

Olson Note on this article to other Students of Creation Causality:

Robert Boyle is my kind of shmendrake just because he asks the question, Is The Universe Alive? His argument can be completely dopey for all I care, his bringing it up is what's important. You see, for some reason I have an unprovable core belief that these questions are not solvable via language or group information exchange, but rather only through moments of individual, personal illumination, as it were. Of course, I could be wrong!

Luckily, Boyd's argument isn't dopey. But he makes some big jumps here that are sincerely felt but seem a bit comical in that the logic is not obvious at all; e.g. "Does not the ability to register events imply awareness? And, does not awareness imply consciousness? By this, the Universe is conscious and aware. Absolutely."

But that's OK, he's automatically cool just delving around in this embarrassing area, which most thinkers don't feel comfortable entertaining because they feel it is so absurd it is beneath them, in a prideful way. Is that fair? In some cases, I think so.

Incidentally, I don't know most of the stuff he's talking about and had to look it all up, which was great. The business about the SOLITON is a useful concept. Here's a glimmer of an explanation I lifted from elsewhere:

Nonlinear waves: Solitons: Solitons are nonlinear waves. As a preliminary definition, a soliton is considered as [solitary, traveling wave pulse](#) solution of nonlinear partial differential equation (PDE). The nonlinearity will play a significant role. For most dispersive evolution equations these solitary waves would scatter inelastically and lose 'energy' due to the radiation. Not so for the solitons: after a fully nonlinear interaction, the solitary waves remerge, retaining their identities with same speed and shape. It should have remarkable stability properties. Stability plays an important role in soliton physics.

The beginning of soliton physics is often dated back to the month of August 1834 when John Scott Russell observed the "great wave of translation". He describes what he saw in [1]:

"I believe I shall best introduce this phenomenon by describing the circumstances of my own first acquaintance with it. I was observing the motion of a boat which was rapidly along a narrow channel by a pair of hoses, when the boat suddenly stopped-not so the mass of water in the channel which it had put in motion; it accumulated round the prow of the vessel in a state of violent agitation; then suddenly leaving it behind, rolled forward with great velocity, assuming the form of a large solitary elevation, a rounded, smooth and well defined heap of water, which continued its course along the channel apparently without change of form or dimension of speed. I followed it on horseback, and overtook it still rolling on at a rate of some eight or nine miles an hour, preserving its original figure some thirty feet long and a foot to foot and half in height. Its height gradually diminished, and after a chase of one or two miles I lost it in the windings of the channel. Such, in the month of August 1834, was my first chance interview with that singular and beautiful phenomenon which I have called the Wave of Translation a name which it now very generally bears."

Robert Boyle's article follows:

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Date: Mon, 30 Aug 1999 15:48:44 -0700
Sender: Quantum Approaches to Consciousness
From: S. Hameroff
Subject:

is the universe conscious, alive?
 By RN Boyd

First, let us consider the fact that *space itself* has a memory. This fact was proven by PoPONIN's "DNA Phantom" experiments, which have been replicated. So, this is a given. (See V.P. PoPONIN. "Modeling of NLE dynamics in one dimensional anharmonic FPU-lattice." Physics Letters A)

Now, does memory imply a capacity for consciousness? (Memory certainly implies awareness.) The memory of space is residing in the *subquantum* as a soliton-like holographic wave structure residing in a Fermi-Pasta-Ulam(FPU) lattice. A Fermi-Pasta-Ulam system is many dimensional Hamiltonian system of N nonlinearly coupled oscillators. In this view, the multidimensional holographic

FPU soliton is not constrained to any particular location in the 3-space, but has multiple orders of freedom of movement and location in a multidimensional way.

Although, mathematically, an FPU soliton has a tendency to remain fixed in one location, or to drift slowly in a given direction, because of the non-linear and non-local functions, it would appear that the structure can instantly relocate over large distances, under certain energetic conditions internal to the structure (which could be volitional), and remain intact.

Because of the multidimensional structure of the FPU soliton, it remains coherent regardless of disturbances in a particular frame.

The stability of the long-lasting and highly energetic forms of coherent FPU solitons could then be considered as "long term memory" or even the "individuality" of a particular location in space, as the energetic signature of these long-term solitons may remain intact regardless of disturbances in a given frame. Due to the multidimensional nature of the structure, disturbances across a particular set of dimensions would not influence the remaining multidimensional aspects of the topological structure of the high-energy coherent FPU soliton form. Thus, space itself has a long term memory.

There are also evanescent forms of the FPU soliton which will disappear over time or with disturbances. These evanescent forms are not coherent in the multidimensional frame, and they are not very energetic, in relative terms. These short-term solitons comprise the "short-term memory" of the physical vacuum. (See "The DNA Phantom Effect" by Vladimir Poponin.)

(We need to understand better what are the constraints, limitations, and internal conditions of this holographic FPU soliton, which are relevant to its appearance at a given multidimensional location. This can and should be done experimentally.)

Having established that the physical vacuum itself has the capacities of short term and long term memory, we now ask

the question: does memory imply consciousness? I think it does.

Does not the ability to register events imply awareness? And, does not awareness imply consciousness? By this, the Universe is conscious and aware. Absolutely. Because the majority constituent of the Universe is in fact space, which does in fact have a memory.

Now, having established that the Universe is possessed of memory, and thus awareness, and thus consciousness, we ask, is the Universe alive?

The primary definition of Life, to me, is the capacity of *volition*, the ability to influence the environment by an act of will. I also define life as the capacity to be aware of the environment, to adapt to the environment,

and to manipulate the environment. The factors may, or may not, include the ability to move within the environment. These factors may, or may not, include the ability to have "offspring". So, by this definition, is the Universe alive? Let us examine the factors.

Is the Universe possessed of volition? A difficult question. How are we to test for it? Let us consider that there is some organization present in the Universe. What is the cause of this organization? In the physics, we often consider this organization to be due to some overarching principles, such as the activities and actions of the various kinds of fields of gravity, electric and magnetic fields, axion and torsion fields, the quantum potential, and nuclear weak and strong forces, on matter. But simply attributing the organizations and behaviors we observe of the galaxies and stars to the actions of these various fields, has not been adequate to explain the complex organizing behaviors we observe. There seems to be some other factor involved.

Some other form of guiding principle. Is this principle perhaps that the Universe itself has some form of volition or will? Having established that space itself is aware and conscious, is it possible that there is some quality inherent in the physical vacuum which comprises a will? I

think so. Perhaps even beyond this, is the guiding principle of harmony which guides this will, so that all things act in concert through time.

I think that the Universe is Alive and even Sentient. And everything that occupies the physical vacuum partakes, to some degree, of this overarching sentience of the Universe.

The other factors: Is the Universe aware? We have already established that it is.

Does the Universe possess the ability to adapt to its environment? I'm not sure that I fully understand what environment the Universe sees, except to say that Steven Hawking agrees with me that the quantum potential contains influences from many other Universes. And the physics of the quantum potential, acting in a non-local way, affect the Universe in which we live.

It is conceivable that there would be some kind of "responsiveness" of the Universe to the behaviors of other Universes which it is in (non-local) contact with.

Finally, does the Universe manipulate its environment? At the scale of multiple Universes, by Steven Hawking's descriptions, yes, it does, through the quantum potential.

Robert Neil Boyd

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