

An extract from my book 'Trapped in Amber' published May 2011

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Be aware of your emotions while reading the narrative.

What is consciousness?

The following is a new and personal theory of consciousness; I ask you to read the narrative without judgement. If you find yourself disagreeing or agreeing with the theory then please move that thought. Remember that forming an opinion or judgement limits your ability, as it confines your thinking into a predetermined space of right or wrong, black or white. If you must assume a stance then use the neutral thought of '*interesting*' as the hook for your feelings. Let the words sink into your sub-conscious and leave them there under the heading of interesting. Then as you go through life, events will happen that will allow you to test out the theory for yourself. You will then form your own view on the subject. Please remember I do not want you to believe anything ... I want you to know it.

Consciousness is one of the big questions at the beginning of the 21st Century. Some scientists speculate that consciousness is a human function, or it may exist in other life-forms, but it is nonetheless a phenomenon of the brain. In other words consciousness is a function of how the brain works. They refer to the microtubules as being a connection to consciousness.

Other scientists talk about consciousness being inherent in the Universe; they refer to the matrix of consciousness talking about a conscious Universe. This theory is generated through the work of quantum mechanics, which is providing new ways to view and experience the Universe through rigorous mathematical formula and experimentation. There is no consensus of opinion at the present time, as to how these theories affect the view that only human life-forms possess consciousness.

Resolving challenging problems is all about asking the right questions. If you think consciousness is a function of the brain then you will ask questions only about the brain. If you think consciousness is only specific to certain life-forms, then you will limit your questions and search to life-forms that fit a defined criteria. Let me share with you the questions I asked, and the observations and experiences I had, that brought me to the Lucy Theory of Consciousness. Please understand that this is my theoretical explanation, and it is

not a main stream scientific view. It is my interpretation of my understanding of my current knowledge. I have changed and developed my ideas over the last eighteen months as new knowledge has come into my understanding; I hope that I continue to have the freedom of mind to continue changing and growing. It is new thinking, challenging and controversial.

I started with the first question; 'What is consciousness?' From this initial question I asked myself four more questions.

1. What are humans made from? Answer: Atoms.
2. What are other living entities made from? Answer: Atoms.
3. What is the Universe made from? Answer: Atoms.
4. Is there anything made from anything other than atoms? Answer: No.

I do not propose that consciousness is an evolved process, therefore, the starting point for all enquiries on consciousness must be associated with atoms and/or their constituent parts.

What is the current definition of consciousness? There are many, here are some;

1. An alert cognitive state in which you are aware of yourself and your situation.
2. Consciousness is said to be the process of a thinker focusing the thought of some aspect of existence.
3. It is the ability to generalize a small object into a larger object or collection of objects.
4. The capacity to visualize things in the mind before they occur in the real world.
5. Consciousness is the ability to sense time.
6. Only conscious entities have a sense of self or collective identity.
7. Awareness or concern for a particular issue or situation. The immediate knowledge or perception of the presence of any object, state, or sensation.
8. Consciousness is a quality of mind enabling subjectivity, self-awareness, sentience, sapience, ability to perceive relationships between self and environment.
9. Consciousness is strongly associated with an awakened state.

I asked the question: Are these definitions biased to the human race? Clearly they are, in that it would need a human to decide if another creature was conscious. This means humans take control of whether something has consciousness or not. This is power; power is control; control limits knowledge. So I decided to define consciousness as:

Consciousness is the subject that enables perception of objective stimuli.

For example what this means is that any entity is conscious if it can act on internal and external objective stimuli. Example, can it distinguish light from dark, can it detect food or danger? Does it have the ability to interpret its environment? If it can then it is conscious.

It is the Lucy Theory that consciousness is consciousness. Consciousness is constant and available; access to it is through the brain. The life-form's ability to function in the environment is not down to consciousness, but to the complexity of the brain, and the evolution of the life-form. For example current knowledge says that a typical adult human is conscious forty times per second. The snail is conscious much less ... other creatures may be conscious more or less than humans, we have not got the understanding at this moment. What is clear is that the rate of consciousness (state of consciousness) is dependent upon how well the brain functions. It is a consequence of the complexity of the brain, not a function within the brain.

The words 'life-form' denote all living entities on the Planet that have a cellular structure which includes DNA (deoxyribonucleic acid) and/or RNA (ribonucleic acid). This includes both prokaryotic and eukaryotic cells.

It could be suggested that consciousness is connected to physical movement of the life-form. Physical movement in living forms would appear to be connected to chemicals and electromagnetic pulses known as electricity. The Lucy Theory is proposing that consciousness has nothing to do with movement or electromagnetic pulses, but is a result of a discrete '*charge*' of energy.

What is the difference between electricity and charge in a life-form?

A description of Electricity within the life-form:

It is accepted by all biologists that the best guess or understanding we have at this moment is that everything life-forms do, is controlled and enabled by chemical and electrical signals. Chemical interaction is part of the life-form's function; however, the chemicals are controlled by electrical signals. Electricity is the key to the survival of all life-forms. Electrical signals allow for almost instantaneous response to chemically controlled messages. Almost all of our cells are capable of producing electricity. Negativity is the natural state of the human cell. It is the imbalance between potassium and sodium ions inside and outside the cell that sets up the capacity to produce electricity.

The cell membranes perform a process called the sodium-potassium gate. At rest your cells have more potassium ions inside than sodium ions; there are more sodium ions outside the cell. At a resting position there is not enough movement to generate electricity. When the body needs to send messages from point 'A' to point 'B', due to a chemical signal, it opens the membrane gate. When opened, sodium and potassium ions move freely into and out of the cell. Potassium ions leave the cell attracted to the outside of the membrane. The sodium charged ions move the other way into the cell. The result is a switch in the concentrations of the two types of ions. This flip between the ions generates an electromagnetic pulse, which has been influenced by a chemical marker.

It is these electromagnetic pulses that tell the organs of the life-form what to do. When scientists talk about the nervous system sending signals to the brain, or synapses firing, or the brain telling your hands to pick up a sandwich; what is actually happening is electrical signals are passing between point 'A' and point 'B' in the body. There is not a wire connecting things together in the body; electrical signals are passed cell to cell until it reaches its destination, utilising the nervous system of the life-form. These signals move chemicals within the life-form, and are triggered by chemical interaction. Electricity requires an outside source of fuel, and is a movement of energy from point 'A' to point 'Z'.

Electricity in the life-form is the electromagnetic signal created when cell movement disturbs the sodium and potassium ions, and this reaction creates an electrical pulse. The life-form only has consciousness if enough electric pulses can be generated to maintain functions within the life-form, because there is a dual purpose to producing electricity in the life-form, and that is to signal movement, and to convert food into energy.

A description of Charge.

Now it is understood that the speed of sound is a basic property of the atmosphere that changes with temperature. For a given set of conditions, the speed of sound defines the velocity at which sound waves travel through a substance, such as air. Based on the standard atmospheric model this value has been defined as; 1,116.4 feet per second, 340.3 meters per second, 761.2 miles per hour, 1,225.1 kilometers per hour, or 661.5 knots.

So sound waves are waves of sound in air. What are light waves a wave in?

Let me try and explain the challenge in another way. If you took a glass container, inside of which you placed an old fashioned alarm clock with a visible bell and hammer alarm mechanism that was constantly ringing. If you then sealed the container, and extracted all the air, thus creating a vacuum inside the glass container, you would not be able to hear the alarm clock ringing because sound only travels through air, and as there is no air in the container, no sound would be heard. You would be able to see the hammer hitting the bell mechanism, but you would not hear any sound. That is relatively simple to understand, however, you can still see the clock. To see something, your eyes have to detect light. We understand that light is a wave. That means that light waves are being emitted through the vacuum, so what are the light waves travelling through? The clock is in a vacuum, a vacuum is suppose to have nothing inside of it. We know it is not air ... what is it?

What follows is a little bit of Quantum Physics, even the scientists who support and demonstrate what I am about to explain are challenged by it. Do not allow your belief system to create negative labels to block you from reading about this amazing process. The

information is the best knowledge and understanding that rigorous experimentation has provided.

It is Carl Heisenberg's Uncertainty Principle that states at a very fundamental level of the Universe, nature is based on uncertainty. At the quantum level you can measure where something is, but you would lose precise information about the speed of the object. Or you can measure its speed, but you would lose precise information relating to where it was. In other words you could know precisely how fast something was travelling, but you would not be able to determine precisely its position.

Heisenberg's mathematics show that this bizarre relationship is an inescapable feature at the quantum scale, and relates to other quantities of measurements, like time and energy. For example, if you were able to examine a small space inside a vacuum, then you could determine precisely the amount of energy within the space. However, if you were able to slow time down, then things start becoming very strange. The Heisenberg Principle shows that because you have slowed time down, and stretched it out, you have lost the precise information of how much energy is in the space. If you slow time down even further, then Heisenberg suggests that you would be so uncertain about how much energy is inside of the space, there is a chance that there is so much energy, it could literally create new particles from nothing; providing that the new particles disappeared as quickly as they came. This process of creating particles of matter, ('electrons'), would borrow energy from the vacuum and pop into existence. Also at the same time an anti-electron (anti-matter) would appear, and if the electron and anti-electron collided, they would annihilate themselves turning their mass into energy. Trillions of these actions would be going on in very, very small spaces, and in very, very short time intervals. This strange action is called 'quantum fluctuations' and results in a 'charge', a discrete package of energy.

I know this seems incredible, but read on.

Heisenberg is suggesting that in very, very small amounts of time and space, something could come from nothing. A small package of energy is created from nothing, caused by the collision of the electron and anti-electron (matter and anti-matter). This is now establishing a new understanding of how the initial Universe was created.

It is suggested that the Universe was created from quantum fluctuations, which created a void (a vacuum) by inflation caused by the energy created (*the charge*) from the interaction of matter and anti-matter. The void was not empty, but teeming with trillions of other quantum fluctuations. For example, in one drop of water there are literally billions of quantum fluctuations going on all the time. In fact in every atom, billions of quantum fluctuations are going on all the time.

The particles created by these fluctuations have become known as '*virtual particles*'. As each piece of matter pops into existence it immediately pops out again as it collides with some anti-matter annihilating itself, fueling the expansion of the vacuum. However, it is suggested that one electron (matter) in every billion did not get destroyed, or disappear, and that provided the matter (mass) that has created the stars, planets and galaxies of the Universe. These small pieces of matter also went on to create all life.

So over time, the void expanded, due to the energy created through collision, and the electrons that survived created mass. The stars, planets, and galaxies are not separated from the vacuum (the void), but are part of the void. When we talk about the Universe expanding, it is not the galaxies that are expanding or moving away from Planet Earth, it is the void, the space between the galaxies. As the void expands (inflates) it carries the galaxies meshed in the matrix of the void with it. The stars and planets are trapped in the galaxies though the power of gravity. It is the vacuum of Space that is expanding. All the matter in the Universe is part of the vacuum of Space, including you, including consciousness. A vacuum is the Universe's default state.

Everywhere including the vacuum of Space is alive with quantum fluctuations, which are little packages of energy which appear, and very quickly disappear. This is allowable because of the Heisenberg Uncertainty Principle, which shows that you can borrow energy from nothing, as long as you pay it back quickly. This has now been evidenced in laboratories from work done by Willis Lamb as shown in the BBC 4 documentary with Jim Al-Khalili, Everything and Nothing, March 2011. Rigorous tests have shown that these fluctuations exist in a vacuum, and the mathematics of Paul Dirac, which provide the calculations to assess how much electrons would be affected by virtual particles, has been proven to be correct up to one part in a million, after experimentation. This is strong evidence, providing an accurate and powerful description of reality. It also provides an explanation of why electrons 'orbiting' an atom, appear and then disappear, reappearing in a different place without seemingly going through the intervening space. It is the process of quantum fluctuation. Nothingness cannot exist in nature.

The understanding gained from this knowledge allows, for the first time, a bridge to connect the Special Theory of Relativity by Einstein, which describes things close to the speed of light, and Planck's Theory of Quantum Mechanics, which sets rules for the very, very small.

Every atom is 99.99% vacuum. Virtual particles are literally popping into and out of existence all the time. We are living in an ocean that is alive with virtual fluctuations that are constantly creating a 'charge of pure energy'.

It is accepted that energy cannot be destroyed only changed. When a virtual particle comes into existence, borrowing energy from the vacuum, and then disappears, where does the

energy go? We know with some certainty, that these actions are going on trillions of times, all the time, within every square centimeter, everywhere in the Universe. The Lucy Theory is proposing that consciousness is the '*charge*' created by the virtual particle when it appears and then disappears.

Quantum reality has shaped the structure of the Universe; our world is the quantum world, the difference is that our world has been inflated many times. Everything came from the vacuum created by one particle appearing from nothing, creating energy (*a charge*) when colliding with anti-matter. Thus setting off a chain reaction of quantum fluctuations, and from that seed, grew our Universe and all life.

The conscious '*charge*' drives the life-form, using the brain to provide a subjective state of being, enabling perception of objective stimuli. If the brain is damaged or under the influence of drugs, then the brain's ability to respond to consciousness will be altered, not consciousness. Consciousness is not social, it has no boundary. The brain's complexity allows consciousness to be a conduit, allowing the life-form to interpret signals creating a view of the environment. Consciousness does not grow old; we have the same consciousness charge now as when we were children. Consciousness is a constant. Consciousness is not intelligence; it is the ocean in which everything swims, enabling life-forms with brain processes to experience stimuli, allowing the brain to inform the life-form.

Consciousness is a constant '*charge*'. There is no power to stop this process or to improve this process; it simply is. Electricity is on demand, and will happen if certain conditions are met, which can be pre-determined. Electricity needs to be informed (fueled) before it can be created. Consciousness is non-computable and cannot be pre-determined. Electricity needs to be fueled and flows from one point to another, the collision of matter and anti-matter, '*charge*' does not flow.

An analogy to help understand this relationship of consciousness with electricity would be a driver, and the car they drive. The car relates to the cells of the body, which produce electricity when fuel is applied. If the parts of the car could signal to each other through their mechanical and electrical circuits they would signal ready to go. It cannot switch itself on or move; for that it needs the driver, and that is consciousness. The two powers are correlated; for cells to work effectively they need to make electricity, for that they need fuel (food), but to make electricity they need consciousness to drive the life-form. It only works if the two sources cooperate.

Without consciousness cells cannot create electricity, movement or function. The creation of electromagnetic pulses in the life-form is not magic, it does not just occur because cells exist. The electromagnetic pulse is enabled because of the presence of consciousness. The Theory proposes that the '*spark*' from the energy created by the disappearing virtual

particle, triggers the heart cell to beat in the zygote cells, twelve to fourteen days after conception. This actual event has never been explained by anyone, how one cell knows that it has to become the heart and start beating is still a mystery, but perhaps the process of where the energy comes from to start the heart can now be explained.

Let us look closer at the brain.

When you look at an event, person or thing, does your brain show you the correct picture of what you are looking at? You may be nodding your head and saying “Of course it does.” So perhaps you will look at the diagram below, and in your mind describe what you see.

You would probably describe the diagram as a cube with a dot in the cube. On which face of the cube do you see the dot. Do you see it on the front face of the cube that is slightly facing to your left? Or do you see the dot on the front face of the cube slightly facing your right?

Close your eyes for five seconds, then open your eyes and focus your attention on the dot. When you see the cube change shape raise your right hand.

What is happening? How can the cube move on the page? How can the cube change shape while you are looking at it? The answer is that when you see the dot to your left you are seeing it through your right brain; when you see it to your right you are seeing it through your left brain.

Can you control which side of the brain you see it through? Can you control which cube shape you see? Can you see both shapes at the same time? Can you feel anything when the left brain switches to the right brain? No you cannot, which proves definitively that you cannot be sure that what you think you see, is what actually is there. How do you know which side of your brain is creating the picture in your head at any one time? You are walking through life believing the pictures that your brain produces, but how will you know when your brain switches your perception of what is there? You now understand the difference between believing, and the need for you to know.

The brain is an electrochemical organ using electromagnetic energy to function. The electricity coming from the brain can be measured in brainwave activity. There are four categories of brainwave activity and all humans experience the same characteristic brainwaves. There are different interpretations of this data.

1. Beta: 12 to 38 cycles per second; this is fully awake, fully aware, concentration, logical thinking, and active conversation. The range of brain cycles within beta would determine intensity of action.
2. Alpha: 8 to 12 cycles per second; relaxation, non-arousal, slight meditation.
3. Theta: 3 to 8 cycles per second; day dreaming, dreaming, creativity, meditation, out of body experiences.

4. Delta: 3 to 1.5 or less cycles per second; deep dreamless sleep.

The accepted scientific work on brainwaves, implies that the speed of forty times a second consciousness, associated with the waking state of a human, would vary in meditation. The Lucy Theory rejects this statement. It does not mean that consciousness slows down due to meditation; consciousness is constant; it is the brain that slows down, controlling the life-form within the boundaries of its ability. It is recognised that the waking human brain is possibly conscious forty times per second. This may not be the limit of consciousness; it is only the limit of the human brain, whilst in a waking state. (Best guess or understanding at this moment.) When a life-form meditates, the brain changes; I would propose expands in consciousness, by letting go of some of the life-form controls. It is the functioning of the brain, which alters under meditation, not the functioning of consciousness.

You can test this with anyone, and the results are the same every time. There is much written about meditation improving a person's perceptions and consciousness. Creativity and health implications are often cited as specific consequences.

The Lucy Theory proposes that consciousness is not a function of the brain itself. A complex brain with the use of good external sensing, could evolve complexity to provide the life-form with a record and replay feature (memory), that would facilitate learning, and therefore give rise to made-up (local/unique to the life-form) experiences, which would then instruct the life-form, allowing it to create an illusionary world view. This would provide a competitive edge relating to survival.

Consciousness does not contribute to subjectivity relating to the interpretation of experiences that is down to the independent life-form's interpretation of environmental signals. Consciousness has no belief ... the belief system is part of the human condition, (and other life-forms also). The labeling of experiences is the product of learned behaviour. This is a subjective action enabled by consciousness, not determined by consciousness. The different '*strengths*' of consciousness are determined by the brain within the life-form, not by the 'conscious charge', which is always constant. Consciousness does not contribute to survival as it is infinite.

Summary:

Gravity holds galaxies together, electromagnetism is the force that would theoretically rip a nucleus apart, the weak nuclear force governs radioactivity, and the strong nuclear force is the force that holds a nucleus together. These are four fundamental principles of the Universe. I am postulating that consciousness could be a fundamental principle of the Universe, and is a product of the virtual particle hypothesis that suggests that a vacuum is alive with pure energy, and under discrete situations, creates consciousness that empowers independent life-forms. It may also be connected to why life-forms grow in size over time.

There are three basic states of a life-form, waking, sleep, and coma, these are elements of qualia, and at this moment we do not know the minimum size of brain capacity that would be needed to experience consciousness. Current research implies that the vacuum in all atoms, is teeming with billions of virtual particles, and it is now accepted understanding that a '*vacuum*', the place where we consider nothing to be, has in fact got structure. It is this structure (the virtual particle activity) that bends light throughout the Universe. The Lucy Theory proposes that consciousness is in the vacuum of the Universal Ocean of virtual particles. Everything is touched by consciousness; however it is only reflected by life-forms with appropriate brain capacity.

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human condition.