment in consciousness successfully, he or she should try to direct his or her consciousness further inside the model of Uniborder.

[388] Once again, the process of carrying out the experiment is risky. It may cause harm to a person's health or provoke death. On another hand, people sometimes may have severe illness or know that they would probably die in a short period of time; in this case it is clear that nothing worse will happen.

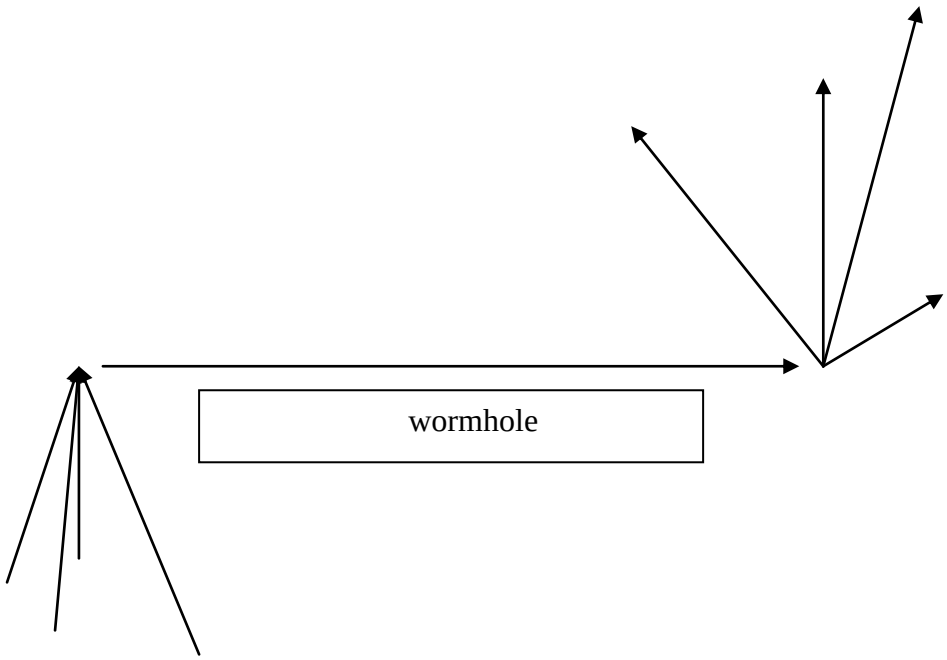
The third stage of experiment in consciousness describes the experience in another universe. It is deeply mystical experience. Most probably, it is the universe where time goes in another direction. The laws of quantum physics do not contradict it. The experience in another universe is deeply NDE and mystical experience. A person will register clearly when the third stage of the experiment in consciousness has been carried out successfully. A clear border when there is no return (NDE) is indicated during the experience in another universe.

Each stage of the whole near-death and mystical experiences lasts from a few hours to a few days.

After having carried out at least the first stage of the experience in consciousness, consciousness will never return to its "normal" state. It will remain in its altered state. But this altered state of consciousness (ASCo) will become stable and permanent later. Some years after having carried out successfully the third stage of the experiment in consciousness, it will become the cosmic consciousness, in Richard Maurice Bucke's understanding.

In order to have the permanent cosmic consciousness, a person should involve more her or his mind activities towards consciousness in another universe. Thus the distribution of his or her consciousness will be more in another universe than it was earlier. The mathematical intuition will help her or him to carry out mind activities.

Graph 11



Inset and outset of streams of consciousness in the model of Uniborder

5.12 Bifurcation and Chaos

Bifurcation is mathematical analysis theory of changes in the qualitative structure of some fields. It is most commonly applied to study of dynamical systems. Bifurcation appears when a small change of the parameter values of a system makes a sudden qualitative change in the behaviour of a system.[389] The theory of bifurcation is used in quantum physics, political science, economics etc. It is used in systems philosophy too.

In contemporary science and systems philosophy, bifurcation "signifies a fundamental characteristic in the behavior of complex systems when exposed to high constraint and stress"[390] As it was mentioned by Ervin Laszlo, people themselves are complex systems exposed to constraint and stress. The fields of consciousness and mind are other examples of the complex dynamical system.

Ervin Laszlo has written:

> Bifurcation refers to the behavior of complex systems in states and conditions that are far from equilibrium. Bifurcation occurs when such systems are destabilized in their environments, stressed out of states in which they could comfortably remain virtually forever. Because complex systems in the real world are nearly always "far from equilibrium" (which in this context does not mean weakness and imbalance, but a dynamic state where internal forces keep a system from lapsing into randomness), changes can frequently occur that upset the rapport between the internal forces structuring the systems and the external forces that make up their environment. When that happens, sudden and nonlinear "chaotic" processes take place that either restructure the system and propel it along a trajectory that becomes more and more complex, either leading ultimately to the evolution of life – and perhaps also of mind and consciousness – or else to a fatal perturbation of the system and its disintegration.[391]

In Ervin Laszlo's words, when a system is pushed outside its stability, it goes into a stage of chaos. The chaos may not result in the death of the system. It could be the beginning of a new development. Chaos promotes the development of higher forms of order in systems that work successfully. The relation between the order before the chaos and after the chaos is not linear; it is not the case of simple cause and effect. During the process of bifurcation the evolution of dynamical systems is complex. Therefore bifurcation is "full of surprises".

[389] P. Blanchard, R. Devaney, G. Hall, Differential Equations, Thomson Brooks/Cole 2006, p. 96-97
[390] E. Laszlo, Vision 2020: Reordering Chaos for Global Survival, Gordon and Breach 1994, p.24
[391] Ibid., p. 25

It is not possible to predict what way bifurcation will go. The results of bifurcation could not be determined either by the history or by the environment of a system. Only the interplay of fluctuations during the chaos could determine the outcomes of the bifurcation.[392]

5.12.1 Bifurcation in the Fields of Consciousness and Mind

On one hand, consciousness of a person belongs to himself or herself. On another hand, his or her consciousness belongs to the field of consciousness. The similar situation is with mind. After a person has carried out three stages of the experiment in consciousness successfully, the fields of consciousness and mind are exposed to the process of bifurcation. The person's consciousness and mind are exposed to the process of bifurcation too. "The external forces" of another universe push the fields of consciousness and mind as well as the person's consciousness and mind into a stage of chaos. It could be the beginning of the development of high forms of order both in the fields of consciousness and mind and the person's consciousness and mind.

The processes of chaos restructure the dynamic system of the mentioned fields; it becomes more and more complex. The process of chaos leads to the evolution of consciousness and mind and consciousness both in the fields of consciousness and mind and the person's consciousness and mind.

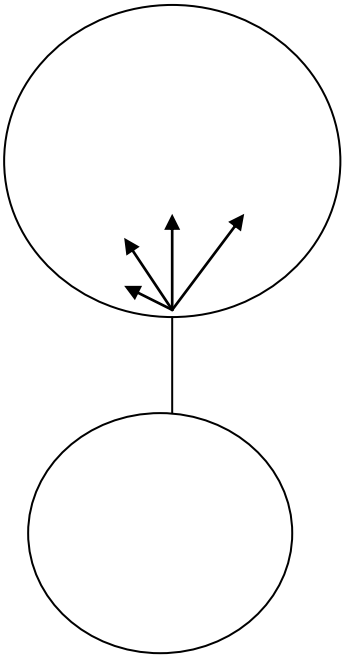
Only the interaction of fluctuations during chaos might determine the results of the bifurcation in the fields of consciousness and mind.

5.13 The Third Stage of the Experiment in Consciousness and Afterwards

It is possible to succeed in transferring consciousness not only to the event horizon and traversable wormhole in the model of Collective Uniborder, but also to another universe. First of all, a small part of the field of consciousness should be transferred to another universe.

[392] Ibid., p. 31

Graph 12

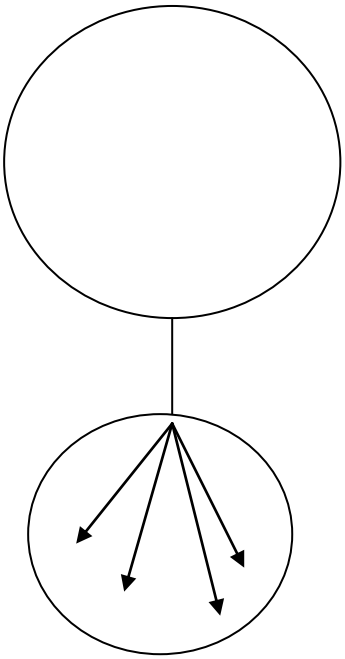


Transferring a small part of the field of consciousness into another universe

Just after having transferred it, the streams of a person's consciousness goes rapidly backwards into our universe. A stage of chaos begins in the system of the person's consciousness. Years are necessary in order to develop higher forms of order in the mentioned system. As only it has finished, a person becomes a post-human who has two parallel consciousness, self consciousness and cosmic consciousness.

The process of bifurcation begins in the dynamic system of the fields of consciousness and mind in our universe too.

Graph 13



The process of bifurcation begins in the dynamic system of the fields of consciousness and mind in our universe

5.14 Brief Conclusions

Theories of evolution of consciousness have been provided. The idea of a post-human developed by philosophers Max More, Nick Bostrom has been strongly criticized. My idea of becoming a post-human is based on the evolution of consciousness and gravitational time dilation.

Three stages of the experiment in consciousness have been described. I argue that in some time after having carried out successfully the third stage of the experiment in consciousness, a person will not age anymore.

Chapter 6

Post-Human Possibilities and Abilities

6.1 Asher Seidel's Philosophical Explorations of Post-Humanity

Philosopher Asher Seidel has speculated about some post-human possibilities. The selected issues which deal with the research are: facing immortality, parallel thought processes, and mindful seeing.

6.1.1 Facing Immortality

Asher Seidel has assumed that post-humans may face immortality. He does not insist on this assumption. Mortality is a necessary condition of a human being. Post-humans may have non-terminating life.

A necessary condition of immortality is to stop becoming older. In Asher Seidel's words, the oversimplified model of not becoming older is the balance of rate of cells destroying and producing:

> Roughly put, an organism grows when more cells are produced than are destroyed, an organism is at maturity when the rate of produced cells to destroyed cells is equal, and an organism is ageing when the rate of cells destroyed exceeds the rate of cells produced. If some means can be found to keep the number of cells destroyed equal to the number of cells produced for an indefinite period, then the organism will exist with arrested growth/ageing for the indefinite period of this equilibrium point. That is, it will so exist if nothing in its environment prohibits this balance.[393]

According to Asher Seidel, another step towards immortality is the replacement of different defective body parts. At present moment the replacement is mostly non-biological. The endpoint of the replacement is replacement of all parts. In order not to become a robot, the mental life of a person should be not "disembodied". The mental life should be continued, even enhanced.[394]

6.1.2 Parallel Thought Processes

Asher Seidel has speculated that concurrent thought processes may be a typical feature for post-humans. He means that a post-human will be able to perceive different flows of thoughts at the same time. Thus he will be able to be solving at least two different tasks by his or her mind.

It has been mentioned that it does not mean that sort of parallel thought processes would arise from "split-brain" physiological junction of the corpus callosum, the largest connective way of

[393] A. Seidel, Inhuman Thoughts: Philosophical Explorations of Posthumanity, Lexington Books, a division of Rowman & Littlefield Publishers, Inc. 2009, p. 42
[394] Ibid., p. 45.

a human brain. Asher Seidel has argued that some people may already have two flows of thoughts.[395]

6.1.3 Mindful Seeing

It could be inferred that mindful seeing as post-human possibility will be developed as based on mindfulness. A post-human will have the developed sense of "seeing" by means of mind. Asher Seidel has written:

> Consider ...a program for the living philosopher to engage the world theoretically, rather than commonly. In this practice, one's sense perception would be at some level the same as that of the dweller in the commonplace, but one no longer sees rocks and trees, tables and chars, because one's ordinary experience is charged with a different conceptual scheme than that of the commonplace.[396]

The examples of the altered states of consciousness, particularly Carlos Castaneda's Don Juan, have been described. Don Juan managed to have his everyday perceptual experience on the base of the theoretical view of states of mind and consciousness.[397]

6.2 Post-Human Possibilities and Abilities

According to the definition provided earlier, a person has become a post-human when his or her time dilation is nearly equal to the passed time of another person for some period of time. For example, if a person has become a post-human in 2020, it means that his or her time will not run anymore since 2020.

It does not mean that there will be a lot of post-humans in the 21-st century. Probably, a few will appear in the mentioned century. Century by century, their number will be increased. Another, more optimistic case is their number will increase in a geometrical progression.

One day it may appear that number of post-humans will be more than the number of human beings. But it will not be in this century.

Speculations about probable post-human possibilities have been provided.

6.2.1 Arrested Ageing

A post-human will not become older with age. Her or his time will not run, or it will run so slowly that it could not be compared with the time of a human being.

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[395] Ibid., p.74.
[396] Ibid., p.83
[397] Ibid., p.84.

It means if a person becomes a post-human in 2020 in his or her 33, he or she will be 33, as an example, in 2050.

Concerning immortality, it could not be stated. Arrested ageing could not be a sufficient condition of immortality. At the same time, highly developed intuition will usually help preventing different accidents that may cause death. It is not known yet what it is death for a post-human: most probably, consciousness and mind will continue their existence in the case of the body's death.

6.2.2 Highly Developed Intuition

The intuition of a post-human should be highly developed. The reason is that the post-human often does actions in order to fill in the chain of actions from past to future (as it was mentioned previously in case 6). In Richard Maurice Bucke's words, a person will have intuitional mind.

A human being will not be able to understand a post-human's intuition. A human being could wonder how a post-human will be able to do some irrational, from the point of a human being's view, actions and obtain unique results.

6.2.3 Backward Causation

Backward causation will be a common feature for a post-human. It means there will be effects prior to cause. This feature is not characteristic for a human being; it is typical only for a post-human.

The explanation of backward causation is based on the assumption that time slip into future is a necessary condition of becoming a post-human.

6.2.4 Cosmic Consciousness

A post-human will have cosmic consciousness. Cosmic consciousness is higher form of consciousness that human being's self consciousness. Both self consciousness (as in the case of a human being) and simple consciousness (as in the case of an animal) will continue to exist with cosmic consciousness.

It may be speculated that self consciousness and cosmic consciousness, in Richard Maurice Bucke's understanding, are parallel consciousness. As a result, a post-human will have two parallel minds. Parallel thought processes will promote each other developing.

6.2.5 Communication and "Seeing" by means of Mind

A post-human will have a highly developed consciousness and mind. His or her communication and "seeing" by means of mind will have been based on the concept of mindfulness. It will appear to be the sixth sense which is presently undeveloped in human beings.

A post-human will have the developed skills of telepathy, perception at a distance, and perception through time.

6.2.5.1 Telepathy[398]

Telepathy in the case of mind is "the experience of direct communication between two minds".[399] Also telepathy could be as the experience of direct communication between two consciousness. It is a higher form. Telepathy has been reported through history. Telepathy as a means of communication existed in teacher-student relationships in Buddhism and some other religions.

Dean Radin, Ph.D. degree in psychology, has written:

> In almost all cases, the reason such communications were reported is because they were meaningful to the experiencer. We often place telephone calls to each other, we often receive letters from old friends, and we sometimes seem to know what others are thinking. But when we have strong feelings about such events, and we know we didn't use the ordinary senses to get this information, and the information was verified in due course, this may be a reflection of genuine telepathy.[400]

The episodes of telepathy could be explained as coincidences. But in a lot of cases, the probability of such coincidences is too low; therefore coincidences should not be taken seriously into account.

Based on the fields of consciousness and mind, it could become clear when the cases of telepathy take place. First of all, it could be when both people are in the altered states of consciousness caused by meditation. The senses are deprived and this enables to have communication mind-to-mind, consciousness-to-consciousness. Secondly, if people have strongly relations like a mother and a child who love each other or two people who are in love. Thirdly, it is the case when two people have some elements of cosmic consciousness.

Post-humans will have highly developed mind; telepathy will be used as a means of communication among post-humans.

6.2.5.2 Perception at a Distance

Perception at a distance (without perception through time) is also called as "clairvoyance".

Dean Radin has written about the difference between telepathy and perception at a distance: "Clairvoyance differs from telepathy in that no one "sends" the information that is received. That is,

[398] For those who consider parapsychology to be pseudoscience, I would like to mention that the phenomena of psychic research are considered in the case of post-humans. They occur as a result of highly developed mind. From the point of a post-human, mind of a human being is undeveloped or developing. Therefore it is not possible to prove the existence of psychic phenomena in the case of human beings.
[399] D. Radin, The Noetic Universe: the Scientific Evidence for Psychic Phenomena, Corgi Books 2009, p. 59.
[400] Ibid., p. 59.

information is obtained from a distant or hidden location, beyond the ordinary bounds of space…"[401]

The field of mind based on the conception of the extended mind allows a post-human to carry out the detailed analysis what is going with the minds of some human beings. Thus it may be possible to percept some things at a distance.

6.2.5.3 Perception through Time

Perception through time could be divided into retrocognition, that is perception of what happened in past by means of mind, and precognition, that is perception of what will probably happen in future.

Rupert Sheldrake's conception of extended mind states that memories do not decay at death. They contribute to the collective memory of the species. It gives grounds to speculate that it is possible to carry out perception of past, even hundreds and thousands years ago.

As it was mentioned a necessary condition of becoming a post-human is time slip of consciousness into future, far away future. Therefore, it becomes possible for post-human to carry out the precognition of some events in future. It is the precognition of probable future, but its likelihood is not low.

6.2.5.4 Precognition and Free Will

The question may arise about the correctness and probability of precognition and its correlation with free will. Biologist Joseph Banks Rhine has written:

> If a precognition ever is or could be 100 per cent accurate, the knowledge of that fact would so profoundly affect our philosophy of life that one shudders at the implications. Especially is this true if, in addition, all kinds of events at any point of time are precognizable; for if they are, they are obviously all determined and invevitable. They would have to be fixed to be predictable. There would have to be fixed to be predictable. There would be no true freedom of choice. Even if a man knew by precognition that he would be in a train wreck, he could not avoid it. Of what avail would precognition be to the man in such a case? Evidence of such absolute precognition would imply a fatalism from which no decision could be truly free. Volitional freedom and perfect predictability are thus irreconcilable.[402]

It seems that there could not be perfect precognition; but precognition carried out by a post-human will be much more accurate and probable than precognition done by a human being.

[401] Ibid., p. 93.
[402] J..B. Rhine, The Reach of the Mind, Pelican, London: 1954.

One more argument in order to state that determinism or 100 per cent accuracy is wrong is quantum mechanics. According to the Heisenberg Uncertainty Principle, future events are indeterminate until they have been fixed in present reality. There could be a number of alternatives in the direction future events could take place.

The reasons that a post-human has better skills in precognition than a human being are the following: a post-human has already carried out time slip into future, far away future; she or he has highly developed intuitive mind; and she or he may carry out actions at a distance.

6.2.6 Actions at a Distance

Actions at a distance may include actions with probable events in future, and direct mental interactions with living systems.

6.2.6.1 Actions with Probable Events in Future

Actions with probable events in future are based on the precognition of a future event which, from a post-human's point view, will happen when she or he carries out the actions by means of mind.

Case 7

A post-human in 2060 will have carried out the precognition that some event will take place in 2064. The occurrence of this event will depend mostly upon him or her; but it will also depend upon some human beings.

Let suppose in 2060 he or she will have predicted that a human being A may be involved in the occurrence of the event. Even if it happens that a human being A will not be able to be involved in the occurrence of the event in 2064, actions with future events by means of mind will remain. Some time later a human being B will appear instead of A to be involved in the occurrence of the *event in 2064. It will be B's free will (or it may seem to B that it is h*er or his free will).

6.2.6.2 Direct Mental Interactions with Living Systems

Direct mental interactions with living systems (DMILS) are interactions of a person with fish, animals, and people only by means of mind.

As it was mentioned, a post-human will have two parallel consciousness and two parallel minds. This will enable him or her to carry out interactions by means of mind, consciousness, and both. It will enable him or her to involve his or her self consciousness and connected with it mind in the process of interactions. Cosmic consciousness and connected with it mind will be the base not involved directly in interactions.

Interactions could be also carried out through time (concerning future). It means, for example, that interactions with another person could be done in the length of time A and they will be carried out with the intention to have results in the length of time B which is in future to A.

6.3 Brief Conclusions

Post-humans will have some abilities and possibilities not peculiar to human beings. The most important feature is the arrested aging: a post-human will not become older with age. A post-human will have cosmic consciousness and highly developed mind.

A post-human will be able to carry out communication and "seeing" by means of mind. It includes telepathy, perception at a distance and through time as well as precognition. A post-human will be able to take actions at distance by means of mind. It includes actions with probable events in future and direct mental interactions with living systems.

Summary

I have tried all my best to describe consciousness and its evolution. The detailed analysis has shown that the unique results have been obtained. The first and most important result is that the age of a person, in its physical and biological sense, may not change with the passed time, i.e. the person's body may not have any significant changes for a long period of time.

Albert Einstein proved this fact in relativity theory. The classical example was a person travelling in the spacecraft at the speed of the light. The problem is that at present moment it cannot be done. We do not have any equipment to travel nearly or at the speed of the light.

The example described in the thesis allows us to reach the permanent altered state of consciousness or cosmic consciousness when our bodies will not have any significant changes for a long period of time. It is the case of gravitational time dilation based on a person's consciousness.

There have not been found any faults in my attempts to show that the hypothesis is right. It is possible to test if the hypothesis is true. Firstly, the "thought experiment" concerning the experiment in consciousness could be carried out. Secondly, the experiment in consciousness, including all three stages, should be done. Thirdly, it is necessary to wait "actively" for approximately fifty years and see if the theory works.

People usually underestimate the importance of mind in their practical everyday life. A lot of them are sure that it is impossible to make any harm for themselves or other people by means of mind.

More and more theories and facts state that a human's mind could have the influence on environment, first of all on the human himself or herself. Quantum theory and connected with it philosophy try all the best to prove the existence of the influence of mind on the environment. On another hand, if mind is undeveloped or developing, this influence could not be great. Even if mind is developed, this influence is tiny. But when it is carried out constantly and for a long period of time, the results of its influence could be substantial.

One aspect of the evolution is development of mind and consciousness, first of all consciousness. I am sure that every human might and should have part in the process of evolution. First of all, it is necessary to develop her or his mind and consciousness. During the process of evolution the human realizes that we are all related and his or her evolution promotes the evolution of other people.

We do not know and cannot know the way the evolution will go. We are not omniscient. But there are some probable ways according to which the evolution could go. Moreover, we probably ourselves direct the way of the evolution.

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