

# Quantum computation and Biological stress: A Hypothesis

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## Abstract

**We propose that biological systems may behave as quantum computers. We have earlier hypothesized that patterns of quantum computation may be altered in stress and this leads to the change in the consciousness vector of biological systems. We further propose in this paper that the biological systems with a sufficient consciousness vector behave as objects which are entangled with the universal consciousness and as a consequence wormholes exist between the universal consciousness and the biological systems. The decrease in the consciousness vector of the biological systems due to stress (abiotic and/or biotic) leads to disruption of wormholes between biological systems and the universal consciousness. This leads to appearance of the stress symptoms in the biological systems. However the application of pesticides/fertilisers or introduction of novel proteins through genetic engineering leads to restoration of wormholes and increase in consciousness vector of the biological systems and in turn results in to alleviation of stress symptoms.**

## Introduction

We have proposed earlier that biological organisms may behave as quantum computers<sup>3</sup>. Quantum entanglement describes the phenomenon that occurs when groups or pairs of particles interact in such a way that the quantum state of each depends on the other particle of the quantum state. Thus it is more appropriate to give a quantum for the system as a whole. The values of physical properties of the entangled particles such as momentum, position, polarization, spin etc. are found to be correlated. For instance if two particles are produced in such a way that their total spin is zero, and one particle is found to have clockwise spin then the spin of the other particle will be found to be counter-clockwise (provided the spin of the particles is measured on the same axis). However, this behavior generates effects that are apparently paradoxical. Although there is no means for communication of information between the entangled particles, it appears that one particle of an entangled pair "knows" what measurement has been performed on the other particle of the entangled pair, and with what outcome. This phenomenon came to be known as EPR paradox and was a subject of several papers by Schrodinger, Einstein, Podolsky and Rosen. Einstein referred to this phenomenon as spooky action at a distance and considered such behavior as impossible in the real world. This led Einstein to conclude that quantum mechanics must be incomplete. However, the counterintuitive predictions of quantum mechanics have been verified experimentally<sup>7</sup>. Experiments which involve measuring the spin of entangled particles or polarization in different directions produce violations of Bell's inequality. This gives credence to the fact that non local phenomenon are real. Though information in entangled systems can be transferred at faster than light speed, it is not possible to use this effect to transmit classical information at such speeds.

Quantum entanglement is an area of extremely active research and its effects have been demonstrated experimentally primarily with microscopic particles such as photons, electrons. However such effects have been demonstrated in the molecules the size of buckyballs<sup>1,6</sup> and small diamonds<sup>5</sup>. The practical utilization of entanglement effects in communication and computation has been explored.

A clear example of entangled system is a pair of particles which are generated when a subatomic particle decays. Since the total momenta, angular momenta, energy etc. of the system remains same before and after the decay, the measurement outcomes of two daughter particles must be highly correlated. For example a spin-zero particle could disintegrate into a pair of spin-1/2 particles. Since according to the principle of conservation of angular momentum the total spin before and after the decay must be zero whenever the first particle is measured to be +1/2 the other when measured is always found to be -1/2.

Quantum non locality and entanglement are not exactly equivalent and there are certain subtle differences as described below. Although a bipartite quantum state must be entangled in order for it to produce non-local correlations, there are entangled states that do not produce non local correlations. In essence, entanglement of a two-party state is necessary but not sufficient for that state to be non-local. It is notable that entanglement is more commonly viewed as an algebraic concept whereas non-locality is much more related with the foundations and interpretations of quantum mechanics. We propose that the universal consciousness and biological systems exist as entangled systems. Recent research indicates that "quantum entanglement" might be linked with

wormholes. A wormhole, also known as an Einstein–Rosen bridge, is a hypothetical topological feature. It is a feature of spacetime that is fundamentally a "shortcut" through spacetime. It was recently reported that the characteristics of a wormhole are the same as if two black holes were entangled, then pulled apart. The distance between the two entangled particles is not a limitation. Hypothetically if the black holes were on opposite sides of the universe, the wormhole would connect them. Black holes can vary in size. They can be as small as a single atom on one side of the spectrum or many times larger than the sun on the other side.

### Results and Conclusions

Now physicists<sup>4,8</sup> have found that, looked at through the lens of string theory, the creation of two entangled quarks -- the building blocks of matter -- simultaneously gives rise to a wormhole connecting the pair. It is notable that wormholes we are proposing in this paper are not a "shortcut" through spacetime but a "shortcut" through fields of consciousness, one the field of universal consciousness and other the field of consciousness of the biological systems. We have hypothesized earlier that biological organisms behave as quantum computers. We further propose that the biological organisms and universal consciousness are entangled systems and thus wormholes exist between them. Since the consciousness vector of the biological organisms is possibly altered in stress<sup>2</sup>, the wormholes between the organisms and the universal consciousness may be disrupted. This possibly leads to appearance of the stress symptoms in biological organisms. The restoration of these wormholes leads to alleviation of stress symptoms.

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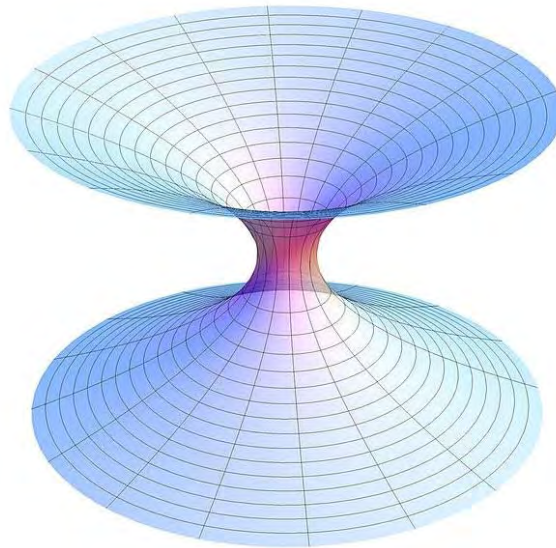


Fig. 1 From Wikipedia: <http://en.wikipedia.org/wiki/Wormhole>  
A diagram of a wormhole