



Marek-Lars Kruusen's  
technology and science

# Near-death experiences





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## General introduction

Throughout history many thinkers have reflected over the issue of how the body and the mind are interrelated. Many of these thinkers have considered this puzzle the key issue in the world that is not possible to ever solve. Nevertheless this has been attempted and the provided solutions are divided into two large categories.

For example, one of these categories concerns the duality of the body and mind, i.e. dualism. The French philosopher René Descartes thought that the world of physical bodies and a person's consciousness are completely different. For example, physical bodies always encompass some extent in a room - they take up space, they have dimensions. They have a certain location in a room and they can be divided into parts. But he is of the opinion that a thought does not have spatial extent and it is not composed of parts. A thought does not have a certain location in a room. Therefore, the world of physical bodies and a person's consciousness are different from each other. The physical world is composed of physical bodies. Therefore Descartes is of the opinion that there are two worlds: the spiritual world and the world of physical bodies.

However, a different approach to the problem of unity of body and mind comes from current researchers (psychologists) who find that consciousness develops in a highly differentiated nervous system that in turn is formed in a certain development stage of wildlife. This position is called "*physical monism*". According to this theory, no specific spiritual world exists, only known and yet undiscovered physical, chemical and biological phenomena. Researchers of the modern world consider any psychological manifestations the result of neural processes in the brain. Consciousness is a brain state and nothing more. There are different categories of these states of consciousness. The development of consciousness in the nervous system and its essence is addressed by both psychology and neurology. Physical monism completely denies the existence of a spiritual world, thereby reflecting the views of modern scientific world view. A lot of psychologists are convinced of the unity of the body and spirit. This conviction is confirmed by various brain studies that are done by various current methods. (Allik 2002, 19-20)

In analytical spiritual philosophy the body and mind problem is largely divided into two. These are monistic and dualistic theories. The monistic theories acknowledge only one side of the body and mind relationship, whereas the dualistic theories support both views. Also, monism may be very radical or less so. The monistic theories include the following sub-theories:

1. Subjective idealism (the whole known world is spiritual, as we only have perceptions), Berkeley.
2. Theories of two aspects (body and mind are two different forms of the same thing), Spinoza.
3. Bundle theories (body and mind are made up of different bundles, but ultimately made of the same things), Hume, Mach.
4. Extreme materialism (behaviourism and physicalism) (thoughts and feelings can be explained scientifically, therefore they do not actually exist), Watson, Carnap.
5. Identity theory (the brain allows for mental vocabulary), Smart, Armstrong.
6. Functionalism (various brain states may express only one behaviour), Putnam.

7. Dennett's materialism (a person rather decides that they see blue, not that the quality of blue is expressed).

The dualistic theories include the following sub-theories:

1. Interactionism (body and mind are two different things that affect each other), Descartes.
2. Occasionalism (consistent mental and physical phenomena which God coordinates), Malebranche.
3. Parallelism (non-causal relationship between body and mind that is "*synchronized*" from the beginning), Leibniz.
4. Epiphenomenalism (mental processes are caused by physical processes), Huxley.
5. The field of subjectivity (mental characteristics and aspects cannot be reduced to material descriptions), Nagel, Searle.

Current psychological science is convinced that consciousness and psyche do not exist without the brain. The material base of human psyche is the neurological function of the brain. It can be said that the psyche is a function of the brain. Mental activity is caused by physiological functions in the human brain. These views are generally accepted within the scientific world.

Modern science cannot draw a clear line between the physiological and the psychological sides. This has caused the equation of the physiological and the psychological sides and also their artificial separation. There is no doubt that psyche and consciousness actually exist. This can be confirmed by everyone who for example wake up in the morning and try to remember what they had experienced in their dreams. Nevertheless, psychological images are ideal. The reality of an ideal does not need to exist as a material substance or tangible object, instead it is important to understand the functioning of the ideal reality. The nature of psyche is preventative and active in adjusting to reality. This is reflected in behaviours in which people react according to future situations or conditions that are not objectively present in the current environment. This is how the ability of psyche to reflect reality legitimately and also adjust according to information from reality and the resources the organism currently possesses, is expressed. Scientific psychology tells us that ideas do not exist separately from matter, which basically means that the surrounding reality is mediated by neurophysiological processes. At the same time we usually perceive the end results of physiological processes, not the processes themselves. End results of physiological processes manifest in consciousness as psychological images or psychological processes, states and features. Their authenticity can be verified by practical activities and also by determining the changes in the objective world. Psyche is derived from first person perspective, i.e. immediate introspection. The existence of an abstract or theoretical reality due to neurological functions is reflected by different reactions, actions and consciously stated descriptions of a person. Psyche is also derived from it. For example, a mental image helps a person describe the nature on a tropical island while objectively being in a polar region.

In that regard it is important to note that the terms psyche and consciousness are not synonymous. The concept of psyche is much wider than consciousness and includes conscious psyche as one of its components. For example, a large amount of psychological

phenomena function and occur pre-consciously or outside of consciousness. Only a small amount of psychological processes and content of the information stored in psyche manifests as a conscious experience. However, the concept of consciousness is itself not unambiguous which means that there are many approaches and emphases to its scientific definition. Scientific psychology classifies psychological phenomena into three large groups: psychological processes, psychological states and psychological characteristics.

Source: Textbook "*The Basics of Psychology*" by T. Bachmann and R. Maruste.

But there exist such phenomena in medicine which overturn the views that consciousness (psyche) cannot exist without a brain. Such phenomena, called near-death experiences, will be further examined in the following text.

# CONTENTS

<b>GENERAL INTRODUCTION .....</b>	<b>2</b>
<b>1 PEOPLE'S EXPERIENCES IN CLINICAL DEATH .....</b>	<b>6</b>
1.1 DEATH OF A PERSON.....	6
1.2 NEAR-DEATH EXPERIENCES .....	8
1.3 RAYMOND MOODY AND KENNETH RING .....	9
1.4 CHARACTERISTICS OF NEAR-DEATH EXPERIENCES .....	11
1.5 HISTORICAL RESEARCH OF NEAR-DEATH EXPERIENCES .....	16
1.6 ARE NEAR-DEATH EXPERIENCES THE SIGNS OF MENTAL ILLNESS? .....	17
1.7 PHENOMENA CAUSED BY BRAIN CHEMISTRY? .....	20
1.8 THE REALITY OF NEAR-DEATH EXPERIENCES .....	21
1.8.1 <i>Out-of-body experiences caused by a person's brain</i> .....	22
1.8.2 <i>Why must a person's exit from their body be an actual phenomenon?</i> .....	25
<b>AUTHOR'S DECLARATION .....</b>	<b>33</b>
<b>DATA AVAILABILITY STATEMENT .....</b>	<b>33</b>
<b>ABOUT THE COMPANY.....</b>	<b>33</b>
<b>REFERENCES.....</b>	<b>33</b>

# 1 People's experiences in clinical death

## 1.1 Death of a person

Some thousands of years ago theories of body structure, functioning and disease were based on myths and magic. Scientific observations were not performed in ancient times. The first accurate anatomy studies were performed in the 16th century. More scientific methods have been applied in medicine since the 17th century. Medicine could evolve with the evolvement of the science of physics, as physics could invent technologies necessary for studying the human body.

For example, the invention of microscope and x-ray technology was pivotal to the field of medicine. By the start of the 21st century medicine could understand many of the functions of human body and treat most diseases.

The parts of the human body are organised hierarchically - from the simplest molecules to the body as a whole. Building blocks turned into cells consist of molecules as carbohydrates, lipids, nucleic acids and proteins. These are also involved in chemical reactions called metabolism. Metabolism of the human body in coordination with the building blocks of the body forms tiny living units called cells. Every cells needs enough nutrients and oxygen to stay alive and give the body energy. Tissues are made of conjoined single cells that have a similar structure and function. Tissues perform various functions in the body.

Many different kind of tissues form structures that are called organs. Each organ has a certain function or functions. Human organs are for example lungs, stomach, liver, kidneys and eyes. For example the stomach stores and dissolves food during the digestive process. The stomach and other digestive organs form the digestive tract. The digestive tract digests food, absorbs the useful nutrients into the blood stream and eliminates residues. People have twelve organ systems in total and they all work together for the body to perform its functions needed to survive.

The causes of death of the human organism may vary greatly but the signs of death are similar in all cases. For example breathing and heartbeat stops, the elasticity of tissues reduces, the muscles relax and stop responding to stimuli. For example the person no longer has reflexes. These are called the primary signs of death and after that the secondary signs of death emerge. For example livor mortis appears. This discoloration of the skin is caused by settling of the blood into the lower parts. For example if the deceased is laying on their back, the blotches appear on the back. Later it haemolyses and is absorbed into tissues. Afterwards the blotches turn bluish-red.

Rigor mortis starts specifically in the diaphragm and the heart. For example it can occur in human masseter muscles in about two to four hours after death. Afterwards the rigor mortis spreads to lower muscles and disappears in the same order in about two days after the individual's death. It is also known that different tissues do not die at the same time. For example the muscles may react to electrical stimuli many hours after the heart has stopped. The

movement of ciliated epithelium in the respiratory tract may continue for over ten hours. Sperm cells may move for more than a day.

Nerve tissue dies the fastest. Upon circulatory collapse the brain dies very fast. For example if the brain does not receive oxygen for 3-5 minutes, there will be irreversible changes in the brain. Finite brain death causes the heart to stop, as the blood circulation regulatory centres in the brainstem are dead. Until now it was known that brain death is quickly followed by cardiac death or vice versa, but currently these views have already changed. It is possible for example to preserve circulation with intense CPR. However, in this case large part of the brain is also dead, for example due to high cranial pressure. This possibility assumes that the circulation centres in the brainstem are functional. This is the only way circulation can continue.

However, a person's breathing can be maintained by breathing apparatus and fluid-balancing infusions. People whose brains are largely destroyed, carry on living in a vegetative state without being able to mentally connect to the outside world. Their life resembles that of a plant. If a person's brain is no longer functioning, the person is dead, but the heart keeps beating. Cessation of consciousness and psyche and lack of brainstem reflexes are considered the main characteristics of brain death. Brainstem reflexes are for example breathing movements, swallowing and corneal reflex. In this case the repeated EEG tests show only a flat (i.e. straight) line.

USA scientists (led by Yale University scientists Nenad Sestan, David Andrijevic ja Zvonimir Vrselja) have managed to resuscitate pig organs hours after their death. For example pigs that were considered dead started to move themselves. Scientists managed to restore the function of many organ cells and the blood flow. In 2019 the same scientists managed to restore the function of the pigs' brain cells with the BrainEx system many hours after their death (i.e. after they were decapitated). In 2022 they tried to apply this technique on the whole body. The scientists caused the anaesthetised pigs' hearts to stop. This stopped the blood flow which caused hypoxia of the cells in the body. As a result, the cells of the body should die in the common sense. However, after the cardiac arrest the scientists pumped fluid into the pigs' bodies. It contained the blood of the pigs, the oxygen-carrier protein in red blood cells i.e. the synthetic form of haemoglobin, and medicines that protect cells and prevent blood clotting. As a result the blood started circulating again after about six hours. This caused the heart, liver and kidney cells to resume function. This experiment demonstrates that it is possible to stop cellular destruction. The pigs did not regain consciousness after death, as there was no electrical activity detected in the brain. However they visibly moved their head and neck during the experiment. From this experiment the scientists conclude that the technique called OrganEx could be used in the future to save organs and even to resuscitate people. The synthetic solution pumped in to the body within this system contains 13 compounds intended to suppress inflammation, stop the formation of blood clots, prevent cellular death and correct the electrolyte imbalances caused by ischaemia. The OrganEx technique enabled the cells of the pigs in the experiment to heal, specifically in the brain, heart, lungs, liver, kidneys and pancreas. This caused the preservation of certain cell and metabolic functions during the six-hour experiment. The specific genes that are involved in cellular repair were also activated in the organs. This experiment with pigs demonstrates that the definition of medical/clinical death must be re-evaluated. It is thought that death can even be cured. Medical death may not be irreversible. The OrganEx technique could be used to treat the ischaemia occurring during strokes or heart attacks. This experiment with pigs demonstrates that cells die much slower than we have thought thus far.



## 1.2 Near-death experiences

People who have been brought back to life confirm that death is the most pleasant and striking experience of life. Near-death experiences have been quite thoroughly researched for example by an English paranormal phenomena researcher Dr. Kenneth Ring. For example the case of John Migliazzo in 1968 where he claims the following:

"I was swimming near the coast of New Jersey and grew really tired. I remember not having any more strength to swim. Suddenly I felt I was leaving my body. I rose up to 150 meters and saw my body struggling in the water. Eventually I had somehow reached the shore. I only remember darkness. I cannot put it into words. I was part of the universe, part of everything. I knew and remembered everything... It radically changed my attitude towards death."

Dr. Ring has thoroughly researched thousands of people who have been in clinical death and had near-death experiences. If people have had a near-death experience, they are no longer afraid of death afterwards. This is because during death they have felt peace, liberation and understanding. For example, Ring studied a person who experienced cardiac arrest and therefore was declared deceased. However, that person says that they exited their body and saw their physical body from afar. They confirm the following:

"I did not feel fear or any pain. In a few seconds I reached a dark tunnel at the end of which I saw light. It got brighter and brighter. I felt I was flying through it... Suddenly I was in a completely different place. A beautiful golden light was flowing from everywhere. I felt a perfect peace, acquiescence and love come over me. I felt I was a part of all that."

A woman who had fallen into a river with her car, confirms the following:

"I knew I was dead or about to die, but then something strange happened. This experience was so powerful that I stopped hanging on to life and only wished to see it from up close. I was in a long tunnel of light. It was not an usual light, rather an energy migrating into another state. At the end of the tunnel there was some kind of luminosity and for that I gave up the fight for my life. Having reached the Creature of Light, I discovered that I see what is further. I do not have the words to describe what I saw and experienced. I was an endless world, full of peace, love, energy and beauty."

UFO researchers have also noted the existence of people outside their biological body. For example, people have been in an out-of-body state inside a spaceship. Let's look at the following famous UFO case. In 1977 the first alien kidnapping case was investigated in Great Britain, however the incident itself had occurred in October of 1974. It involved a family of five - a mother, a father and three children. After spending the night with relatives in Essex county,

Aveley, on the way back they drove into an unusual greenish fog. It happened quite close to their home. Both adults later described stepping on board of the UFO hiding in a green foggy mass. They described how their car was pulled into the UFO with the power of a light beam. While on board, the kidnapped people were "outside of their body" and it allowed them to "float" around the UFO. At the same time they saw their actual (i.e. former) bodies "that" were still sitting in the car. UFO experts Andy Collins and Barry King were also involved in this research.

Many scientists and physicians do not believe in the veracity of the above-mentioned stories (near-death experiences and UFO cases). They are of the opinion that these phenomena occurring in brain death are caused by chemical imbalance in a person's brain. However, there is not enough data for scientists to verify this. Scientists are unable to evoke near-death experiences in laboratory conditions, therefore many scientists and also physicians do not believe in the veracity of near-death experiences.

It is a common scientific viewpoint that a person's consciousness is the result of electromechanical processes in the brain. According to this theory a person's consciousness and therefore their life ends with their death. However, this theory is yet to be proven. For example, the neurosurgical research of Wilder Penfield imply that a person's consciousness is independent of their biological brain. He concluded that a person's consciousness is able to separate from the biological brain. Modern science usually cannot leave prejudice aside; therefore, science cannot rationally assess the reality of near-death experiences (NDEs). Science does not acknowledge continuation of life after death. Near-death experiences "appear to be" metaphysical phenomena which are not a part of rational science.

### 1.3 Raymond Moody and Kenneth Ring

The fast development of medicine has enabled to save many people from death. In these cases more and more people have told about their out-of-body experiences during which they have felt incredible joy and satisfaction, met previously deceased people and relatives, had a telepathic connection with Creatures of Light and seen panoramic flashbacks on their life on earth. Such messages have begun to interest many healthcare professionals and psychologists, as these phenomena are more and more common and also these have many similarities. Researchers have begun to scientifically investigate these phenomena and these are called near-death experiences or NDEs in short.

Dr. Raymond Moody is a philosopher and psychiatrist who is also probably the most famous NDE researcher. His two first books are probably some of the best studies on NDEs. One of the books is titled "*Life After Life*" and the other "*Reflections on Life After Life*". During his research Moody questioned many people who had some kind of association to NDEs. Moody classified these people into two groups - those who could be brought back to life after clinical death, and those who were very close to death due to very severe trauma or disease.

In his book "*Life After Life*" Moody is generally of the opinion that experiences during NDEs are blissful in all cases. Very often people cannot describe these experiences in words, as these are so pleasant, joyful and exceptional. While at death's door, they did not wish to return to their life on earth. This is because the experience was so amazing and eye-opening.

However, in his book "*Reflections on Life After Life*" Moody presents negative NDEs as well

as positive. For example there are people who have had hell-like experiences while close to death, not Creatures of Light or deceased acquaintances and people. However, these are very unpleasant experiences that are completely opposite to a blissful experience. People having these experiences understood that they had done something wrong in their life on earth. Some of these people tried to end their life.

During positive NDEs a person experiences enormous happiness, peace and happiness. People see a Creature of Light, who has a very awe-inspiring and pleasant nature. They radiate ultimate love and satisfaction and they show the entrant a grandiose panoramic flashback on their life on earth. There are more Creatures of Light all of whom radiate ultimate love and have infinite knowledge about everything. They communicate only via telepathy. Positive NDEs are usually very memorable and the experiences very vivid, not vague or "sleepy". For example, a cultural anthropologist Patrick Gallagher spent weeks in a coma after a serious car accident in 1976. While in a coma, he had many striking and vivid NDEs which he described as follows:

"I was free not only from gravity, but from all human limitations. I could fly, so skilfully that I felt transformed... After that there laid ahead a dark area, there was no light, it seemed like a tunnel entrance... At last I saw a circle of light far away...perfectly beautiful, yellowish-orange... As I went through the tunnel, I reached a blindingly beautiful place... It was a perfect place, I mean...thoroughly and plentifully illuminated... I saw many people (there), some were dressed, some without clothes. Clothing that appeared transparent was beautiful, but it...did not hide anything... The people themselves were very pretty... As I understood at that moment being there, everyone had some kind of knowledge, as bright and ideal as the glowing light. And I also acquired it... I felt that I only had to approach the person I was interested in and instantly I understood their nature. It is so simple, you only need one glance...into the person's eyes, without saying anything...and a perfect understanding follows. It is not possible to put this general understanding into words. Without thinking or words I understood them as well as they understood me, now I really felt why poets consider the eyes as gates to the soul... I also understood that this beaming light will never fade, no-one had the need to sleep... I also knew that everyone there was very sympathetic towards everyone and everything... We were free from all of the controversies that historians consider the cause of wars and other conflicts, including land, food and shelter. The only evident thing was love. These ideal conditions created an unique state of no anger or other disturbing emotion - there was only an overwhelming state of love... I felt I could return to my life on earth, I missed...my children, my wife and many others. I made the decision to return, although knowing that the price may be very high, considering the biological, physiological and material needs and shortcomings of my body, also the fact that this amazing experience will only be a memory. I have no idea how I got back, but as soon as I had decided to return, I lost EVERYTHING I would have wanted to be or know, I was back."

Millions of people in the world have experienced this kind of positive and negative NDEs, regardless of their education level. For example, in North-America alone 5 percent of the population has experienced NDEs. NDEs are independent of the person's religious background, as these are experienced both by atheists and deeply religious people. For example, atheists, not

just religious people, also see the tunnel, Creatures of Light, their relatives during positive NDEs.

But a person's cultural or religious background appears to be crucial in interpreting NDEs. For example, Christians may see the Creature of Light as Jesus Christ, while Muslims may interpret it as Allah. In almost all cases a NDE will have a crucial impact on the rest of a person's life. NDEs significantly alter a person's values. Another famous NDE researcher aside from Raymond Moody is Kenneth Ring. He questioned 26 people who had had near-death experiences. Their values changed significantly later on. In his book "*Heading toward Omega*" he published the results of his research:

"After NDEs people tend to value their life more and give more attention and love to their loved ones, at the same time their interest in their position and material values decreases. Most of the people who have had NDEs also admit that afterwards they are living with higher spiritual goals and in some cases a deeper understanding of the core nature of life. It is important that these self-analysis reports are confirmed by those who have observed the behaviour of the people who have had NDEs as a bystander."

## 1.4 Characteristics of near-death experiences

Raymond Moody, one of the best researchers in the field of near-death experiences describes in his excellent book "*The Light Beyond*" the specific aspects of NDEs which have occurred in almost every NDE case thus far. These are also recorded in the book "*Life after death*", authored by the excellent expert in religion, Farnaz Ma'sumian. These recorded specific aspects of near-death experiences can be summarised as follows:

After cardiac arrest many people have had near-death experiences or NDEs. At first they are confused and scared. They do not understand what has happened to them. They find themselves floating over their physical body and are astonished by the fact that they can see their body from afar now. It takes a long time for them to understand what is happening. Often they try to make contact with the healthcare workers who are doing CPR on them or any other person near them. Usually this fails. Moody once had the chance of doing CPR on a woman on death's door. The woman later told Moody that she tried to stop the resuscitation as she liked the existing situation. When the woman attempted to grab Moody's hand, her hand simply went through his hand.

When it is not possible to make contact with others, the person begins to see their understanding of their own personality a lot more clearly than they could during their life on earth. They begin to feel their nature and individuality. The person begins to understand their "real me" that has been hiding inside them until then. For example, family ties somehow become less important, as the person's own nature and personality come to the fore. This has also been described as "cutting ties" or "a balloon taking off" as the string breaks. In case of NDE phenomena, people feel that they are liberated from the constraints of their life on earth and are able to feel their actual nature. Initial fears are

diminished and absolute elation emerges.

However, before "the ties" are cut, the ill or injured person feels terrible and excruciating pain. After this the person's feelings turn completely opposite - they experience an enormous elation and an indescribable sense of satisfaction.

After the severe pain has been replaced by a general feeling of joy and peace, the person suddenly feels raising up to the sky. They see their physical body from afar (usually looking below themselves). The person now feels that they are in a different body called "the spiritual body". They feel separated from their physical (or earthly) body. Generally the new body seen and felt during near-death experiences is not described. Some people have described it as a "field of energy" or "colourful cloud". However, one time Moody managed to get the descriptions of their "spiritual body" from one person: they saw that their hand consisted of very small "particulates of light".

After separating from their physical body a person begins to understand that they are probably dying. Soon they see a large dark tunnel. They feel being pulled into this tunnel. However, after a while a very bright light is seen at the end of the tunnel.

At the end of the tunnel the person is met with Creatures of Light who radiate light in a very bright manner and whose personalities are extremely awe-inspiring, but very pleasant at the same time. They bring the arriver a feeling of ultimate joy and peace. Many people who have had near-death experiences have described the feeling of love from these Creatures of Light as "*the purest love* that can exist in the universe. It appears to radiate blinding light. However this light does not damage vision in spite of it's very high intensity. The light is warm and in some cases even "*flickering*". Often the emerged Creatures of Light are previously deceased friends, relatives or acquaintances of the person. They communicate only telepathically which means exchanging information through thoughts. Understanding is instant and complete. Light emitted by many Creatures of Light is very bright, some even sparkle. It is similar to looking straight into the Sun from underneath clear water. Sparkling light is extremely bright. The light sparkles as the light of the Sun on the water surface of a rolling sea.

After some time the person feels the presence of a very special Creature of Light. According to the person's religious or atheistic cultural background they can consider this holy Creature of Light to be God, Christ, Buddha, Allah or some other holy entity. This ultimate Creature of Light is seen by religious people, atheists and agnostics. It radiates ultimate love and understanding. The light of this Creature of Light is exceptionally bright. It is extremely dazzling. The intensity of the light is similar to looking straight into the Sun from the Earth with the naked eye in the summer's midday. The only difference is that this light does not damage vision in any way. It feels as the light of a star filling the universe. One cannot look straight into the Sun with a naked eye, as this can cause blindness. However one can look at the Creature of Light without any damage to vision. This creature emits an enormous amount of light. The love and happiness it radiates cannot be described in words. An average person who has not experienced it cannot imagine it. Various people have described it as follows:



"As I reached the light, it was as if I was injected into a very loving cotton ball."

"There was so much light that I was swimming in it".

"As I stepped into the light I knew that God existed".

"I knew that I had never been loved like that".

"It was a light and incredibly loving feeling".

"And I understood that the light was the love of God".

The following series of photos illustrates the ultimate brilliance and glory of the awe-inspiring Creature of Light which is seen during people's near-death experiences:



The first photo depicts a field and a dense forest surrounding it visible from a distance. The second photo depicts a Creature of Light on the same field i.e. in exactly the same spot. The second photo is taken with the camera lens directed straight into the Sun. This causes the light effect seen on the photo. This is not a computer-animated image.

Creatures of Light have also been depicted in popular culture. For example in the movie called "*Lord of the Rings*" there is a character named Galadriel who is the Queen of Fairyland and the Lady of the Woods. In the movie, Galadriel is a tall woman, almost 2 meters, very sophisticated and intelligent, a powerful warrior. She is restrained and elegant, graceful and powerful. She has magical powers and her presence demands respect. All of these characteristics are felt by people who have perceived the presence of Creatures of Light during their near-death experiences. Similar to fairies in movies that are larger than life. They dominate every room they enter. They are above us, their aura is felt from a distance. They are beautiful and flawless, the ultimate people.

In the presence of this extremely bright and awe-inspiring Creature of Light the person has a chance to see their life on earth thus far, which appears in front of them as a three-dimensional panorama. There they see all of their life events as a bystander. The time dimension experienced is completely different from what we perceive while on earth. Time has acquired a completely unique form of existence. The entire life course of a person is now visible in detail. A person now feels the impact of their actions and deeds during their life on earth on other people. A person feels the joy and contentment or pain and suffering in other people's consciousness, according to what they have caused to others during their lifetime. During the flashback the Creature of Light is next to the person. The Creature of Light helps a person learn from their mistakes. The person now understands that they only need love and understanding going forward with their life. All of the people who experienced NDEs were much more gentle and impartial going forward. They were constantly striving towards knowledge.

Most of the people who have experienced NDEs go through some kind of a tunnel at the end of which there is bright light. But there are people who describe only floating over their physical body or even up in the sky. In this case they are quickly rising towards the sky. This was experienced for example by the famous psychoanalyst Carl Jung in 1944 when he developed cardiac arrest. Some people rise above the earth or rise up very quickly and see the starry sky around them.

The positive effect of near-death experiences is so great that they do not wish to return to their life on earth. Some people even get angry when the physicians are trying to perform CPR on them. But there are cases in which the Creature of Light gives them a choice. Sometimes people wish to return to their life on earth to raise their remaining children or for some other important reasons.

For example, Moody presents a case where a woman in Los Angeles even had two near-death experiences, although thirty years apart. The woman was involved in a car accident and fell into a coma afterwards. It happened about in the end of 1950s. The Creature of Light suggested that she needs to go to heaven now, but the woman refused that "amazing opportunity". The woman considered herself too young to die. She said to the Creature of Light: "I am too young, I have not danced enough yet". The Creature of Light thereafter "burst into laughter", but allowed the woman to carry on living. Time went on and thirty years later the woman developed cardiac arrest during a minor surgical procedure. This time she also had a near-death experience. She went through a tunnel and met that Creature of Light again who once again said that it is time to go to heaven. The woman once again refused to go to heaven as she still had to raise her children. "Alright", said Creature of Light, "but this is the last time". Next time you have to stay here."

It must be admitted that near-death experiences are very similar to a person being born into this world. All people have the experience of birth but it cannot be remembered. A person comes into this colourful and light-filled world quite painfully through the birth canal. Joyful and helpful healthcare workers help and carry out the birth process and

receive the child after delivery. Healthcare workers are usually dressed in white, as in clinical death creatures existing as light are seen. In that sense NDEs are like the memories of being born which are visualised at the time of death.

People who have themselves had near-death experiences or researched these thoroughly, for example Raymond Moody, are completely convinced that these phenomena actually exist and are not caused by neurochemical processes in the person's brain. However acknowledged scientists and healthcare workers do not agree and present their own neuroscience theories. Authoritative and hypercritical scientists are of the opinion that all cases of NDEs are the result of a chemical imbalance in the human brain. This may be caused by endorphins released from the brain. In their opinion the cases of NDEs are similar to manifestations of mental illnesses. There are many opinions and theories on NDEs. Some scientists believe that near-death experiences are caused by narcotic drugs or hypnotics. They have also been considered temporary seizures or even targeted fictions of people.

The following outlines the descriptions of NDEs of different people. Such descriptions have been obtained by R. Moody, who has included these in his published books:

"I remember being transported to an operating room and the next four hours were a very critical time. During this time I began to leave and re-enter my body and I could see my body from directly above it. But during doing that I was still inside some kind of a body, but not a physical body, rather something that I would namely call some form of energy. Since I have to word it, I would say that it was transparent, spiritual, the opposite of physical being. But it had different parts."

„I was outside of my body, looking at it from about ten yards, but was still thinking the way I do in the physical world. And my thoughts were at the level of my usual body. It was not a body as such. I felt something like a capsule or something similar, like a transparent form. I could not really see it, it was sort of transparent, but sort of was not. It was like I was like some kind of energy, maybe like a small ball of energy. And I did not have any bodily sensations - warm sensations or nothing like that."

„He was there, but had no physical body. It appeared as a transparent body and I felt all of its parts - hands, feet and everything else, but did not physically see them."

During their near-death experiences, many people have met an extremely pleasant, very genuine and awe-inspiring Creature of Light. People often cannot describe in words their exceptional meeting with this ultimate Creature of Light:

"This Creature of Light seemed vague at first, but then a large glow appeared. There was an extreme amount of light, it was not like a bright flash, but just a big light. Warmth was flowing from it, I felt a warm sensation. It was light, yellowish-white, more white. It was extremely bright; I cannot describe it. It seemed to



encompass everything, but did not prevent me from seeing everything else around me... I felt especially good, protected and loved. The love pouring from it was unimaginable, indescribable."

In the presence of this awe-inspiring Creature of Light the person sees a three-dimensional panoramic flashback on their life on earth thus far. This is apparent in both negative and positive near-death experiences. In case of positive NDE a person feels great joy in their lived life during the flashback:

When the light appeared, the first thing it said was: "What have you done in your life that you have accomplished?". Or something like that. And then began the flashbacks... Well, I did not actually see the light during the time that the flashback lasted. As soon as it had asked what I had accomplished and the flashback began, it disappeared, but I felt it's presence the whole time, that it was leading me through these past events, I felt it's closeness and it commented occasionally. It was trying to prove something with these flashbacks. Not that it wanted to see what I had done, it already knew that."

During these near-death experiences people meet previously deceased relatives, friends, acquaintances or other so-called "souls".

"All of them were people I had known in my past life, but who had left before me. I recognised my grandmother and a girl I had met in school, and many other relatives and friends... They all appeared content. It was very pleasant, I felt that they had come to take care of me or protect me. It was almost as if I had come home and they were there to take me in and greet me."

"A few weeks before I almost died, my friend Bob was killed. At the time I exited my body I felt that Bob was standing right there beside me. I saw him in my mind's eye and felt he was there, but it was a strange feeling. I did not see him as a physical being."

## 1.5 Historical research of near-death experiences

Exiting the body is commonly known as "astral travel" or "astral projection". It is called a "bilocation" if the "fluidum statue" thickens and becomes visible to a living person. Exiting the body may be spontaneous or a person causes it themselves. "The astral body" usually remains close to their physical body. In some cases, this "spiritual body" travels long distances in space and "materialises" only when reaching its destination. For example, some witnesses have allegedly seen the same person specifically in both places at the same time. Having exited the physical body and travelling long distances in space, the physical body is sound asleep or in a cataleptic state. People who have returned to their physical body often have knowledge that they

could not have acquired otherwise than being present somewhere far away i.e. actually being outside of their physical body. For example, information that describes faraway places and events can be verified by people living there.

During the last centuries many researchers have gathered a quite large amount of data which allegedly demonstrate human experiences of exiting the body. For a long time the specialists of the so-called field of "scientific (para)psychology" were quite sceptical towards the concept of spiritual or astral body. Currently these views have changed. This means that at least the researchers of paranormal phenomena have accepted this hypothesis and are researching it as a research object. For example in 1953 in the United States Professor Hornell Hart established a research centre for experiences of exiting the body in Duke University. Professor Hart of Duke University claims that the "astral entities" accompanying near-death experiences (or experiences of exiting the body) are very similar to specifically deceased people that reveal themselves to the living as ghosts. In the United States Charles T. Tart has also conducted studies on exiting the body in addition to Hart and Osis, however in England these phenomena have been studied by Oxford researchers Crokall and Celia Green.

A large amount of "subjective" experiences with exiting the body, as well as data on bilocation manifestations allegedly confirmed by bystanders, have over time been collected by researchers as for example English Myers and Gurney, German du Prel, Italian Bozzano, French Durville and Lancelin. There have been excellent laboratory experiments conducted with people who allegedly have bilocation abilities. For example if a "thickened astral body" separates from the person, they are still able to knock on the table and move a chair, table or door. This was for example supposedly revealed in Durville's experiments. Allegedly it is determined that the "shape of spirit" weighs 30 grams if placed on a scale. In 1909 Durville published the book "Le fantôme des vivants" where he described his so-called experiments. Supposedly the fingerprints of a person's "astral shape" have been successfully taken. This was done by Lancelini and in 1913 he published the book "*Méthode de dédoublement personnel*" in which he describes his experiments.

The studies on people exiting their bodies conducted over time have noted that in case of exiting the body the perceptions and emotions of people double.

The possibility of going out of the body has been established as a subjective experience, but has not been established as an objective phenomena according to sceptics. People that have experienced this phenomena do not doubt that it actually exists, but those who have not still remain sceptical about the actual existence of these phenomena and consider them "chemical flips" of the human brain. Only a few researchers have thought that a person's consciousness continues to live after death as a "fine-material ectoplasmic body", as this is claimed to have been experienced after exiting the body.

## 1.6 Are near-death experiences the signs of mental illness?

Scientists and healthcare professionals interpret the near-death experiences as symptoms of mental illness. It is thought that these occur as a result of a chemical imbalance or endorphins released in the brain. It is also thought that these result from the use of narcotic drugs and hypnotics, temporary seizures or are even a targeted fiction.

The associations between near-death experiences and several mental illnesses are analysed in the book „*Life After Death*“ (Tallinn, 1997, Farnaz Ma'sumian) which we will address here in detail.

Near-death experiences or their specific components are considered by most healthcare workers as the signs of mental illness. For example out-of-body experiences. These are classified as schizophrenic disorders like hallucinations, delusions and organic mental disorders as delirium tremens. Some physicians have referred their patients with near-death experiences to psychoanalysts or even a mental asylum.

Are near-death experiences actually caused by mental illness? To analyse this we will address the symptoms of schizophrenia which in the opinion of some medical professors are also present in near-death experiences:

In case of visual hallucinations people see objects and phenomena that actually do not exist. Auditory hallucinations include hearing sounds that do not actually exist. It is analogous to visual hallucinations. In case of delusions a person is absolutely convinced that they are for example God or Picasso. Schizophrenics suffer from the loss of thought association. They struggle to associate their thoughts - they jump from one unassociated topic to another while interacting with others.

Schizophrenics are heavily tortured by what they see or hear or what they are not able tell other people. These aspects make the disease manifestations even more severe and many of them become deeply depressed. Some people cannot take care of themselves and are therefore placed in assisted living facilities. On the other hand, people who have had near-death experiences exhibit improved attitudes and societal engagement. In this state many people have seen Creatures of Light, but none of them have identified for example as God or Alexander the Great. Schizophrenic visions are incoherent and appear repeatedly, on the other hand, near-death experiences are always coherent and occur very rarely during a person's lifespan.

Medical professors have regarded near-death experiences as delirium - a severe chemical imbalance which usually subsides and does not cause permanent brain damage. Many near-death experiences occur when the brain is deprived of oxygen and the brain may manifest quite extreme reactions to this. However it is well known that delirium as a state causes confusion and disturbances in the perception of surroundings. In delirium people very often experience negative hallucinations in the form of animals or bugs. In this state many people have unassociated thoughts and present with concentration difficulties. When the period of delirium is over, the person usually does not remember it's details or remembers very vaguely.

However none of these characteristics is present during near-death experiences. No-one who has experienced delirium, has given it a deep meaning or attributed to it a significant spiritual effect to the rest of life. Delirium experiences do not have any of the specific signs of near-death experiences, like seeing the tunnel, Creatures of Light, flashbacks on their life etc. Delirium is also considered "*a bad trip*", near-death experiences have in contrast been considered "*spiritual turning points*".

Some clinical researchers consider out-of-body experiences (one of the characteristics of near-death experiences) "*autoscopic hallucinations*". These experiences are not well known, but these have been heard of throughout history. During such hallucinations a person sees a projection of themselves in front of them which is comparable to presence of a bystander. Modern medicine knows that many epileptic or migraine patients quite often suffer from these.

This kind of hallucinations are much talked about, but one has to keep in mind that there is an enormous gulf between out-of-body experiences and autoscopic hallucinations. In case of out-of-body experiences a person's perception centre is located outside their physical body, however in autoscopic hallucinations the person perceives their projection from their physical body. This is a significant difference to take into account. The self-projection that a person sees is usually three-dimensional and not transparent - just as if was an actual person. However, in out-of-body experiences the bodies are seen as transparent. In case of out-of-body experiences people have been able to walk around without their physical body and give very accurate descriptions about that, however in autoscopic hallucinations people cannot have such experiences, as they perceive hallucinations from their physical body.

There is another very radical idea proposed to justify the nature of near-death experiences. Namely, near-death experiences are nothing else but memories of being born - the painful emergence of the child from the mother's womb, escape from darkness into the light and bright world, the nurses are like Creatures of Light who accept the newborn joyfully and good-heartedly into this world.

This rationale for the emergence of near-death experiences and it's nature seems to be believable. However, scientific research on the abilities of newborns has definitively rejected this "hypothesis". For example, Carl Buker, Professor of Philosophy of Southern Illinois University, has examined the work of paediatricians. The essence of his research was to determine whether newborns understand and remember the experience of being born. The results of research permit to confirm that human senses are not developed enough at the time of birth to receive or even remember anything. So the assumption that the Creature of Light seen during near-death experiences is someone's physician, midwife or father greeting the newborn exiting the birth canal, is unfortunately incorrect. Newborns cannot focus their gaze. If the contrast of light and darkness is not at least 70%, newborns do not react to light. These are scientific facts. The gaze of a newborn is brief and uncoordinated and even more so if they are crying as most newborns do. Tears disturb the vision. In their first month of life no child is able to concentrate their gaze on an object that is further than 1.5 meters.

A newborn cannot perceive what they experience during birth. This is because a newborn's senses are not properly developed at the time of birth and they do not have experience with the contours of objects and shapes. If near-death experiences

are really residual memories of the experience of being born, these should be painful and difficult experiences, not sensory events that bring about bliss and peace.

Higher vertebrate life-forms (e.g. birds and mammals) have a very differentiated nervous system. The characteristics of such life-forms reveal that their behaviour is conscious. But these specific characteristics are entirely lacking or only partially present (or may be vague) in life-forms whose nervous system is not differentiated to such extent. Therefore, science concludes that consciousness is associated with complex neural structures. This suggests that consciousness does not exist outside of neural structures. Science also accepts that consciousness exists only as a cooperation between cortical and subcortical structures, however not alone in either structure.

## **1.7 Phenomena caused by brain chemistry?**

Scientists (e.g. Zalika Klemenc-Ketis) have discovered a very strong association between having near-death experiences and increased levels of carbon dioxide and to some extent potassium in cerebral blood. Scientists also believe that carbon dioxide alters the chemical balance of the human brain and evokes sightings of light, tunnels and deceased people.

However the bright light experienced before death can be caused by increasing levels of serotonin, which Alexander Wutzler has discovered in his research. Neurobiologists have long thought that the reasons for near-death experiences are related to cerebral neurotransmitters. The main cause is thought to be the before-mentioned serotonin, as it regulates mood and processes information from sight and hearing. As serotonin regulates pain perception and also mood, it is therefore thought that a high serotonin level in the brain makes dying easier on a person.

But there are other scientific opinions on the reasons of near-death experiences. For example, researcher Susan Blackmore finds that many near-death experiences are caused by cerebral hypoxia. Near-death experiences can be evoked by chemical compounds and therefore the reasons for near-death experiences are thought to be neurological mechanisms. For example, a quite small dose of a hallucinogen evokes exceptional conscious experiences and visions in the brain. This is also caused by a state where the brain does not receive oxygenated blood. The heart that pumps blood, is arrested during clinical death. These circumstances convince the researchers of a natural cause, instead of interpreting it as supernatural. Generally it is thought that near-death experiences are disturbances in normal brain functions caused by a traumatic event.

For example, fighter pilots experience a state of consciousness resembling near-death experiences. These occur if turns are made at a very high speed or in case of downward plunges. The brain is impacted by severe gravity in these cases. In a fighter taking a very fast turn the force is shifted from head to feet. This occurring force pushes everything down. The seat keeps the person's body in place in the aircraft, but blood still flows to the lower limbs and also stomach. This in turn means that a person's brain is temporarily deprived of blood. Researchers in various flight laboratories are using centrifuges mimicking the conditions of fast flying. In such conditions the researches are examining the effect of gravity on the human brain. The pilots start to lose consciousness for a moment, but before that the blood starts to "flow away" from the brain and a tunnel is seen after that. After that the person cannot move anymore and is not

perceiving anything in the end. The person loses their consciousness. As blood returns to the brain, a person begins to twitch at first and then regains consciousness. At first the person is confused and does not understand the situation. A person can fly the aircraft only once the feeling of confusion resides. When people have lost consciousness, they have a short dream that has a specific nature and is very similar to near-death experiences. They see their family or relatives and feel floating. They feel like they are outside of their body and feel weightless. It is usually a very pleasant and euphoric feeling. These experiences are deeply engraved into a person's memory.

## 1.8 The reality of near-death experiences

We must consider three factors in case of near-death experiences, which we will further analyse here:

1. Leaving the body is an actual phenomena, as there are certain signs indicating it, like seeing things or becoming aware of something that you could not possibly see or become aware of being dead.
2. At the time of a person's death there is likely contact with extraterrestrial civilisations, as exiting the body indicates that life is continued after death and where else can this "afterlife" exist if not in the sky where UFOs have been seen.
3. People who have exited their body, feel something we understand as "*manifestations of virtual reality*". For example, people see hellfire, various unknown landscapes, buildings, strange unearthly creatures, life events of the person who has left their body etc

All of these factors are somehow related. However the near-death experience largely and clearly fall into two groups:

1. Illusions of exiting the body created by the brain A person's brain can credibly mimic exiting the body and near-death experiences. Scientists have searched for the part of the brain that is responsible for near-death experiences.
2. People actually exiting their bodies. We have to be able to distinguish between an illusion created by the brain and an actual exit from the body, as we do between talent, disorder and homosexuality or the benefits of vaccines and their claimed destructive effect.

Both sides have presented convincing defence arguments to prove their claims, which we will subsequently closely examine.



### 1.8.1 Out-of-body experiences caused by a person's brain

People's out-of-body experiences and near-death experiences cannot be interpreted completely literally. A person's out-of-body experience includes only leaving their body and nothing else. At the same time, a near-death experience includes many other aspects in addition to exiting the body, for example seeing the "spirits" of the deceased, a tunnel of light, beautiful landscapes and the feeling of bliss. A near-death experience includes leaving the body, but it is a much wider and diverse phenomena than a common out-of-body experience. In that sense these two have different depths and reach.

However, most descriptions of near-death experiences clearly include a combination of near-death and out-of-body experiences. Neuroscience has attempted to explain these two aspects separately, not tied together. But in Pam Reynolds case these phenomena emerged together, not separately. But how and why? This and the artificial induction of out-of-body experiences have been discussed by Villu Päärt in his articles from 2007 that can be found at the website: [www.novaator.ee](http://www.novaator.ee).

For example, according to official statistics, 18 percent of myocardial infarction survivors have had near-death experiences. It must be noted that near-death experiences do occur during clinical death, but not in all cases. It means that near-death experiences do not occur in all clinical death cases. Near-death experiences are not new or condemnable for the religious world, but current science views the dualism of the body and mind as absurd and unacceptable. However, it is a scientific fact that a brain-dead person is not capable of storing memories or being conscious, although this does occur during near-death experiences.

A scientific study conducted in the University of Kentucky in the US is considered the best explanatory theory of near-death experiences currently in the world. The university's research revealed that these strange phenomena are allegedly caused by a person's sleep disorder. This is because while clinically dead, the person's REM sleep phase actually continues. This is why a person's consciousness wakes up before the body, and emotions and hallucinations not associated with the body occur. According to this theory a near-death experience is just REM sleep which may occur for example during a myocardial infarction. This basically means that these phenomena are nothing else but a sudden onset sleep-like state. This theory seems to explain the aspect of people having experiences while their brains have stopped functioning. For example, the brainstem is a brain region that controls the main functions of the human body. REM sleep also originates from this brain area. However, it is known that human brainstem can function if the rest of brain regions have stopped functioning. This is how REM sleep occurs, which may be the cause of near-death experiences.

However, this proposed theory does not explain out-of-body experiences and the aspect in which a person sees their body as a bystander while being dead. Near-death experiences and out-of-body experiences sometimes occur together and sometimes separately.

An out-of-body experience can occur also when certain brain regions are stimulated. For example, a Swiss neurologist Olaf Blanke has researched people's out-of-body experiences. One of his patients was a 43-year-old woman who suffered from very severe epileptic seizures. The researcher attempted to find the cause of these seizures. In order to do that, he stimulated the woman's brain with weak electric shocks, as this enables to determine specific brain regions

responsible for certain functions. Upon stimulating a certain brain region the women had an out-of-body experience during which the woman looked at her body from somewhere above. An important conclusion of this study was that when *angular gyrus* (located near the conjunction of the temporal lobe and the parietal lobe) of the human brain is electrically stimulated, a person has continuous out-of-body experiences. Such experiments are repeatable in time.

A highly appreciated neurologist Michael Persinger of Canadian *Laurentian University* has conducted quite astonishing studies that must be noted in association with this topic. He has done experiments with people for 20 years and has consistently published his findings in medical and scientific literature. Persinger designed a machine that generates a strong electromagnetic field in order to stimulate human brain. This triggers a different state of consciousness and evokes visions in many of his test subjects. A feeling of spacelessness and timelessness and exiting the body often occurs, which is similar to the experiences of brain-dead people.

Many people who have suffered from migraines or epilepsy, have felt themselves being outside of their body. However, until now it has been demonstrated that people with epilepsy are more likely to have near-death experiences. A person's brain is able to convince the person that they are outside of their body. Scientists have begun to systematically research this phenomenon. For example, neuroscientists have attempted to evoke out-of-body experiences in healthy people. For example, in some experiments the subjects were equipped with video eyewear that enabled them to see their body from a different angle. The people participating in this experiment later said that they felt that they had exited their body. Such experiments provide new knowledge on people's body perception and it is possible to evoke the real feeling of being somewhere else but here using virtual reality technology. For example, experiments by scientists like Ed Jong with virtual reality technology in humans demonstrate that they can create illusions like that someone else's body is theirs, they have three arms or they are monsters or dwarfs. Similarly they can also induce the illusion of being outside of their body. These brain tricks are so convincing that the participants themselves do not believe that their brain creates these tricks. This clearly demonstrates that consciousness is directly related to the sense of "self".

These experiments demonstrate that it is possible to experimentally evoke and manipulate out-of-body experiences. It means that one can influence the brain's understanding of a physical body simply with the information passed through the senses.

For example, one experiment with stimulating out-of-body experiences, was conducted in Swiss Federal Institute of Technology Lausanne. In the experiment lead by scientists Bigna Lenggenhager and Olaf Blanke, people wearing video eyewear were standing in front of a camera. Participants were able to see a three-dimensional image of their own back from the camera shots in the eyewear. When their bodies were poked with a marker, the poking of the virtual body was also seen, but from the eyewear. During this poke the participants felt that the virtual body was their own body, which is clearly not the case. After that the video eyewear was switched off. After that the participants were asked to take a few steps away and then return to their previous location, only blindfolded. However, an unexpected incident occurred. The participants walked over their actual location and closer to the spot where they saw their virtual body.

Out-of-body experiences have also been studied by scientists of Swedish Karolinska Institutet. For example, scientist Henrik Ehrson conducted a study in which participants also saw the three-dimensional images of their backs through video eyewear. But in this case a woman and a man were sitting on a chair. As they were looking at their backs through the video eyewear, Ehrson touched the backs and chest of the participants with two plastic sticks at the same time.



The participants felt that they are sitting behind their physical body, i.e. outside of the body, even when they saw from the video eyewear how Ehrson was touching their actual back. Ehrson performed a similar experiment on himself. He experienced the same as the prior participants. He felt himself sitting in a different place although he was still sitting in the same spot. The body seen from the video eyewear appears as your actual body, although it is not. However, Ehrson admits that this body does not feel like himself, but it feels like looking at a doll.

*Ehrson admits that this body does not feel like himself, but it feels like looking at a doll.*

All of these experiments are repeatable in time. While repeating the experiments Ehrson measured the electrical conductivity of the participant's skin, as this gives an idea of the person's emotional alertness. The measurements demonstrated that the participants became afraid when Ehrson was pounding with a hammer in front of the camera at a spot where the people thought they saw themselves. It was clear that there was no actual threat, but the participant's emotional alertness nevertheless increased.

These experiments convince neuroscientist Peter Brugger of University Hospital Zurich in Switzerland that the feeling of being inside one's body is based on a visual perspective and coordination between the senses and perception. But Peter Brugger was also convinced that a complete separation from the body did not occur in these experiments, in which case the participants would have felt completely separated from their body. Very similar phenomena were however created in laboratory conditions.

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Olaf Blanke has also noted that out-of-body experiences may occur in many brain regions, for example in the conjunction of the temporal lobe and the parietal lobe. This has been demonstrated in earlier studies. However, such experiments demonstrate which brain regions and functions can induce out-of-body experiences and how the sense of self develops in the brain.

The brain processes a large amount of information each second. In the conjunction of the temporal lobe and the parietal lobe an actual and uniform image is created, leaving out information which does not fit in. However, it is known that this brain region processes information that gives a person an understanding of their body and its location in space. It would be reasonable to conclude that when this area is damaged or misprocessed, out-of-body experiences may occur.

Out-of-body experiences are explained by Blanke's theory and scientists of the University of Kentucky are trying to explain near-death experiences. However, these theories fall short when looking at Pam Reynold's case where these two phenomena occur together. For example, Pam Reynolds saw her body from the outside while brain-dead. How is this possible? A dream occurring in the brainstem may be a near-death experience, but the brainstem does not process out-of-body experiences from brain regions that have stopped functioning. The brain cannot be dead in order to process phenomena that occur in REM sleep induced by the brainstem. It is clear that these two proposed theories cannot explain the essence of near-death experiences.

Experiments with virtual reality technology only demonstrate that a person's brain is capable of convincingly mimicking exiting the body in certain situations, and nothing else. The chemical imbalance in the brain induced by the concentrations of certain chemical substances causes phenomena that are similar to near-death experiences. Therefore it is attempted to explain these phenomena as brain chemistry induced disorders. However, it can be concluded from all of the above that a person's brain is capable of mimicking near-death experiences, but this does not mean that all of these phenomena are automatically illusions created by the brain. We can assume that people experience actual or real exits from the body that are no longer illusory. This means that we have to be able to distinguish between an illusion created by the brain and an actual exit from the body, as we do between talent, disorder and homosexuality or the benefits of vaccines and their claimed destructive effect. As a rationale for these claims we present a thorough analysis in the next chapter.

### 1.8.2 Why must a person's exit from their body be an actual phenomenon?

Until now the near-death experiences can be considered the remaining functions of the dying brain or simply hallucinations created by the brain of a dying person. In order to completely agree with this view we must include aspects such as when a person witnesses their resuscitation attempts as a bystander. These aspects force to rebut current assumptions on why do near-death experiences occur. These aspects of this phenomenon are the hardest to explain and therefore near-death experiences cannot be considered the illusions of a dying brain. Considering these aspects the only possible conclusion is that consciousness can actually separate from neural tissue at the time of a person's clinical (and therefore also biological) death.

The most difficult element of near-death experiences to explain for scientists and practising healthcare workers are the out-of-body experiences. Currently there is no scientific explanation (except for this theory) that explains how people who have notified of their out-of-body experiences, are able to give such detailed overviews of what the healthcare workers were saying or doing during their resuscitation. Even more surprising are the astonishingly accurate overviews of the out-of-body experiences in which people are able to describe what happened somewhere else, as their physical body was laying on an operating table in a hospital. In the descriptions of near-death experiences there is very often the aspect of seeing the resuscitation attempts as a bystander while being dead, that the person later tells the physicians and they in turn confirm the person's claims.

For example, former Director of Estonian Puppet Theatre Meelis Pai has also had a near-death experience when he fell into a coma for 21 days. After waking from the coma he knew things that occurred when he was completely unconscious.

A person had to actually exit their body to explain such things. It's scientific conclusions are quite clear, but it's counter-argument is whether these "*stories of resuscitation attempts*" are to be believed. As the aspect of seeing their resuscitation procedures as a bystander while being dead is a part of the near-death experiences, and physicians can confirm this adequate information after resuscitation, it must be considered in research, otherwise stories of near-death experiences in

general become unbelievable, which is basically impossible. Here we will further outline some examples of such strange cases.

A 41-year-old man had such a severe heart attack that after 35 minutes of complicated resuscitation attempts the physician ceased the efforts and began to fill out the death certificate. Then someone noticed some sign of life, the physician resumed the attempts with electrical resuscitation devices and a ventilator and managed to restart the patient's heart. On the next day when the patient was becoming more responsive, he could describe almost everything that had happened in the resuscitation room in detail. The physician was very surprised. But he was most amazed by the patient's vivid description of the ER nurse that had stepped in to help the physician. The patient described her in great detail, including her hair and surname. He described how the woman had wheeled the cart with the electric shock device (main resuscitation device used in medicine) along the hallway. When the physician asked how he had learned the nurse's name and what she had done during his cardiac arrest, the patient said that he had exited his body and gone through the nurse's body - when he had gone to see his wife in the waiting room. While going through the nurse's body he had read her badge and remembered it in order to thank her later. The physician was truly astonished by the patient's story. He said that the only way to describe everything in such detail would be if the patient was present during the events.

A person born blind got into such a severe car accident that he went into clinical death in the hospital. The healthcare staff managed to successfully resuscitate him. In the next day when he was recovering he told the physicians in amazing detail about what took place during his resuscitation attempts. Although he has blind from birth, he could describe the appearance of physicians and the shapes of tools very accurately. Physicians were stunned by his story and did not know how to respond.

Even world-renowned scientists have had near-death experiences. For example, neurosurgeon Dr. Eben Alexander went into a coma in the fall of 2008 due to bacterial infection. One part of his brain called the cortex had completely stopped functioning, however the other parts continued to function. It is thought that consciousness is in particular related to the cortical area of the brain and therefore NDEs are considered disorders of the cortex. However, Dr. Alexander could not have felt or seen anything as the cortex had completely stopped functioning, it was not just impaired.

Pam Reynolds, singer and songwriter from Atlanta, was put into the state of clinical death during a surgical procedure in 1991. The Pam Reynolds case is one of the most famous in the world, as this case has been factually proven. Exiting the body and seeing a tunnel has been noted in many other near-death experiences. Nevertheless, the circumstances that Pam experienced during general anaesthesia and afterwards in clinical death, were later confirmed by the healthcare workers that had been present during her surgery.

Pam Reynolds experienced serious dizziness. The singer's ability to speak and move diminished. She had a computed tomography scan which revealed that she had a huge aneurysm in a cranial artery near the brainstem. This is very dangerous as it may burst and have lethal consequences. Death may occur during a common surgical procedure. The woman was treated by neurosurgeon Robert Spetzler, a specialist on therapeutic hypothermia. This procedure involves bringing the patient's body temperature so low that the heart stops. Clinical death follows. A person's brain is no longer functioning, but it handles hypoxia longer in low body temperature. Extended vessels are softened by the low temperature and the risk of vessels bursting decreases. Therefore the aneurysm empties and it can be removed.

The woman was treated by Spetzler and also more than 20 of his healthcare staff. She was put under general anaesthesia. To prevent her eyes from drying out they were lubricated and taped shut. The electrical activity of Pam's cerebral cortex was monitored with the electrodes of an electroencephalograph. Small speakers were put inside the woman's ears that measured the activity of the brainstem. 100 decibel clicks were emitted from these speakers. But it was during drilling of the skull that Pam felt herself exiting her body and after that saw how physicians were treating her physical body. The woman talked about this after the general anaesthesia. During such a surgery Pam could not have used her eyes or ears in any way. Nevertheless, she still remembers these thoughts (what she saw and heard) while she was floating in the air.

"I think it was strange how they had shaved my head. I had thought that they shave all of the hair off, but they did not," said Pam later. She very accurately described the bone saw and the noise it made: "The contraption that made an awful sound looked like an electrical toothbrush and it had a dent." Spetzler tried to cut open the upper layer of Pam's brain with scissors as a heart surgeon tried to puncture the femoral artery in Pam's right groin. Later on Pam had remembered the heart surgeon saying: "We have a problem". Her arteries are too narrow. After that a male voice had said "Try the other side". This conversation was later confirmed by the physicians, but Pam could not have heard it in any way, as she was under general anaesthesia and his ears were filled by the "deafening" clicking of the small speakers.

As Pam was put into clinical death as a result of low body temperature, the usual characteristics of near-death experiences began to emerge. She had flown out of the operating room and gone into a white tunnel. At the end of the tunnel they saw deceased friends and acquaintances. The woman felt that her soul was a part of God. She understood that everything that exists is created from this light or God's breath. However after this Pam's uncle

lead her back to her body. She compared it to diving into an icy pool.

About 4.2 percent of people have had a near-death experience. This has been shown in studies performed in the USA and Germany. Studies also reveal that the nature of near-death experiences is not affected by a person's sex, race, religion, education, position etc.

The repeating nature of the before-mentioned near-death experience cases is that the patient sees their resuscitation attempts as a bystander while being clinically dead. This aspect of the cases is repeating in time and therefore it can be objectively verified. For example, all over the world people are being resuscitated from clinical death almost every day and the confessions of these people contain a certain aspect. It means that if a person is clinically dead after a serious illness or accident, after their recovery (i.e. after successful resuscitation) it is possible to get their confessions of the experiences that took place at the time of their clinical death. This can be confirmed by the people who were present during the resuscitation attempts. Most of these cases include this aspect.

Although near-death experiences are allegedly illusions created by a dying brain, than why do we not see something else, like us sunbathing on a beach or swimming, hanging out with friends, driving a car, travelling to a nice place or performing our work tasks, as we do during usual dreams. Why do near-death experiences instead include unknown tunnels, Creatures of Light, a strong feeling of bliss, weightlessness, flashbacks on life and many other phenomena associated with near-death experiences that most people have never experienced in their lifetime?

As stated before, some authoritative scientists explain near-death experiences with the increase of carbon dioxide levels in blood. This means there is a strong association between near-death experiences and increased levels of carbon dioxide and to some extent potassium in the blood. Many scientists have considered the possibility that the patient could have briefly regained consciousness or felt something while half-conscious. It has been considered possible that nurses or physicians could have told the patient something later. Some scientists are of the opinion that the patient's descriptions may be so general that they fit into any situation. Nevertheless this does not explain the fact that a person is clinically dead, but at the same time sees and hears what is happening in the resuscitation room. It follows that carbon dioxide can change the chemical balance in human brain, but it clearly does not explain the out-of-body experiences during which a person, while being dead, sees how the healthcare workers are trying to resuscitate them. If a person can know something on the events occurring during their clinical death, this actually proves the existence of this phenomenon which many sceptically-inclined scientists in the world are just trying to ignore.

Nevertheless, near-death experiences are mostly considered illusions of a dying brain. There is a conviction that something is happening inside the brain, not outside of it. Almost all scientists are fairly convinced of this view. Nevertheless, there are aspects that call this claim seriously into question. For example, a person is clinically dead, but is still able to see the procedures the physicians are performing during their resuscitation. Later on when the person has recovered and is awake, they accurately describe what was done during the resuscitation and this description is very detailed and precise. This aspect has later surprised many physicians, including even sceptics. It is bewildering how a person can now exactly what was done during

their resuscitation while they were clinically dead. If a person is dead and according to sceptical scientists sees only the illusions in their brain, which may resemble a dream (one of the manifestations of virtual reality created in the brain), how can a dream depict events that also take place in reality or in the awake world?

When dreaming about walking or flying around a hospital room, a person does not do it in reality (i.e. while awake). In this case it is only performed in the dream. A person cannot possibly dream of what is happening at the same time during their resuscitation attempts. In this case the only possible conclusion is that a person could not have been in a virtual reality created by the brain, like a dream, rather the virtual reality created by the brain was very accurately matched to reality in space and time, therefore the person had to be awake and present at the time. It is a psychological fact that a person's dream world does not match to the real world in space and time, i.e. what is seen and heard in a dream does not materialise in reality. Therefore, a person's near-death experiences cannot be the result of illusions of a dying brain, as they match events that actually happen. Therefore consciousness was not dependant on the brain at the time of a person's clinical death, thus it was no longer necessary. One had to leave or separate from the brain, or to be apart.

There are no known cases in the world where a person dreams of seeing themselves sleeping as a bystander. However in NDEs patients have seen themselves as a bystander during a surgery. They could watch as the physicians and nurses were trying to resuscitate their dying body. However, in dreams people do not see themselves as a bystander as they are sleeping in their cozy bed. There is no such aspect in dreams.

People occasionally remember the dreams they have while sleeping, but usually they are not remembered. Remembering events from dreams later on while being awake is in principle the same as remembering actual events that have occurred while being awake. But we tend to forget dreams very quickly in contrast with actual events. Later in life we do not remember experiences from dreams almost at all or only remember very little and vaguely. However, in contrast with dreams, near-death experiences are remembered very clearly and in great detail, also for a long time after these were experienced.

The book "*An Encyclopaedia of Curious Phenomena*" describes much longer and in greater detail the research on whether NDEs are actually the last remaining functions of a dying brain or is there evidence that exiting the body is not merely an illusion created by the brain. It underlines a more thorough analysis on cases in which people see and hear things while being dead. This theory is also largely based on the data presented and analysed by the authors of this book.

### ***1.8.2.1 Objections of sceptical scientists to Pam Reynold's case***

Pam Reynold's famous near-death experience has been presented as proof of near-death experiences by many researchers and healthcare workers. It has been accepted as proof for example by cardiologist Michael Sabom in his book "*Light and death*". Sabom claims that Pam Reynold's near-death experience occurred at a time when her brain had completely stopped functioning. This is the most important aspect of the whole case.



However, critics and sceptical scientists around the world claim that the time spent on Reynold's surgery is misrepresented in general and imply that her near-death experience occurred while under general anaesthesia when the brain was still electrically active, that is hours before Reynold's heart was hypothermically stopped.

"Hypothermic cardiac arrest" is a myocardial infarction or heart muscle infarction or simply an infarction caused by hypothermia. Hypothermia is a condition where the body temperature of an organism has dropped below normal. For example, human body temperature is consistently around 37 degrees due to thermoregulation, but hypothermia occurs when the body temperature drops below 35 degrees. If left untreated, hypothermia can lead to a heart attack or infarction. A myocardial infarction is a condition where the circulation of the heart muscle is reduced or interrupted due to occlusion or narrowing of the blood vessels in the heart. This causes heart muscle necrosis and therefore interrupts normal heart function.

For example, anaesthesiologist Gerald Woerlee thoroughly analysed the case and concluded that Reynold's ability to perceive the events during the surgery may have been the result of anaesthesia awareness.

Anaesthesia awareness is being conscious of general anaesthesia which is sometimes called intraoperative awareness or accidental awareness during general anaesthesia. This is a rare complication in general anaesthesia in which patients resume consciousness during their surgical procedures. There are patients in the world who report various experiences, from vague, dream-like states up to complete wakefulness, inability to move and surgery-related pain. This is usually caused by administering an insufficient dose of anaesthetics (intentionally or accidentally) compared to the patient's actual needs which results in the patients waking up and becoming conscious during their surgical procedures.

However, as the cases of anaesthesia awareness are characterised by vague disturbances in consciousness or extreme fear caused by conscious bodily awareness accompanied by paralysis, the hypothesis of anaesthesia awareness cannot be considered. Reynolds confession includes very important components that are remarkably clear and especially free in nature. For example, her claims of complete lack of bodily pain or asthenia caused by the accidental physical experience of her lengthy surgical procedure.

The hypothesis of anaesthesia awareness cannot be considered due to the fact that Pam Reynold's near-death experience occurred when her brain had completely stopped functioning. This is an important aspect to take into account.

The clinically experienced anaesthesiologist Woerlee has examined this case in detail for many years and concluded that there is no direct need for a paranormal explanation. He points out that Reynolds was able to give testimony of her experience some time after recovering from anaesthesia, as she was still intubated while regaining consciousness. This would enable her to associate and elaborate the sensations experienced during the surgery with existing knowledge and expectations. The fact that she described the small pneumatic saw used during the surgery, does not impress Woerlee, as the saw sounds and somewhat looks like pneumatic drills used by

dentists.

However, this argument cannot be taken seriously as Reynolds does not describe only the objects used during her surgery, but also the actions performed (movements, their order, positions in the room etc.) during her surgery. These testimonies are more than just descriptions of a pneumatic drill or saw that everyone can memorize from textbooks.

Nevertheless, the well-known psychologist Chris Frenchi also agrees with anaesthesiologist Gerald Woerlee's views.

Leading neuroscientist Steven Cordova of Barrow Neurological Institute who has the pre-operative technician on Pam Reynold's surgery and responsible for inserting the speakers into Pam Reynold's ears before the surgery, gave Michael Sabomi a personal testimony in 2006, in which he explained that the speakers were moulded into both external auditory canals and secured with excessive tape and gauze in order to fix the earphone securely into the auditory canal. In the supplement part of his controversial article from 2011 that challenges the survival interpretation of Reynold's near-death experience, Woerlee gives the reader instructions on how to recreate the hearing conditions in which Pam Reynolds was able to register the sounds in her operating room. However, in his sceptical articles Woerlee only notes the use of padded headphones or just headphones and does not mention that lots of tape and gauze was placed on top of the headphones.

By now it can be stated with certainty that the general consensus within the researchers of near-death phenomena is that Pam Reynold's recorded near-death experience represents a serious challenge for a materialistic world-view. The renown anaesthesiologist Woerlee's attempts to explain in materialistically cannot objectively be the only correct interpretation, as he cannot consider all aspects of this phenomenon.

### ***1.8.2.2 Contact with extraterrestrial civilisations***

There is a medical issue in near-death experiences that does not have a proper and all-encompassing scientific explanation for exiting the body. There is also the aspect that if the actual existence of NDEs could somehow be proven, it would basically also prove that life continues after (brain) death. However, this also means that all deceased people who have lived on Earth, have to be living "somewhere" in an out-of-body state. If this is the case, than the question is why have these previously "deceased people" not contacted us (i.e. the living) and in what world are they indeed living in? Perhaps they have contacted us but in a way we could not have expected.

They (i.e. the people who have left their body) may for example be contacted by clairvoyants and other psychics who claim to get information from "the dead" that cannot be obtained by any other earthly means. These "special people" themselves claim that "the spirits" of dead people or people who have exited their bodies (whose "physical" bodies may have been deceased for a long time), give them information on certain situations or phenomena. However it must be noted here that in case of NDEs the deceased relatives and acquaintances are often encountered.

NDEs do not only include the separation of consciousness from the biological body, as in addition to deceased acquaintances and relatives people see some kind of a tunnel, which is sometimes called "*the entrance*". It strongly suggests that these are space-time tunnels or



wormholes that could be described by Albert Einstein's general relativity equations. The existence of such tunnels is described by the physics theory of time travel. These space-time tunnels mediate the teleportation of physical bodies in time and space. If these are actually seen during NDEs, then if the phenomenon of NDE would be proven so would the existence of these tunnels. It can be assumed that these space-time tunnels take people who have exited their body from the Earth to somewhere far away, as space-time tunnels are used only if travelling to great distances. For example in science fiction literature these are used for intergalactic travels. All of this suggests that a person can find themselves in an extraterrestrial civilisation after death.

The above-mentioned conclusions and claims would be valid only if the existence of the NDE phenomena could be proven. However such a discovery would lead mankind into culture shock, as it would rebut almost every aspect of today's scientific world view. If the existence of NDEs could be scientifically proven, it would also be possible to make very substantial and definitive conclusions about the existence of extraterrestrial civilisations, in which case it can be stated that intelligent life exists in a form which we would understand in an out-of-body state.

However the core issue is that why have attempts to prove the existence of NDEs failed? The greatest assumption of modern science is that it must be based on empirical (i.e. experiential) data which can only be a human-designed experiment. However this greatest assumption of science is the biggest hurdle in researching NDEs, as the lack of empirical proof means that science does not acknowledge this phenomenon. However, a very specific fact must be taken into consideration here. For example, an extraterrestrial civilisation (including deceased people) could knowingly use in their advantage the strict rules of the scientific world view created by the people on Earth. This means that extraterrestrial civilisations likely wish that their existence would remain on a religious level, not be a scientific fact. The scientific experience to determine the nature of the NDE phenomena would include asking the patient about a hidden object upon waking, which would be in a place during their clinical death that the patient could not have seen from the bed. This is probably not feasible, as extraterrestrial civilisations would simply not want it. Otherwise our whole world view would be seriously "ruined" which would cause aliens to populate the Earth, as they would no longer need to hide themselves from us.



## Author's declaration

The author have declared him have no conflict of interest with regard to this content and ethics committee/IRB approval is not relevant to this content.

## Data availability statement

Data sharing not applicable to this content as no datasets were generated or analysed during the current study.

## About the company

“*MLK Technology and Science Ltd*” is a startup company primarily engaged in scientific research on wormholes and technology development. The official data of the company can be seen on the websites:

- 1) <https://ariregister.rik.ee/eng/company/17008425/>
- 2) <https://orcid.org/0000-0002-3223-6099>
- 3) Company homepage: <https://www.technologyandscience.eu>
- 4) See more here: [https://zenodo.org/communities/time\\_travel/](https://zenodo.org/communities/time_travel/)

Area of activity: scientific research and development, research and experimental development on natural sciences and engineering, other research and experimental development on natural sciences and engineering. The company is registered in the Republic of Estonia (EE), which is a member state of the European Union (EU).

## References

- Aarma, August. 1999. *Basics of research methodology*. Tallinn: Tallinn University of Technology.
- Laanemäe, Aare. 2007. *Culturology*. Tallinn: Publishing house “Ilo”.
- Piirimäe, Helmut. 1998. *Man, society, culture I*. Tallinn: Publishing house “Koolibri”.

Allik, Jüri; Kreegipuu, Kairi; Pullmann, Helle; Realo, Anu; Vadi, Maaja; Schmidt, Monika. 2002. *Psychology for high school*. Tartu: Tartu University Press.

Bachmann, Talis ja Maruste, Rait. 2011. *Basics of psychology*. 3. tr. Tallinn: Publishing house TEA.

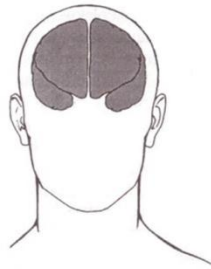
Farnaz Ma'sumian. 1997. *Life after death*. Tallinn: Publishing house TEA.

*Wonderful History*. Nr 7/2013.

„*Death on the Border*“, „*Life after death, a skeptical inquiry*“; executive producer: Erik Nelson; © MCMXCVIII Termite Art Productions, LLC, All Rights Reserved.

Mart Vabar. 2006. *Economic geography: opportunities, threats, systemic integrity and perspectives of global development. Study methodical material*. Tallinn University of Technology, Institute of Public Sector Economics, Chair of Public Sector Economics. TTU Publishing House. Third edition.

„*Breaking the time barrier, the race to build the first time machine*“, Jenny Randles, Olion, Tallinn 2006, translated Jaan Kabin.



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