Dissertation for Dr. Philos.

Mind and Matter in a Single Cosmic Model

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Colophon

"I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness."

-Max Planck (1858-1947) was awarded the Nobel Prize for foundational work on quantum mechanics.

"The day science begins to study nonphysical phenomena; it will make more progress in one decade than in all the previous centuries of its existence."

- Nicola Tesla (1856 - 1943) inventor of alternating current and the electric distribution grid.

This project is an effort to speed up a journey towards "the day science begins to study nonphysical phenomena".

Existing knowledge from different sciences are combined to present new interpretations, perspectives and conclusions that seem to enable a physical definition of the intractable 'nonphysical'.

This document is formed as a doctoral thesis, but has not been accepted for evaluation by a competent comity. It presents an in dept analysis by providing copies of peer reviewed and published articles and a book written for the general public. An introductory synopsis gives an overview and also some new proposals that have not been included to the published articles.

Sciences influencing this thesis:

Psychology: How introspection can observe and describe the mind in ways that enable particle physics to model the mind and its content.

Theoretical physics: A new interpretation of the requirements from string theory to the real world enables modeling a new cosmos that consists of parallel universes, - one being physical and others being nonphysical. Living beings are supposed to interfer with all universes continuously. Universes are based on string particles that are symmetrically broken down from more complex mother particles during Big Bang and a higher breaking point. Brane theory which is included to string theory, gives the mathematical definition of the universes and the interaction between them.

It is also explained how negative energy has qualities specific for life, leading to a definition of consciousness that might enable particle physics to model a nonphysical substance holding the consciousness.

History of science and the psychology of science: How the mainstream scientific culture has related itself to phenomena not yet properly understood, such as 'nonphysical' and 'nonlocal'. How human psychology, with its tendency to be influenced by beliefs and mythical thinking, tends to hamper rational thinking in areas where science is not well established.

Science theory: The definition of what science is, and the general understanding of how science should operate, might not be optimal. Research within established fields and established frames of understanding has a very high prestige, while research on the greatest enigmas that are not properly understood, are often excluded from respected fora. A couple of decades ago, scientific study of consciousness was virtually non-existent and not well accepted in mainstream. Today the number of international conferences of consciousness is growing and several groups seem eager to be the first to make a breakthrough of understanding this enigmatic part of the human being. Neurology is regarded as the most probable science to understand consciousness in depth. This analysis concludes that theoretical physics is the only way to really understand consciousness and other nonphysical phenomena. However, a conservative materialistic frame of understanding still seems to limit the outcome of the scientific endeavors in this field. If nonphysical phenomena are real and based on nonphysical particles that, in some ways, are different from the physical particles, then common attitudes and conventions of behavior in mainstream sciences seem to prevent progress. A modified definition of science might enable mainstream to navigate this field in a more neutral manner.

Neurology and microbiology is not much discussed in this thesis, but these sciences are probably important for making a detailed model of the communication between the physical/mechanical body and the nonphysical/mental.

This thesis

is based on scientific work made by others. Its main contribution to science is new interpretations of established facts and observations. It has two main focuses

1: How to interpret and describe introspective nonphysical experiences in ways that can be used as bases for scientific modeling.

2: How string theory can model nonphysical particles and include the mind and the consciousness to an extended cosmic model. The resulting model is then both based on experience/observation and is compatible with the existing physical model of the cosmos.

The subjects mentioned for the history of science and science theory, are only loosely discussed. These subjects deserve their own research.

A doctoral thesis shall normally show a mastery of research methodology. This dissertation is focused on the first creative phase of a scientific endeavor where no methodology is established. The research part of this thesis is also directed towards the mind, which requires a different methodology than working with physical experiments. Research on the mind by using introspection is not generally recognized as a scientific activity today, but it seems to be the only means to explore certain aspects of life and cosmos. Science needs to address this in some way. Introspective research is bringing real experiences out of obscurity and into a rational context. Like other research, it often requires many small steps over an extended time, towards rational clarity. The spontaneous and intuitive activity of the mind is the source and also limitation of what can be understood and laid out in words. One of few methods to improve access to the spontaneous and intuitive content of the mind is practicing nondirective meditation techniques.

Background

for this dissertation is the author’s early interest in psychology and psychological issues. Technical education including a master in theoretical electronics enabled an association between physical fields and the nonphysical, mental content. Practicing and voluntary teaching meditation and yoga increased his need to know how the mind worked. The mind seemed to have two different inner rooms where the attention could stay. Mental activity associated to these rooms differed from normal rational reasoning, which is associated to the outer physical room. Information about how the early Indian culture regarded cosmos as containing three worlds, the physical, the mental and an all pervasive, supported the observations and view of the nonphysical as something real. When a colleague explained how the string theory had several extra dimensions, and should be able to explain everything from daydreams to galaxies, then a process started that completed 10 years later with this thesis. The author's professional career in concept engineering has been helpful for the outcome.

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Several referees of the published articles gave critical comments that enabled increased clarity.

CONTENTS

Totals: a synopsis, four published articles and a book, separated into six sections.

Synopsis gives an overview with an emphasis on the explanation of the mind based on introspection.

Modeling the Dark Universes focuses on dark matter and dark energy and how the multidimensionality of string theory can explain the measurements.

Negative Energy Explained by an Imaginary Speed of Light focuses on how the qualities of negative energy support an assumption that consciousness is part of cosmos and based on negative energy.

Roadmap to a Cosmic Model that Supports Nonphysical and Nonlocal phenomena Description in more detail on how theoretical physics could use string theory to make a new cosmic model that includes mind and consciousness.

How Physics Could Explain the Mind Review of some reasons for the hostility among scientists towards nonphysical research. Description of the inner worlds, enigmatic physics, string theory and how string theory could model the inner worlds and explain the enigmas.

The book ***Consciousness and Cosmos*** has its own table of contents and is a wider presentation and discussion for the interested public.

SECTION 1

SYNOPSIS

1. Introduction

Materialism was established by Democritus 2500 years ago when he proposed that everything can be broken down to a certain smallest piece, called atom. Thoughts and mind was at that time not included to "everything". It was part of the seer and could therefore not be separated from the seer as an object to be inspected.

500 years ago thinking and thoughts were liberated from the seer, so that Descartes could relate to thoughts being something separate from him self. He called thoughts **nonphysical** and said that nonphysical phenomena are separated from physical objects by a duality and they can never be reconciled. Descartes also said "I think, therefore I am" and connected thoughts to what we now call consciousness and identity. Present day materialism assume that thoughts, consciousness and other nonphysical phenomena, including our subjective experiences, is a direct consequence of material activity and has no energy by itself, and, in a way, is nonexistent for natural sciences.

Consciousness, thoughts and mind is today not understood or explained by natural sciences. A discussion about the mind-brain-relation (section 2) has therefore evolved within scientific communities the last years. The two alternatives are: 1): The materialistic view is that the brain is the primary, creating mind, thoughts and the conscious experience. 2): The competing view sets consciousness and mind as the primary, creating and forming the brain. There are interpretations of measurements supporting both views. Since there is no explanation of nonphysical phenomena, natural scientists and official opinion tend to prefer the first solution. The second solution has a better acceptance among the general public and mind-workers such as psychologists. This project shows how nonphysical phenomena can be part of natural sciences and a new cosmic model. We could talk about a new extended materialism that incorporates nonphysical matter.

Nonlocal is another verified phenomenon that along with 'nonphysical' cannot be explained by temporal sciences. Experiments of quantum entanglement confirm spatial nonlocality: Two separate physical particles can have a common function that is independent of physical distance. The double slit experiment with single photon transmissions adding up to wave patterns could express temporal nonlocality. The different photons have a common knowledge of photons sent earlier and later.

The qualities of space, matter and time are understood and modeled by particle physics, which means that if we want to explain or make models that include nonphysical and nonlocal phenomena, we would have to use particle physics. String theory is a particle physics theory capable of modeling all known elementary particles, including the gravity force which cannot be modeled by the accepted 'standard model' of particle physics. The string theory is, however,

controversial because it requires some features that cannot be part of the universe such as measured with physical instruments. Also no prediction has been made that could confirm or refute string theory. 'String theory' as used here includes M-theory, brane theory and supersymmetry. It seems perfect for modeling a cosmos that includes consciousness and mind such as observed by introspection and described below.

In order to include nonphysical phenomena to natural sciences, we assume that these phenomena are based on nonphysical particles, such as can be modeled by string theory. Physical and nonphysical particles must then inhabit different branes/universes. According to string theory, the only force acting between branes (and between physical and nonphysical particles) is the gravity force and none of the other cosmic forces (electromagnetic-, strong- and weak force). This feature of string theory is explained further down. Dark matter and dark energy can be nonphysical according to this definition and the present state of measurements (section 2).

2. The consciousness

Scientific research on nonphysical phenomena is difficult because physical instruments using the electromagnetic force (e. g. particle collisions and imaging) cannot measure these phenomena, and gravity measurements of normal size phenomena are not possible with present state of technology. Another and more direct approach to do research on these phenomena is to use our mental capacity of observation and description, called introspection. After all, direct observation is the only means we have to observe. Instruments are just aids to observe where our senses fall short. When instruments fall short, such as for the hypothesized nonphysical phenomena, we have to revert to direct observation.

In order to make a scientific definition of consciousness, we start with our experience: Consciousness is here defined as our innermost capacity to observe and act. We can observe and act both inwards and outwards. We can observe both physical items and nonphysical phenomena. The expression 'consciousness' is often associated to a mental state such as 'wake and self-conscious'. Here, it is associated to a nonphysical body based on a kind of nonphysical substance. This observing and acting inner body can be in different mental states, or expressed differently: have different **frames of understanding** such as wake and self-conscious, dream, and deep sleep. The consciousness has no identity or frame of understanding in itself. It represents only the act of understanding, - whatever it is or however it is understood. Chunks of consciousness is identified with or attached to bodies consisting of physical and/or mental matter, which also gives the level of, or frame of understanding. These definitions and way of understanding can isolate and separate the function of consciousness and others, and give clarity to something that has been a tangled knot of incomprehension. Further elaboration is given below. You can say that materialistic reductionism has reached the mind and the consciousness.

The consciousness has an **attention**, which is the mental sensory organ. It is normally **seated** in (identified with) the head. For small children it seems to be seated in the belly. Some persons have experienced the attention to be seated outside the physical body during so-called out-of-body experiences. The attention has a **target** that can be directed by will for all persons, - to various places and also to various times by memorizing and planning. The attention is normally locked to a certain steadily travelling time. Our consciousness or identity is bound to physical matter and mind-matter which both have an inherent dependency of time. Physical atoms and mind atoms need time for their existence. Our attention can leave this flow of time only in short moments such as in deep sleep when it is seated in something which is timeless (see below and section 4 and 5). We can chose to open up the **scope of the attention** to perceive the whole (open mental attitude), or narrow the scope to be aware of only a small detail (concentration). Very strong concentration, such as in wartime battles or accidents (life threatening situations), can make us perceive in slow motion. This is often used in movies to emphasize dramatic moments. Time is passing slowly in this state of mind. An open mental attitude, as experienced in non-directive meditation techniques [1], stimulates what is called '**deepening of the mind**'. In this state, time can pass faster than normal. Analysis of the string theory and its 11th dimension (section 2) indicate that we could move along a cosmic dimension when concentrating more or less or the mind is more or less deepened. This is a degree of freedom for the target of the attention in the same way as the target of the attention can wander in time and space. This extra dimension can also be called **'speed-of-time'**.

The seat of the attention seems to be attached to our identity. This can also have a wide or narrow scope. A narrow identity is egocentric and can easily be seen as representing low moral. A wide identity is more altruistic and can easily be seen as having high moral. The scope of the seat of the attention cannot easily be changed, but can be modified in small steps by the way we choose to act and which thoughts we allow into our attention and the willingness we have to change perspective.

The target of the attention has a **focus** (day vision) that perceives details clearly, and a **periphery** (night vision) that perceives more vaguely. Eyes are built up accordingly with dots for bright color day vision at the center and rods for dim, grey, night vision at the periphery.

We can recognize three different wills. The **rational will,** the commanding I, can take a decision to stop smoking. The **emotional will**, which is controlled by emotions and needs, represented by the spontaneous preconscious activity of the mind, can be different and make us start smoking again. The existential or **intuitive will** can make us do things that we have no reason for, or no personal need for. Some say they act on a calling. This division into three parts of the physical and mental cosmos is basic and characteristic, as we shall see below.

Consciousness is outside this three-divided world and expresses itself through the actions we take. This means that the way we act in the physical and mental world

is the result of our consciousness acting, being influenced by rational, emotional and intuitive wills. The wills are all part of the physical and mental worlds. As a conclusion we can say that the consciousness is able to observe in different ways, being influenced by the different wills and express it self through a chosen activity, that can be conscious or unconscious to the rational self-conscious part of us.

Our inner observer cannot observe it self. Anything observed must be different from the observer. Here is probably a basic duality of the cosmos, - between consciousness on one side and observable phenomena on the other. Descartes pointed at a duality between physical phenomena and nonphysical phenomena. The duality between consciousness and observable phenomena is probably more basic. This view is supported by the string theory presented below and by the probable existence of negative energy.

The mass-energy equation $E=mc^2$ was published by several persons, - and finally by Albert Einstein in 1905. In the 1920ies a more complete energy equation was derived from relativistic quantum mechanical equations: $E^2 = p^2c^2 + m^2c^4$. p^2c^2 is much smaller than m^2c^4 and expresses the movement and momentum energy. The energy of matter can be expressed in a simplified equation with two solutions: $E = mc^2$ and $E = -mc^2$.

This solution of the mass-energy equation from quantum mechanics says that negative energy is real. Negative energy was associated to negative matter. No evidence of such matter has ever been found. All physicists agreed that the second solution with negative energy could be discarded since it gave no physical interpretation. Quantum mechanics has never failed, so why should it be wrong this time?

Luigi Fantappiè (1901–1956) was one of the most brilliant mathematicians of his time. He wanted to look at the negative energy solution from a pure mathematical point of view. As he started to list the properties of the negative energy, he found that they all were descriptive of "life" as opposed to matter, such as table 1 shows:

Properties of positive energy	**Properties of negative energy**
Characteristic for matter.	Characteristic for "life".
Have a cause in the past.	Have a cause in the future.
Order and structure is reduced with time.	Order and structure is increased with time.
Energy disperses with time.	Energy concentrates with time.
Governed by the law of entropy. Any use of energy will increase entropy.	Governed by the law of 'syntropy'. Any use of energy will increase syntropy.

Table 1: Properties of positive and negative energy

Anything sentient beings do has a cause in the future, because we do things in order to get to a new desired state afterwards. That intended resulting state is the cause of all our activity. That is a landmark of 'life' as well as 'consciousness', - and of negative energy. Fantappiè saw that the negative energy was governed by a law, symmetric to entropy. He named it syntropy. He saw that if his findings were correct it would change the whole basement for understanding the cosmos and he found it difficult to accept his own conclusions. His work was not at all recognized by his colleagues and in reality forgotten after his death. Two Italian scientists, Ulisse Di Corpo and Antonella Vannini have rediscovered Fantappiè and are now promoting his ideas [2].

If consciousness is equal to "life" and based on negative energy such as incurred by Fantappiè, it is certainly basically different from the rest of the cosmos. A deeper analysis and interpretation of negative energy can be found in section 3.

The description above is proposed as a definition of consciousness. Any process driven by negative energy, a closed system that increases order with time, is conscious by definition. The physical body and the psyche can be seen as tools used by the consciousness to observe and act in the outer and inner worlds which are made of positive energy.

3. The mind

Nonphysical phenomena and their observation seem to be associated to an inner space called the mind. If we are going to understand the mind by means of physical theories, then we must describe the mind accordingly. A description of the mind and its phenomena are not as obvious and straight forward as a description of physical objects, so we must take care to get things right. Descriptions below are established, based on experience from an organization (Note 1) where introspection and contemplative techniques have been used to explore this realm in a scientific environment. Scientific research has also been published from this group, such as [1].

Neurologists know which parts of the brain are used for storing and recalling memories, but they have not found the storage medium. If we accept the introspective experience, that the mind is a separate room and a real nonphysical world, there is a possibility that the memories are stored in nonphysical matter. As we in addition know that conscious, deliberate activity may cause the brain to change [3], it is not unreasonable to think that the mind could be the primary, over time causing the brain to form and adapt to the needs of the consciousness. "Arbitrary activity in the brain creates mind and consciousness" is an impossible starting point for understanding psychology and living beings. Further description of the mind is based on an assumption that the mind is real, based on real matter and energy, just different from what we know from contemporary physics.

The consciousness can use the body to influence or create something in the physical world, but we can also act and create items in the mind such as emotions,

mental images and mental sound. If you speak out “envelope” loudly, then vibrations are created in the air so that your self and others can hear what you are saying. If you say “envelope” in your thoughts, some traces are created, so that you can observe it with an inner sense. We seem to have a mental sensing system, which is working in the inner room. We are able to observe both the **spontaneous activity** of the mind, which we can only facilitate or suppress but not change the content of, and the results of our own **volitional activity**.

There is always some spontaneous activity going on in the mind. The corresponding part of the brain is called ‘**default mode network**’. Some of it may come from our own psychology that functions autonomously and independent from our conscious will, but could some mental activity also come from other person's psyche? Superficially observed, each mind seems to be independent of other person's mind, but sometimes we seem to observe content of other persons minds, such as in telepathy and clairvoyance. When we shut our eyes and observe inwards, the inner senses could operate in a **psychological universe,** which is common for all of us. The outer physical universe contains trees, suns and galaxies. The psychological universe contains **psychological residues**. Each residue is connected to a certain moment in time and is a container for emotions, memories, images, self images and something we could call value, world view or philosophy that influenced us in that specific moment. Some residues have a strong emotional charge and can be called traumas. Residues with no charge can be called neutral memories. When the attention comes close to a residue, the tension tries to hold our attention and the content of the residue tries to influence us so that the situation is recreated. We have a new opportunity to act differently and reduce some of the tension, - or stress as we usually call it. If we don't allow the residues into the attention, the charge/stress will normally increase over time and influence us in a negative manner.

Distance in this inner universe can be measured as **emotional distance**. Emotionally connected residues are close to each other. Thoughts and emotions of our beloved ones are also not so far off. Unlike the physical universe, which is connected to daylight, the center of attention and **rational thinking**, the psychological universe is connected to darkness, the peripheral part of the attention and **magic-mythic thinking**. When we dream, our attention is fully embedded (with target and seat) into the psychological universe and the consciousness, our observer, is trapped within a **magico-metaphysical frame of understanding**. It is possible to be self-conscious during dream sleep. That state of mind is called lucid dreaming.

There might be a different part of the mind with totally different qualities. You can come in touch with it when looking into a fire or hiking in the mountains. It is felt as important moments. The mind is quiet. The sensation of time and space is withering. The spontaneous activity of the mind is more ephemeral and has a different quality than for rational and mythical thinking. Our attention seems to approach a second part of the mind. We could call it the **Intuitive room/universe**

having **intuitive thoughts**. The literature use metaphors like “the inner silence”, “the timeless” or “the pre-verbal” for this phenomenon. The content of an intuitive thought is much more complex than a rational thought and has therefore higher information density. If we manage to “unpack” an intuitive thought, it will adapt in a certain way, suitable for the situation, - as a piece of art, a machine construction, a way of behavior or something different, depending on the situation and which competence we have. It is not easy to catch an intuitive thought, but sometimes this seems to cause a feeling of creative “flow”, or it could lead to a rearrangement of our understanding of the world. It is as if we start using a new part of our mind, - a consciousness expansion. Something that used to be difficult can suddenly be neutral because it is understood in a different way.

Intuitive thoughts of the intuitive universe are **non-phenomenal** in the way that they have no expression that we can put a name to, but they do have a kind of quality or tendency. E. g. empty space is a non-phenomenal entity, but physical objects cannot exist without this quality given by empty space. Non-phenomenal entities can be transformed to, or collapse to, many different rational and mythical thoughts that express some of the qualities of the intuitive thought. Intuitive thoughts are difficult to perceive, not because they are “unconscious”, but because the rational or magico-metaphysical frame of understanding we normally use cannot perceive them. A more ethereal and slumbering part of our mind has to be used for perceiving these complex thoughts. Intuitive entities resemble holographic images that contain a lot of incomprehensible information that can be projected into a rational and magico-metaphysical frame of understanding as specific thoughts, adapted to a specific situation. After getting in touch with an intuitive thought, days and months can be used to settle it properly into our lives. We can say that an intuitive thought collapses to an incarnation in time and space. For a different person in a different situation, the same thought could collapse to something different, but it would express the same quality in relation to the specific situation. Intuitive thoughts resembles quantum waves (Note 2) in that they contain a complex whole that can collapse to a specific phenomenon depending of the situation, such as light can be measured as a particle or a wave depending on the arrangement of the measurement. The intuitive universe seems to contain quantum waves and could be a quantum mechanical universe.

Such as we have psychological residues in the psychological universe, we could also have parts of our psyche in the intuitive universe. We call it the **personality** and the **timeless Self**. Personality traits are represented by habitual ways of thinking and acting that we are not able to observe our self, even if friends try to inform us. The timeless Self is our deepest identity, often illustrated by a shining light. Two persons having “good chemistry” can feel closeness, even if they are not physical close or emotional close. Their Selves are close in the intuitive universe where distance is measured in quality distance. During deep sleep, our attention is completely embedded into the intuitive universe. It is possible to be self conscious while in deep sleep. This state of mind is called yoga nidra. Figure 1 sums up a perception of the mind such as explained above.

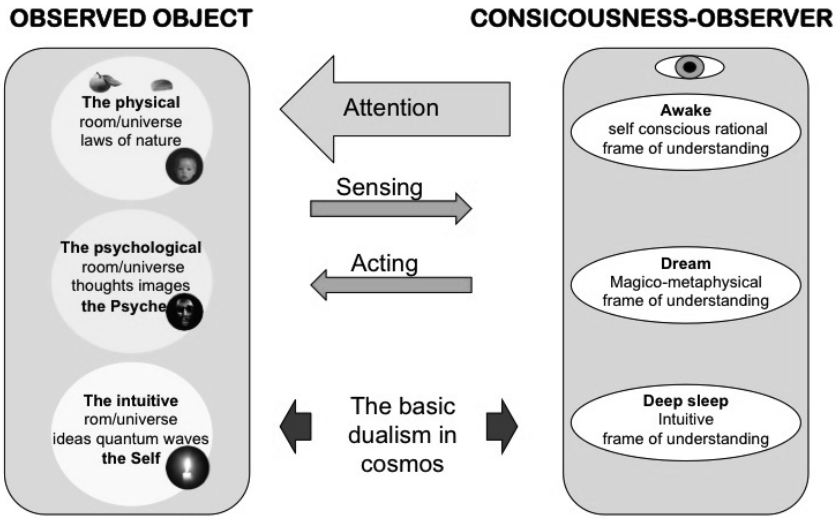

Figure 1: A perception of the mind based on introspection

4. How string theory and the mind model support each other

There are various models trying to describe the mind or explain consciousness in different ways. The mind-model presented above seems to be the only one defining what we perceive as nonphysical, which also can be explained by a theory of particle physics. This thesis presents nonphysical matter and psychological phenomena as separate parts of the cosmos. A thought, fantasy or emotion, are entities created in nonphysical matter which we are able to observe with an inner sense. Parts of the brain can sense thoughts and muscles can sense emotions. After something is picked up by a sense, signals are sent to the brain. The brain can exchange signals with the nonphysical consciousness, so that we become aware of what the senses perceive. Below, I will show that the physical universe, such as known by temporal physics, plus the model of the mind, such as shown above, including the interaction between these three realms, is exactly what the string theory describes with its equations and requirements to the world. Information on string theory is gathered from books written by string scientists for the general public such as [4], [5] and [6]. String theory is developed by several thousand physicists over several decades.

The string theory assumes that all elementary particles (the smallest pieces of matter and force) are made of vibrating strings instead of being points with no extension. The mathematical equations require the strings to vibrate in nine different independent directions called spatial dimensions. We have only three spatial dimensions in our physical universe. If a string can vibrate into three universes simultaneously, then the requirement from the equations will be met. The two rooms of the mind (the psychological- and the intuitive-) can be regarded as universes in line with the physical universe, only that they exist in parallel. The particles, forces, spatial dimensions and laws of nature are different from universe to universe.

The string theory requires the real world to contain surfaces or rooms, called **branes**, where the ends of open strings are attached. String scientists have proposed that the universe could be such a brane. As mentioned above, the two rooms of the mind could be two other branes. The string theory defines how matter from different branes interacts. It matches well to observations of nonphysical phenomena. The string theory also defines many elementary particles that have not been observed. If these particles make up matter in nonphysical branes, the particle detectors used today cannot detect them. In other words: the string theory has defined particles that could make up matter of the mind, where mental residues, personality and the Self can be stored. This matter could also make up the bodies of spirits, angels and gods, to the extent that these beings are real. A more detailed explanation can be found in section 4.

Measurements of dark matter and dark energy cannot be explained by the accepted theories of physical matter. The measurements are elegantly explained with the string theory if dark matter and dark energy make up matter in two branes that exist in parallel to the physical universe (section 2). This means that dark matter makes up matter in the psychological universe and dark energy makes up matter in the intuitive universe. The measurements can be seen as a first experimental confirmation of string theory and the model of the cosmos presented here.

Super-symmetry of string theory requires all known elementary particles to be broken down from more complex mother-particles that existed at (much, much) higher temperatures than what we can achieve in the physical universe. The supersymmetric particles that were connected to the known physical particles to form a mother particle have never been found. They could reside in parallel branes. The Big Bang could actually be an occurrence where a brane containing particles of pure energy was cooled down and broke into the three branes described above (section 2).

There could also have been a **higher order breaking away**, when positive and negative energy (consciousness and observable phenomena) were so tightly bound together by an identification force that there were no difference between the observer and the observed. This cosmic starting point, the **seed point**, can be seen as a singularity containing all time, all space and all energy. As dimensions, time and space expanded, our known universe with matter, mind and consciousness emerged. We all feel the identification force as we identify ourselves with our psychology and our bodies. According to string theory, the identification force could be modeled by an open string having one end in the negative energy brane and the other end in the positive energy brane (section 4). The cosmos will continue to evolve into eternity, where the state of the cosmos seems to mimic the seed point. The difference between the start and the end is just a flip of the attention. The start is a complete blind identification between the total consciousness and the total material world. The end is an observation by the total consciousness of the total time-space, - a complete observation of everything and nothing particular. This is a singularity. You can come as close as you wish from

both sides. The singularity itself can be traversed by a flip of the attention. Cosmos is a totally symmetric system, - the ultimate beauty. The beast is found in our everyday struggle, caused by our narrow scope and missing capacity to observe.

Can we see a meaning of life in this model? That is difficult, but there seem to be a trend of change in time, - from a narrow identification to a wider identification. From concentration and identification with a narrow here and now, excluding everything else, to a deepening of the mind where all time and all space is included to here and now. To act in support of this trend will usually give satisfaction. Working against this trend will usually cause pain and suffering.

Answers to some remaining questions can be found in the remaining parts of this thesis.

- *How can psychology influence the genes (epigenetics) and how can mental forces move physical objects?* Newton's law of gravity gives strong attraction on very small scales. That can occur when the electromagnetic force do not repel atoms from merging into each other, which is the case when one physical and one nonphysical atom approach each other. Nonphysical matter can snap to physical matter, so that physical matter hangs on to mental matter when it is moved by a mental force. (section 6, ch. 2.4 and 2.5)
- *What are the limits of the physical universe?* The speed of light in the physical universe makes any observational position the middle of the universe. The Big Bang is the observed outer limit of this universe (called particle horizon by astrophysicists). Physical distance might not exist beyond the circumference of this sphere. (section 6, ch. 2.2)
- *How can reincarnation take place?* The seat of the consciousness could leave the physical body together with the psychological body at the moment of death. Later it could also leave the psychological body with all its memories. Then it can re-enter into an embryo, carrying along only the Self and the personality. (section 6, ch. 2.11)
- *What is the mystical experience and how can it be explained?* If the attention can wander along all dimensions, the 11th dimension of string theory, at the extreme, enables the attention to grasp all there is in one timeless and dimensionless 'now' (section 4).
- *How can communication between different universes/branes take place, e. g. brain-mind and brain-consciousness interactions?* Closed strings such as the graviton, can cross brane boundaries. Gravity can transfer emotions into the muscles, but does not seem versatile enough to provide all the required signaling to and from the brain. One or more such weak forces could have remained undetected. The not yet discovered 5th cosmic force must be modeled as a closed string; it must be weak as gravity and must interact with brain signals. Its discovery is proposed as a challenge for young scientists. They can

start with research on Kirlian photography which is assumed to make images of the aura. If the 5th force is confirmed, will it then be regarded as a proof for the correctness of string theory and the cosmic model given here?

This work represents a concept analysis. New views and new possibilities for understanding are presented. A scientific treatment of this material will look into details. The model of the cosmos proposed here infers that only particle physicists can solve the hard problem (Note 3) of consciousness and establish a new cosmic model.

References

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Notes

Note 1. Acem International School of Meditation, acem.com, have approximately 150 volunteers that teach meditation. 20% of these have a PhD and 10% have a title of professor, - several in medicine and psychology.

Note 2. Quantum waves explained on the Internet:
http://phys.org/news/2012-04-quantum-function-reality.html
http://arstechnica.com/science/2011/11/the-insanely-weird-quantum-wave-function-might-be-real-after-all/

Note 3. Philosopher David Chalmers defined the easy problem of consciousness to be explanation of the biological and neurological correlates of experiences. The hard problem is to explain the experience itself, - how we are able to experience anything at all.