Resolution of the Smarandache Quantum Paradoxes

Robert Neil Boyd

Consulting physicist for Princeton Biotechnology Corporation, Dept. Information Physics Research, USA
E-mail: rnboydphd@comcast.net

In this paper we study the four Quantum Smarandache Paradoxes and try to explain and solve them.

1 Introduction

The **Quantum Smarandache Paradoxes** [1, 2, 3, 4, 5, 6] are enounced as follows:

- 1) Sorites Paradox (associated with Eubulides of Miletus (fourth century B.C.): Our visible world is composed of a totality of invisible particles.
- a) An invisible particle does not form a visible object, nor do two invisible particles, three invisible particles, etc. However, at some point, the collection of invisible particles becomes large enough to form a visible object, but there is apparently no definite point where this occurs.
- b) A similar paradox is developed in an opposite direction. It is always possible to remove a particle from an object in such a way that what is left is still a visible object. However, repeating and repeating this process, at some point, the visible object is decomposed so that the left part becomes invisible, but there is no definite point where this occurs. Generally, between <A> and <Non-A> there is no clear distinction, no exact frontier. Where does <A> really end and <Non-A> begin? One extends Zadeh's "fuzzy set" term to the "neutrosophic set" concept.
- 2) Uncertainty Paradox: Large matter, which is under the 'determinist principle', is formed by a totality of elementary particles, which are under Heisenberg's 'indeterminacy principle'.
- 3) Unstable Paradox: Stable matter is formed by unstable elementary particles.
- 4) Short Time Living Paradox: Long time living matter is formed by very short time living elementary particles.

2 Resolution of Smarandache Quantum Paradoxes

[R. N. Boyd]: I think some of the paradoxes may be resolved by a view that matter is infinitely subdivisible. See below:

[Paradox 1a]:
Sorites Paradox (associated with Eubulides of Miletus (fourth century B.C.): Our visible world is composed of a totality of invisible particles.
a) An invisible particle does not form a visible object, nor do two invisible particles, three invisible particles, etc. However, at some point, the collection of invisible particles becomes large enough to form a visible object, but there is apparently no definite point where this occurs.

[R. N. Boyd]: The statement was true in the 4th century BC, but it is not true now. We can now measure the masses of a vast array of elemental particles. And we now know that there are such ratios as "moles" in chemistry telling us how many atoms are involved in the situation. So today we can make such determinations. There are fabrication processes in the manufacture of integrated circuits that are capable of actually arranging very precisely, each atom in the fabrication. One example of these techniques is the use of epitaxal deposition, which is a one atom thick deposition of material. Screening and masking techniques allow atom-by-atom structuring to occur. These circuits can be small enough so that Cooper pairing is impossible and quantum phase-slips occur in the energized circuit. However, the problem has now shifted into the domains which are smaller than our present ability to perceive with our instrumentations. Typically colliders are used to attempt to make measurements of the elemental particles, and recent data seems to be pointing strongly to a realm of particles even smaller than quarks, which may indeed comprise quarks, if such creatures exist in the first place. (What we are calling quarks may be something else entirely, perhaps organizations of yet smaller particles.) I hold that there is a vast array of entities smaller than the Planck length, and have developed methods for imaging such entities.

I designed 6 methods for imaging SubQuantum particles (smaller than the Planck length). Valentini of Italy wrote a paper describing yet another way to accomplish SQ imaging. The easiest and cheapest to make SQ microscope of my design was publicized, and then tested for proof of principle by Dr. Bernd Binder of Germany. After a 2 years long effort, he verified proof of the principle of operation. The year after that, the design verified by Binder, was constructed at a university in Serbia. One of the Serbian professors sent me an email to inform me that the SQ microscope of my design has imaged entities as small as $10{\times}10^{-95}$ cm. The infinitely small is an unattainable goal in terms of technological approaches, but we know the infinitely small is there, by inferences.

It turns out, based on Kolmogorov's 5/3 law developed from studies of turbulence, that the smallest vortex resulting

from turbulence is an entity which lives at $10{\times}10^{-58}$ m, which we call a Kolmogorov Vortex. This is the smallest particle that is still influenced by gravitation. Entities smaller than this are the primary cause of gravitation.

Further on, there is a quantum coherence factor involved in palpable matter which has the quantum field communicating with all the parts of the automobile, for example, with further quantum communication occurring internal to the parts which make up the automobile. What we really need to be studying here is the coherence of objects, in the quantum field sense. What is the lower limit of quantum coherence? Is there a lower limit?

[Paradox 1b]:
b) A similar paradox is developed in an opposite direction. It is always possible to remove a particle from an object in such a way that what is left is still a visible object. However, repeating and repeating this process, at some point, the visible object is decomposed so that the left part becomes invisible, but there is no definite point where this occurs.

[R. N. Boyd]: There is, these days. But there may be a lower limit, which can be studied by quantum coherence of objects.

[Paradox 1b (continued)]:
Generally, between and there is no clear distinction, no exact frontier. Where does really end and begin? One extends Zadeh's "fuzzy set" term to the "neutrosophic set" concept.

[R. N. Boyd]: The boundary conditions are always very interesting. Those conditions which are both A and NOT A, yet neither A nor NOT A. Korzibski referred to these conditions as "NULL A". I call them boundary layers. They are a study in themselves, because boundary layers comprise a third state, and arise often.

[Paradox 2]:
2) Uncertainty Paradox: Large matter, which is under the 'determinist principle', is formed by a totality of elementary particles, which are under Heisenberg's 'indeterminacy principle'.

[R. N. Boyd]: Uncertainty does not apply to monochromatic coherent photons, nor indeed to any photonic system, by logical extension. See:
http://worlds-within-worlds.org/refutationofheisenberg.php

Indeterminacy only applies where there are elements of chance involved, most particularly involving systems of particles, which are quite susceptible to Zitterbewegung, while photons remain largely unaffected by it.

Hans Dehmelt of Germany was awarded the Nobel Prize in physics for keeping an electron pinned to one spot, so that its momentum and location could be known at the same time, for up to 3 months. Heisenburg uncertainty failed in those circumstances. This experiment is considered by many as evidence that the uncertainty principle fails, except under very limited circumstances.

It is easier to deal with this paradox when we consider that the uncertainty principle has failed, under many circumstance. A deterministic version of QM was developed based on experiential information factors, which imply an Intelligent Universe.

[Paradox 3]:
3) Unstable Paradox: Stable matter is formed by unstable elementary particles.

[R. N. Boyd]: The life time of the proton is calculated (not observed with instrumentation) to be on the order of $10{\times}10^{32}$ years. But this ignores plasma/aether factors, and more importantly, gamma ray dissociations of atoms, which cause protons to vanish back into the aether from whence they originated. Gamma ray dissociation of atoms also causes SQ particles (vortex lines, Bhutatmas) propagating with an infinite velocity, which are the cause of gravitation and are the cause of the development of new electrons, positrons, protons, neutrons, and atoms due to aether/plasma events on the surfaces of stars. Instrumented measurements have discovered that every atomic element is found streaming out from the sun in the "solar wind". SAFIRE has instrumented physical evidence that hydrogen and many other elements are created in plasma double layers (charge separation layers) verified by SEM (scanning electron microscopy) and optical correlation spectroscopy. The creation and dis-creation of elementary particles and atoms is a continuous cycle which occurs at all times in the infinite volume universe. The life span of a proton is much smaller than the calculated standard. The actual life span of the proton is determined by the number of gamma ray dissociation events passing through the given volume, per unit time. [Gustave Le Bon "Evolution of Matter" 1906]

[Paradox 4]:
4) Short Time Living Paradox: Long time living matter is formed by very short time living elementary particles. Consciousness and Experiencing informations are involved in all these processes. This information is the organization force which is responsible for many phenomena. The universe is constructed from Space, Time, matter, energy, and Experiencing. Consciousness is not limited to human beings. In fact, it has been demonstrated that all observables have some manner of consciousness, however rudimentary. Consciousness is a holographic energetic having soliton-like [coherent] properties. The best descriptions of the energetics of Consciousness arise from the works of V. Poponin (DNA Phantom Effect) and from a recent paper which shows that the radiation pattern of a symplectic E/M antenna is directly altered by the attention, intention, and emotional condition of the operators

of the transmission facility. This direct influence of the symplectic E/M also causes a divergence in the quantum field, and thus we have evidence that there is a direct relation between the quantum field and Consciousness. Let us never forget that there is a vast array of types of Consciousness, all of which will have some effect on the quantum field.

Also see the works of Andrej Detela. For example: http://www.zynet.co.uk/imprint/Tucson/4.htm#Physical.

Eventually holographic Artificial Intelligence such as HNeT (a variety of quantum computer), combined with Sub-Quantum Physics and Consciousness Physics will be able to map non-physical and dis-incarnate entities, as well as all the energetics of the commonly known life-forms. Eventually, communications will be established through this approach, with non-biological forms of Consciousness, such as rocks and stars.

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