

Multi-party Quantum Communication in biological Cells

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It is well known that elementary particles behave as quantum systems. It has also been proposed that the whole universe behaves as quantum computer (Lloyd, 2006). Thus the universe is also a quantum system. This can be said about every other form of matter in the universe including biological systems. We have earlier proposed that quantum pseudotelepathy may exist between the molecules in a cell (Grover and Grover, 2011). This form of quantum entanglement/non local interaction has not been demonstrated experimentally in the biological systems. Moreover the quantum entanglement has been proved for two particle systems only, by the physicists. However a recent report has experimentally shown the quantum communication between three particles (Erven et al. 2014). This paves the way for multi-party communication in biological systems, as the biomolecules (at least in some of the aspects) may themselves behave in a similar fashion to elementary particles such as photons. Physicists at the Institute for Quantum Computing (IQC) at the University of Waterloo have shown experimentally the existence of non-local interactions between three entangled photons situated several meters apart in space. In other words communication faster than speed of light happens between these photons. Einstein was not happy with the fact (theory in his time) that communication can occur faster than speed of light and hence he termed non local interactions as “Spooky action at a distance”. To examine the possibility that hidden local variables were not responsible for the communication between the entangled photons the physicists beamed the photons to the trailers situated several metres apart but ensured that no local signal could coordinate the activity of the photons. In the technical jargon they closed the “locality loop hole”. The Scientists studied the non-local communication in what is called a Greenberger-Horne-Zeilinger (GHZ) state, which involves three entangled particles.

If the existence of non-local communication between the biomolecules is proved experimentally it would be able to answer many unanswered questions in biology. It has been hypothesized that consciousness gave rise to matter in the universe (as opposed to vice versa). It has also been proposed that the universal field of consciousness is infinite dimensional and the matter is the subset of this infinite dimensional field (Grover, 2013). Thus the field of universal consciousness as the name suggests is present universally. The non-local communication may be happening in this universal field of consciousness, which leads to faster than light communication. In biological cells and molecules are also the subset of the universal field of consciousness and it may not be surprising that non local communications occur inside the cell also. It is also possible that all the constituents of the entire universe are entangled. It has been proposed recently that the creation of two entangled particles leads to simultaneous creation of wormholes between them (Jensen and Karch, 2013, Sonner, 2013). Wormholes are the “shortcuts” in space time between the two entangled particles. This may lead to non local interactions. Though the entire universe may be an entangled system, the number and quality of wormholes between the constituents of the universe may vary. In an ideal situation there would be perfect communication between the constituents, which may lead to the increase in consciousness vector of the universe. It is possible however, that the perfect communication between all the constituents of the universe may not always be wanted and this may sometimes lead to decrease in consciousness vector also. The same situation may be extrapolated to biological organisms. Since the constituents of a biological cell are entangled the wormholes may exist between the different constituents of the cell and the quality and the number of wormholes between the different constituents of the cell may determine the state of the cell. Thus the consciousness vector of the biomolecules in a cell and the number and quality of wormholes between them may determine the state of the cell. A healthy state of the cell will have biomolecules in a state with higher consciousness vector and with wormholes existing between the molecules. This may lead to higher consciousness vector and thus the “wellness” of the cell. In a diseased state the consciousness vector of the biomolecules in a cell may be lowered as also the number of wormholes between them. A map of consciousness vectors of the constituents of the entire cell and the wormholes existing between them may be indicative of the consciousness vector of the entire cell and thus its health.

The developmental patterns of the biological cell may also be seen in the above perspective. During the course of the development of a cell the consciousness vector of the constituents and the wormholes between them may vary with the developmental state of the cell thus reflecting on the changes in the consciousness vector in the cell during the development.

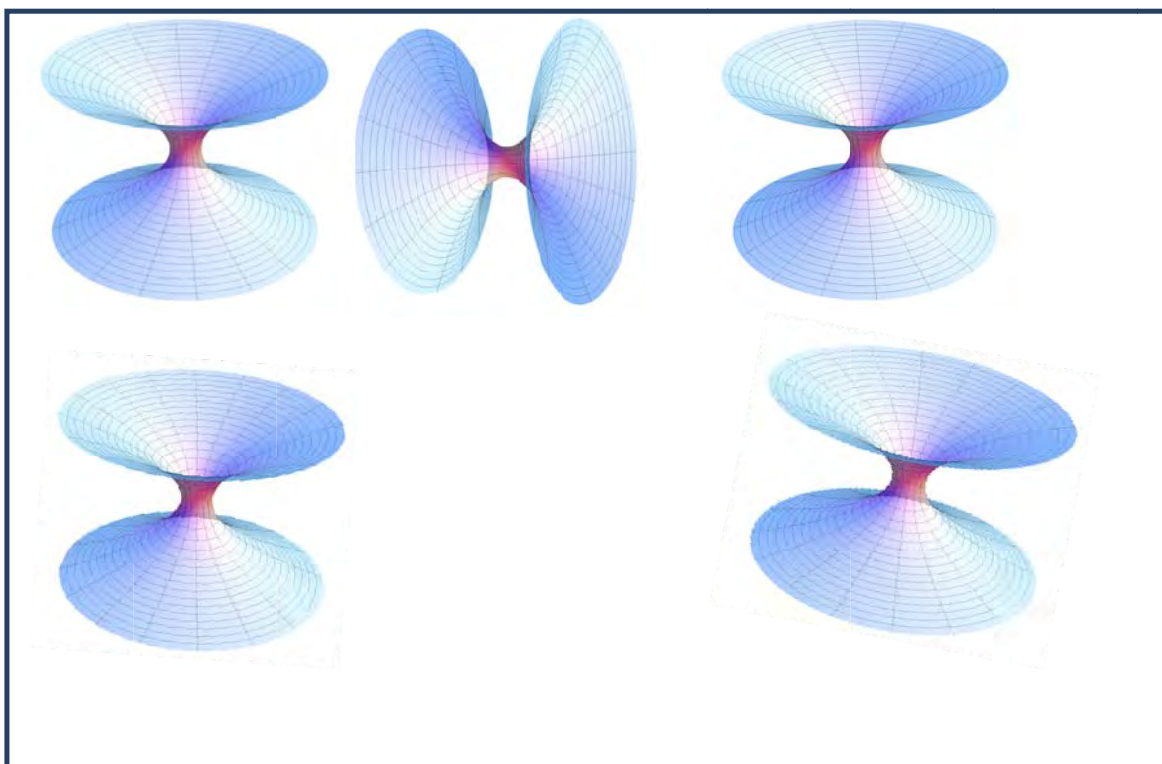


Figure 1 : A large number of wormholes may exist within a biological cells as the biomolecular constituents may be a part of an entangled system. For the sake of simplicity only four wormholes have been shown. However the situation may be much more complex as described in the text. (Adapted from Wikipedia: <http://creativecommons.org/licenses/by-sa/3.0/>)

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