# Letters to the Editor

## Consciousness and Special Relativity?

The brain is an area of neurophysiology activity. Neurophysiology activity consists of electrochemical reaction. Thus at any given time, the brain state is defined by a subset of electrochemical reactions, derived from a large set of possible reactions. Consider the phenomenon of a conscious thought. As at any given time the brain physical state consists of a collection of electrochemical reactions (events), it can be inferred that they are collectively responsible for the conscious thought. This means that at least in part, simultaneous events are responsible for thought. In other words, thought creates a connection between simultaneous events. This is in contradiction to the consequences of special relativity, which states that the fastest connection between events is the speed of light and thus excludes the possibility of connection between simultaneous events.

Consider the memorizing of, say, the value 5. This would necessarily involve more than 1 point in space as, say, if it is assumed a single electron records 5 by taking a particular potential. Then it by itself cannot define (or know) 5, as its magnitude would be defined only with respect to another datum or event defined as a unit potential, thus involving at least 2 simultaneous events.

Consider the experience of vision. While we focus our attention on an object of vision, we are still aware of a background and, thus, a whole collection of events. This would mean at least an equal collection of physical events in the brain are involved.

Take the experience of listening to music. It would mean being aware of what went before. Like vision, it would probably mean that while our attention at any given time is focused at that point in time, it is aware of what went before and what is to follow. In other words, it spans the time axis.

Many great composers have stated that they are able to hear their whole composition. Thus their acoustic experience is probably like the average person's visual experience. While focusing at a particular point in time of their composition, they are nevertheless aware of what went before and what is to come. The rest of the composition is like the background of a visual experience. Experiencing the composition in this way, they are able to traverse it in a similar fashion to which a painting is observed. In this sense, an average person in comparison can be seen as having tunnel hearing (like tunnel vision) when it comes to music, thus making it very difficult for him or her to reproduce or create new music.

It can be seen that consciousness is a 4-D phenomenon. If it is a physically explainable phenomenon, such an explanation would involve EPR type effects and as such physical explanations at a quantum level will be involved.

—Frank de Silva
Jindalee, Australia

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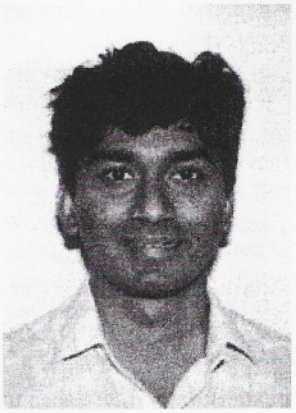
# Point of View

Frank de Silva

## Consciousness and Special Relativity?



### Introduction

Special relativity states that the fastest connection between events is the speed of light. This proposition excludes the possibility of connections between simultaneous events. Yet consciousness creates a connection between simultaneous events in the brain. This contradiction was discussed briefly in [1]. The analysis is taken to a greater depth in this article.

The contradiction with special relativity will remain, independent of the rate of propagation of nerve impulses, provided that this rate is equal to or less than the speed of light. In order to recognise the contradiction, it is important that the reader takes note of the following:

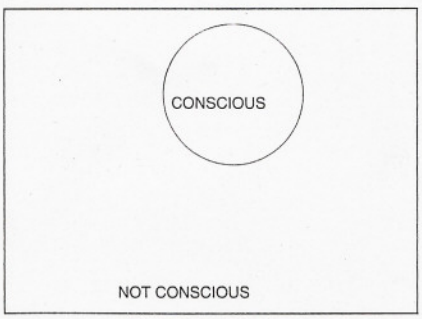
When evaluating the statements made about consciousness, it is critical that this be done in relation to one's subjective understanding (experience) of consciousness. Every tendency to project one's imagination of it should be avoided.

### A Need for "Connections of Consciousness"

Simultaneous events in the brain at some time, to, can and will give rise to another set of simultaneous events at the next instant. In fact, all activity in the universe can be viewed as a set of simultaneous events at one instant, giving rise to simultaneous events at the next instant. What is different with the simultaneous events of the brain is that while it shares the common property of giving rise to simultaneous events at the next instant, it also forms part of, or is fully responsible for, consciousness in the PRESENT. It is this "Connections of Consciousness" between simultaneous events that is in contradiction to the consequences of special relativity.

### Computer Technology

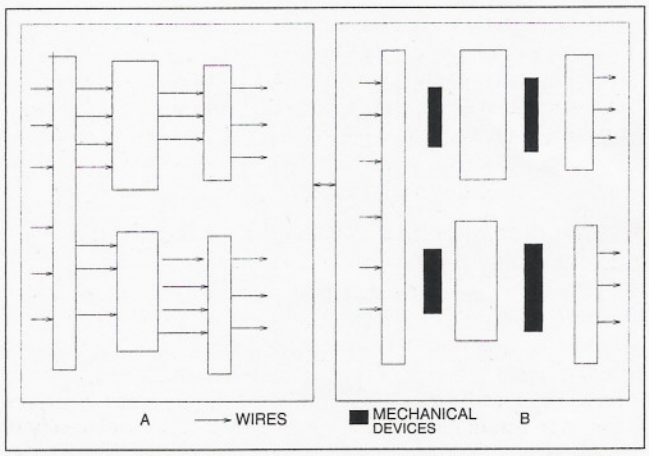
This same problem is inherent in any attempt to explain consciousness by way of current computer technology. Consider the case of a computer made of discrete components arranged in a synchronised circuit. Let the data transmission between components be done through wires. To say the computer is conscious is to imply a "connection of consciousness" between the multitude of simultaneous events taking place in the computer at any given time. In order not to confuse the need for "connections of consciousness" with the physical connections present, the following thought experiment might prove useful.



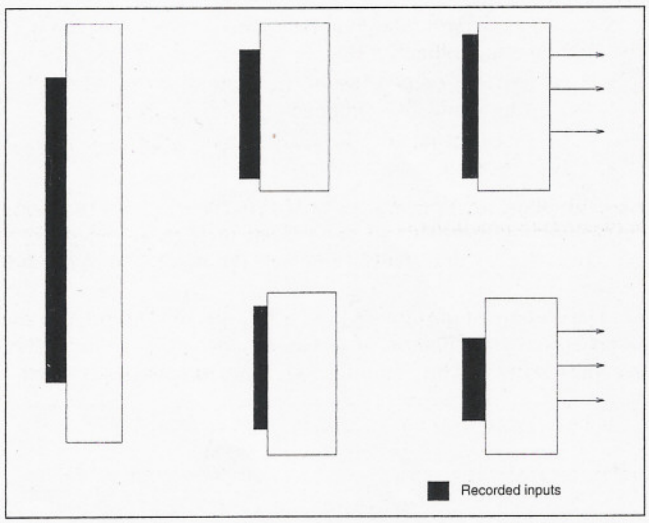

**1. All events in the universe at some time, $t_0$, are a set of simultaneous events. A subset of these is connected by consciousness.**

Let the rate of the clock synchronising the circuit be reduced to one impulse every hour. Now at this slow rate, it would be possible to replace the wires by mechanical devices that travel between the components. Thus, now at any given time the computer will consist of components totally separated from each other physically. This highlights the need for "connection of consciousness" between simultaneous events. (See Fig 2.)

Figure 3 shows another situation in which the need for "connection of consciousness" is highlighted. The inputs to each component of a conscious com-




**2. Computer B is the same as A except that its internal wiring has been replaced by mechanical devices.**




**3. The events of a conscious computer are re-created by using recorded inputs to each of its components.**

puter are recorded, and the computer is then dismantled and the components run through the same phases using the recorded inputs. This situation would also have to be conscious.

If the need for such connection is denied, then consider the following consequences.

Consider the case of this computer communicating with another. Would not assigning any sort of consciousness to the computers imply a third consciousness created by the two together?

By analogy, this would also apply to two people talking to each other. They would necessarily create a third person, which is the collective consciousness of them both.

It might also help to compare the activity of this computer with the activity associated with the fall of a set of rocks down a mountain. If the computer is conscious, so will be the rocks + activity, thus the whole universe would have to be conscious.

This is in total contradiction with the subjective understanding of consciousness to be personal.

## Einstein-Podolski-Rosen (EPR) Phenomenon

A good example of EPR [2] is the emission of a pair of photons in rapid succession associated with a state transition of some atoms. What is peculiar to such pairs of photons is that their polarisation will collapse to be perpendicular to each other, if measurements are carried out using appropriately set instruments. Even if the setting of the measuring devices is changed while the photons are in transit between the atom and measuring device, this condition will still be met. Thus there is observed an instantaneous correlation between the pair of photons.

The photons are travelling at the speed of light. As such, in a reference frame attached to the photons, their creation and detection (measurement) is one single event. Thus, the correlation would not be surprising from such a reference frame.

## A New Interpretation of Quantum Mechanics Experiments

It was noted in the first communication [1] that consciousness is a four-dimensional phenomenon. Thus, the objects observed in consciousness are 4-D. It is natural to conclude that these objects are formed by smaller objects at the quantum level, which themselves must be 4-D. From this observation, a new interpretation of quantum mechanics is obtained. A new terminology is also introduced in order to aid further discussion on consciousness.

## Postulates

1. A particle in a particular quantum state is to be considered to be a 4-D quantum object(s) (QO).

2. A QO by itself or as a result of interaction with other QOs will give birth to new QOs (change of state of particles)

3. Junctions (quantum operators) are formed or become defined when QOs give birth to new QOs.

4. The most fundamental of quantum object(s) (FQO) exists between two junctions.

5. The junctions form initial and final boundary conditions for FQOs.

6. Depending on the kind of junctions (operators) formed, a set of properties (compatible observations) for each of the FQOs becomes defined, while a complementary set of properties (complementary observations) become totally undefined. Thus between two junctions, an FQO has a well-defined set of properties.

7. A junction, by its nature, divides the FQO into two distinct groups. Namely, those that lie to the past of the junction (pre-FQO), and those that lie to the future (post-FQO).

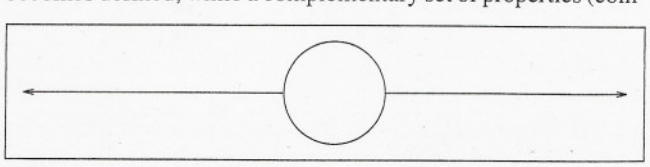
8. Most junctions act as one-way valves passing an influence from FQOs in the past of a junction to FQOs in the future. (Some junctions allow the reverse as well, forward-reverse-junction, e.g., see Fig. 5).

9. There is a high degree of influence (correlation) between the properties of FQOs on the same side of a junction.

10. When FQOs come together at junctions, the collection of QOs can be considered to form a single large quantum object(s) (LQO). Thus, LQOs consist of many FQOs and many junctions.

11. With the formation of LQOs, there emerges new properties that are essentially global properties. An example of an LQO is an atom.

12. There is no limit to how large an LQO can get, thus, in this sense, the whole universe is an LQO.



**4. Atom emits a pair of photons**

## Examples

### Example 1

As shown in Fig. 4, an atom emits a pair of photons. As this pair does not have other quantum objects to interact with, it does not have any well-defined properties (e.g., polarisation undefined).

### Example 2

As shown in A of Fig. 5, the potential light source, filters, horizontal-vertical selector, and the detectors are all examples of QOs.

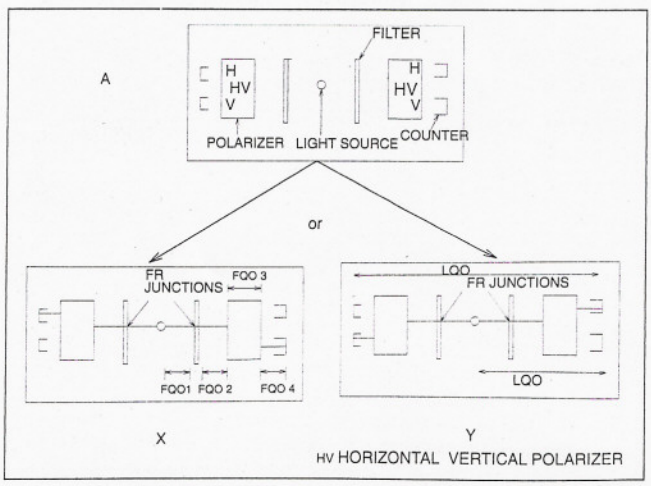
Now, when the light source emits a pair of photons, this pair would interact with all of the QOs present and form one of two possible larger QOs (X or Y).

The larger QO, as shown, is made of many smaller QOs. Each of the smaller QOs, which are photons, has a well-defined polarisation, vertical (V) or horizontal (H).

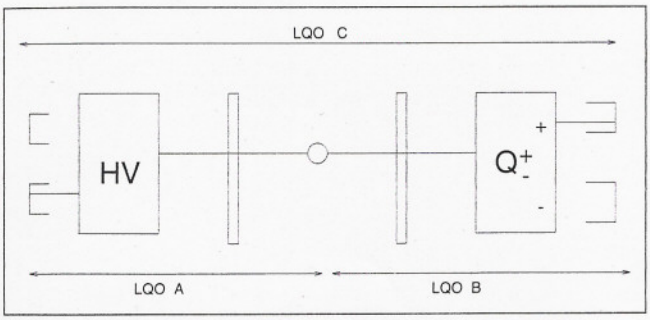
### Example 3

As shown in Fig. 6, quantum objects A and B both originate from the same junction. Thus, their properties may show correlation, depending on the rest of the QO involved in their formation. With regards to polarization, the angle Q determines the degree of correlation shown in forming the LQO C.

The possible LQO C that can form and the corresponding probability of that formation is as follows:




**5. From Fig. 3.1 of [2]. With quantum objects arranged as in A, only two possible outcomes (X or Y) are there for the LQO.**




**6. From Fig. 3.3 of [2]. LQO A can have a polarisation of H or V. LQO B can have a polarisation of +Q or -Q.**

1. LQO C = LQO A(V) + LQO B(+Q). Probability $\cos^2(Q)/2$
2. LQO C = LQO A(V) + LQO B(-Q). Probability $\sin^2(Q)/2$
3. LQO C = LQO A(H) + LQO B(+Q). Probability $\sin^2(Q)/2$
4. LQO C = LQO A(H) + LQO B(-Q). Probability $\cos^2(Q)/2$

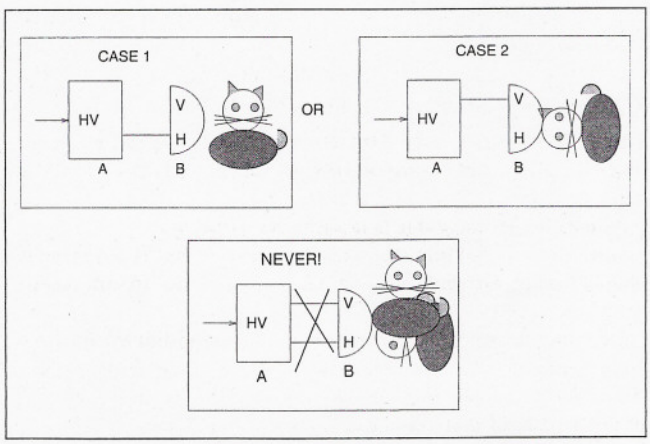
**Example 4**

Figure 7 illustrates the situation with Schroedinger's cat. One of the main advantages of the new interpretation is evident in this case. It is similar to the traditional interpretation in that a photon polarisation has an equal chance of being V or H. But the actual photon object formed will have to be one or the other. It is not a superposition of states, as the boundary conditions at B are conducive to particle-like properties for the photon. Thus, there is but one cat, either dead or alive. In this interpretation, the presence or absence of an observer does not have a direct bearing on the outcome. It eliminates the unique importance of observations having to be made. (Wigner, with or without a friend, makes no difference.)

## Comparison of Old and New Interpretations (see Table 1)

The new interpretation in the language of the old can be summarised as follows. The collapse of the wave function at measurements propagates backward in time, up to the last measurement. The apparent influence on future measurements is coincidental on that measurement being similar to the first.

However, inherent in the new interpretation is a change in the meaning of measurement. It no longer is connected with an observer, but rather with the concept of boundary conditions.




**7. From Fig. 4-6 of [2]. There are only two possible FQOs that can form between A and B: Case 1, a horizontally polarised photon, or Case 2, a vertically polarised photon. A superposition never occurs as the boundary condition at B doesn't allow for such.**

To make this clear, a parallel can be drawn with the following situation.

Consider a car being set up for towing. Initially the car and tow truck are in close proximity. As such, the rope connecting the two is slack. The rope has no property of tension. The property of tension is defined only when the truck starts applying a force on the car through the rope.

**The Universe Under the New Quantum Interpretation (Ignoring for the moment any role consciousness may have)**

The universe is a 4-D, large quantum object that is in the process of growth. This growth is occupied by an equal formation of new space-time. This growth occurs by some of the open-ended FQOs ending in junctions. The junctions form as a result of interaction between the open-ended FQOs or spontaneously, individually ending in junctions. In either case, from these junctions are born new open-ended FQOs. The process then repeats. It was stated that the properties of pre-FQOs have a high degree of influence on the potential properties of the post-FQOs. Thus, there is to be expected a high degree of correlation over time. Also, it was stated that the properties of FQOs on the same side of junctions can have a high degree of correlation. This will result in correlation over space. Thus, the universe will have a high degree of autocorrelation.

## Fractals

The forming LQOs have a high degree of autocorrelation. If they form repeating FQO sequences, then they would become 4-D fractals. Thus, the 1/f fractal Gaussian noise could very well be due to the correlation of FQO properties across junctions. By the same token, the correlation between FQOs on the same side of junctions will give rise to the spatial correlation found in fractals. If this is the case, then the study of the correlation properties of fractals at low resolution should yield information of the correlation properties at the level of FQOs.

## Modelling Fractals

Fractal formation can be viewed as an amplification of the auto-correlation between FQOs. Thus, if this be the case, then it would be possible to form models of the structure of large fractals, as seen at low resolution using FQOs. This would be a kind of de-amplification process, similar to making analog audio records.

## An Interesting Question

**Is the Universe Inherently Deterministic?**

It has been noted that quantum experiments have an inherent random nature about them. For example, under what seems like identical start and end points, a photon still has a choice of randomness with respect to which of two possible polarisation it will come to have. The question is, what appears to be random over a small part of the 4-D universe might not be random when the total past of the universe, with respect to the photon, is taken into account. To put it another way, if there is another universe identical in every detail up to the present time, then will its future growth be identical to the growth of this universe? While no definite answer can be given to this question, the following observation can be made. Similar quantum objects growing under similar conditions tend to remain similar. A good example of this is biological systems. Take the example of identical twins. Taking into account that the environments of growth are not necessarily identical, the similarity is striking. As was noted in the case of fractals, the correlation properties at low resolution probably correspond to similar autocorrelation properties at the level of FQOs. Thus, by the same token, similarity at a low resolution of two LQOs would mean a similarity at high resolution or at the level of FQO. Thus, looking at it this way, the answer to this hypothetical question would weigh heavily on being yes.

## A Description of Consciousness

The description presented here is not a complete one. What is presented is only to aid further development of this analysis.

AXIOM 1

Consciousness consists of two components:

1. The Observed (U)
2. The Observer (I)

AXIOMS OF U

The axioms are described here in terms of the description of the universe under the new quantum interpretation.

1. The observed consists of an LQO (U.LQO)
2. This U.LQO consists of a collection of smaller LQO examples, a piece of music (sound), a bird in flight, etc.
3. The smaller LQO falls into two distinct groups:

(a) Those with some constituting FQOs outside the brain (Real.LQO)

(b) Those which are completely within the brain (Virtual.LQO)

4. Real.LQOs are of two types:

(a) The Real Sensory LQOs: These originate from FQOs outside the brain.

(b) The Real Motor LQOs: These originate from FQOs inside the brain.

5. Virtual.LQOs are of two main types:

(a) Memory: These LQOs are models of past observed LQOs.

(b) Imagination: These are models of possible Real Sensory LQOs and Real Motor LQOs.

Both imagination and memory consist of models of Real Sensory and Real Motor LQOs. As they are only models, they shall be called virtual sensory LQOs and virtual motor LQOs, respectively.

The formation of U.LQO will probably involve processes such as the amplification and de-amplification described under fractals.

It should be noted that observer #1 does not observe every part of U.LQO. What observer #1 actually observes is limited to what is situated inside the brain.

### AXIOMS of the Observer I

1. Ability to observe U
2. Feelings
3. Free will
4. Curiosity and playful behaviour

### Ability to Observe

I has an inherent ability to observe most of the sensory U.LQO while concentrating on a particular area. The hypothesis is that this occurs at the junctions in the brain between the FQOs forming the LQO.

### Feelings

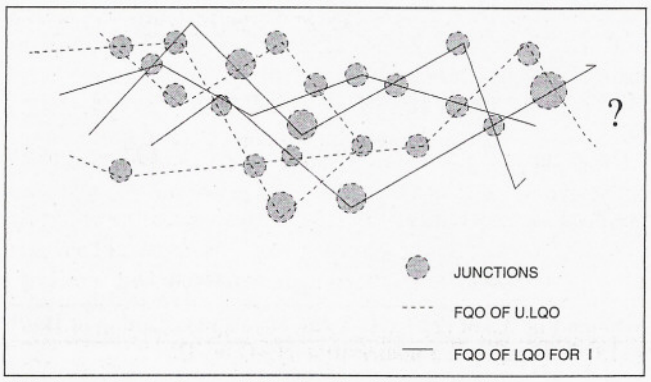
A LQO in U can give rise to feelings in I. For example, a pin prick to the foot will invoke a feeling of pain in I. This feeling itself is confined to I. Feelings are of two types. Attractive and repulsive. The term "feeling" is used here in a very broad sense, in that all observations create feelings (e.g., background sound creates the feeling of noise, etc.).

### Free Will

I gets its notion of free will by its ability to control the motor LQO. It exercises its free will in trying to find attractive feelings. The hypothesis is that it does this by controlling the formation of junctions between the FQOs forming the motor LQO.

### Curiosity and Playful Behaviour

Curiosity brings about new feelings or experiences. This in turn leads to development of playful behaviour. Playful behaviour has its beginnings in I trying to reproduce a feeling by re-creating, using its free will, a past U.LQO. For example, a child feels hardness in touching a table. A model of this experience is automatically formed in its memory. By focusing on this model it reproduces the total set of actions.




**8. Interaction between LQO for I and the U.LQO**

## The Big Question, What is I?

Let us assume that it is an LQO. Its interaction with U.LQO will be as depicted in Fig. 8.

### Inherent Problems

The first obvious problem is that when two LQOs join at junctions, they must be considered to be one single LQO. When the junctions give birth to new open-ended FQOs, what is going to decide which open-ended FQOs form I and which form U?

One solution to this problem is to consider the I LQO as being physically localised in space, such as a large macromolecule, and U to be fluid of the nature of nerve impulses. Yet, nevertheless, after interaction to the past of the junctions formed, they would have to be considered as one LQO.

Thus I gets confined to be only the open-ended FQO localised in space by being part of some structure.

Being limited to the open-ended FQO means I can span time only to the extent of the longest open-ended FQO.

Now, while it is true that open-ended FQOs on the same side of a junction have a high degree of correlation in their potential properties, the correlation of potential properties of FQOs at different junctions is only indirect.

Thus, free will and feelings, if to be explained by open-ended FQOs alone, would have to be a property of open-ended FQOs, in general.

Then, we come back to the problem of having to attribute consciousness to the whole universe.

## Only Way Out—An Ancient Hypothesis on I

The universe as seen from outside would be a 4-D structure made up from smaller 4-D components connected together at junctions.

A reasonable question: Is it a flexible structure?

Now, if it is flexible, then suppose using this flexibility, the shape of the universe is changed. Then what are the consequences?

One of the main consequences is that from within the universe, such a change in shape will not leave any trace, as it is for all time and space (see Fig. 9). The old shape is lost forever, and a new shape has taken its place.

Now this could very well be how I exercises its free will. Let I be an entity outside the universe. It is situated just outside a small 4-D region of the growing universe. Thus, being outside, it is free to change the course of events by altering the forming junctions. Free will, then, is best described as being able to define or set a

| Table 1 | |
|---|---|
| **Old Interpretation** | **New Interpretation** |
| A particle x comes into existence at $t_0$ | A 4-D Quantum objects x originates at $t_0$. Thus its initial conditions are at $t_0$. |
| With respect to property A, x is in a superposition of states described by a vector $\| v \geq a_1 \| 1> + a_2 \| 2 > ...$ | As FQO x is open ended (does not have end conditions defined), the property A is undefined. The vector $\| v >$ describes the probability that if the operator corresponding to property A does form the end point, then the property A will be described by one of the eigen vectors $\| 1 >$, $\| 2 >$ .... The corresponding probability given by $a^2_1$ etc. |
| The operator corresponding to property A is applied at $t_1$. | The FQO x ends at $t_1$. A new object originates at $t_1$. The end point operator for x is the operator for property A. |
| The property A for the particle x, between times $t_0$ and $t_1$ continues to be given by $\| v \geq a_1 \| 1> + a_2 \| 2 > ...$ | The object x extends from $t_0$ to $t_1$. It has a well-defined property A. The property A for x will correspond to one of the eigen vectors $\| 1 >$, $\| 2 >$ etc., let's say $\| 2 >$, its magnitude will be the corresponding eigen value. |
| The particle x collapses to the eigen state described by the eigen vector $\| 2 >$ at time $t_1$. If a measurement is made for property A, with the operator oriented as before, then the eigen state will be found to be $\| 2 >$ with certainty. | Property A is undefined for the new FQO formed at $t_1$, as it is open ended. However, if the end-point operator for the new FQO happens to be the operator for property A, oriented the same way as before, then property A will be defined, and it will be described by $\| 2 >$ with certainty. What this means is the initial conditions for the new FQO are highly restrictive with respect to property A. |
| If a measurement is made for a complementary property to A, then the particle x will collapse to an eigen state of the new operator. | If the end operator for the new FQO corresponds to a property which is complementary to property A, the complementary property will be defined for the new FQQ. Property A will remain undefined. |

small part of the boundary conditions for the forming universe. This concept of interaction between I and U in this manner will be referred to as concept A (see fig. 10).

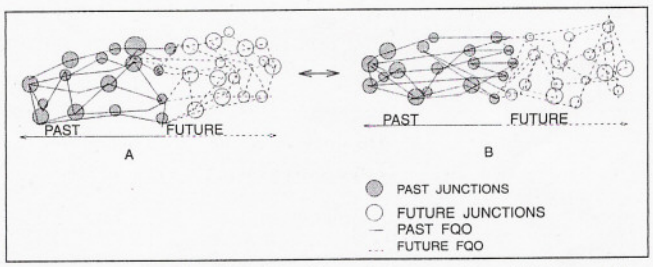
Concept A, essentially, consists of a two-way interaction. U has to create sensory LQOs containing junctions to which I is sensitive; i.e., the kind of junctions that induce feelings in I. I would then be able to control (if need be) the open-ended FQOs coming out of these junctions, and induce them to form junctions, which would result in motor LQOs. It can be inferred from this that general anaesthetics work by preventing the formation of junctions to which I is sensitive.

*Altering the junction by I, what does it do to the universe?*

The growing universe has an inherent propensity or inertia for growth. 4-D momentum of matter originates from this propensity for growth. If I does not interfere, the propensity will make the universe take a particular path of growth. It was stated that as LQOs are formed, properties emerge that are global, such as shape, stability of shape, etc. Before a property emerges in time, it must be dormant in the past. Thus, like potential energy, an LQO can be considered to hold potential emergent properties (for its future). One of the special features of some of these emergent properties is that they induce feelings in I. For example, a sunset will induce a feeling of beauty. As the sun or the sky is not conscious of its beauty, it is only I that benefits from this feature of emergent properties. What I does is alter the emergent properties of LQOs in order to draw from them more attractive feelings.

## Concluding Comments

This presentation started with observing a contradiction between

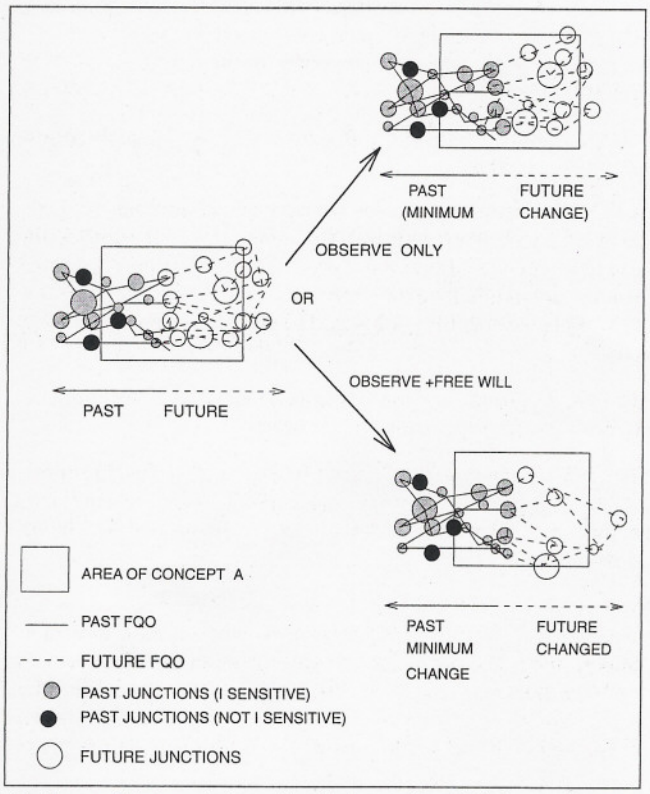



**9. If the universe is changing shape between A and B (A ↔ B), then from within the universe such a change cannot be detected, as it is for all space-time.**

our description of the universe and our description of consciousness. The description of the universe is re-evaluated and an improved description is obtained. From this vantage point, consciousness is re-evaluated and axioms presented. From these axioms, it is concluded that the I of consciousness is an entity outside the universe, controlling its formation by defining part of the boundary conditions.

*Could this entity, I, originate from the universe itself under special conditions?*

While sufficient information on the universe is not known to decide on this fully, knowledge from other areas such as religion seem to suggest otherwise. If this were true, then a search for creating this entity from the substance of the universe would be similar to the alchemist of old trying to produce gold by mixing other elements.




**10. Concept A is an interaction between I and U. I can alter the forming junctions if need be.**

It was Turing who suggested that if we were to consider the universe outside of a black box and consciousness inside of a black box, then consciousness might be modelled by a computer. While under such an arrangement this might well be true, it must be realized, from an individual's perspective, it is consciousness outside of, and the universe inside of, the black box. Looking at it this way, the computer will model the black box really well, as it has been made to model the universe. However, the ability of the computer to model the universe makes it a little universe and not a person.

Much of what is written in this article has been expressed by many writers, in one form or the other. To all of them I am equally grateful. Most of all my thanks goes to my creator, God, who lovingly reveals all truth.

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In closing I would like to dedicate this article to my friend, Witty.

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# Letters to the Editor

## Missing the Connection?

Dear Editor,

The article titled "Consciousness and Special Relativity" that appeared in the May/June 1996 issue of *EMB Magazine* set an alarming precedent for the magazine. Although the article was in a column titled "Point of View," I, as a member of EMB Society, would like to see the Society's magazine be free of messages declaring one's religious belief or expressing one's theistic gratitude.

While we are at it, the simple error of logic (despite of the author's use of equations and axioms) should be pointed out. The author states that connection of simultaneous events is in contradiction to special relativity. Whereas communication can lead to connection of simultaneous events, connection of simultaneous events does not necessitate the existence of communication between simultaneous events. The author is advised to attend an art performance to appreciate the beauty of (as well as the effort involved in creating the emerging pattern of) "connection of simultaneous events."

Yours sincerely,
Yan Xiao, Ph.D.
Assistant Professor of Anesthesiology
University of Maryland School of Medicine

The Author Replies:

Acquisition of knowledge by humanity is dependent on the consciousness of the individual. When a person makes an observation and comes to an understanding, this understanding is this person's subjective knowledge. If another person, on making a similar observation, arrives at a similar subjective understanding, this knowledge they share can be taken to be part of humanity's objective knowledge. Thus, all of humanity's objective knowledge is a subset of all of humanity's subjective knowledge; that is, there can be no objective knowledge that has not been some person's (dead or alive) subjective knowledge. Thus, an intrinsic assumption behind all of humanity's objective knowledge is the similarity of the axioms of consciousness of the individuals.

With regard to the study of consciousness, if a person gives a description of consciousness that does not correspond to his/her subjective axioms of consciousness, then with it must also be given the transformation that reconstructs these axioms. If not, this description is but only a fairy tale.

The following is a brief outline of some axioms of consciousness that point to consciousness involving an entity outside the space-time continuum:

Consciousness consists of two distinct components, the observed U and the observer I. The observed U consist of all the events I is aware of. A vast majority of these occur simultaneously. Now if I were to be an entity within the space-time continuum, all of these events of U together with I would have to occur at one point in space-time. However, U is distributed over a definite region of space-time (region in brain). Thus, I is aware of a multitude of space-like separated events instantaneously. It is this awareness that necessitates I to be an entity outside the space-time continuum. With I taken as such, as explained in the article, a very important axiom of consciousness, namely Free Will, falls in place.

Einstein, on studying quantum mechanics, found it highly disturbing that it implied an instantaneous correlation between space-like separated events. Thus, he suggested the EPR experiments with the hope of falsifying quantum mechanics. I am sure if it had occurred to Einstein that he is instantaneously aware of space-like separated events, he would have concluded that he (I of consciousness) is an entity outside the space-time continuum.

Finally, I do not think it fair to dictate on whom I am free to thank. As for implying myself to be a Catholic in my autobiographical note, how do I defend myself—free speech?

Frank de Silva