

In Memoriam

Michael A. Persinger (1945-2018): A Pioneer in Neuromagnetism from God Helmet to Non-local Brain Effect

Huping Hu* & Maoxin Wu

ABSTRACT

Persinger (1945-2018) was a member of JCER Advisory Board and made significant and ground-breaking contributions to this journal. His contributions to neuromagnetism from God Helmet to non-local brain effect would be worthy of a Nobel Prize. He was a posthumous recipient of Scientific God Prize. His legacy in science, spirituality and academic freedom will live on through all of us.

Keywords: Pioneer, God Helmet, excess brain correlations, rotating magnetic field, biological quantum entanglement.



We are deeply saddened by the passing of Professor Michael A. Persinger on August 14, 2018 - See <http://sudburyfuneralhomes.com/book-of-memories/3588194/Persinger-Michael/obituary.php>

The fields of brain research, psychology, parapsychology and biophysics have lost a pioneer and we have lost a good friend and colleague.

Persinger was a member of JCER Advisory Board and made significant and ground-breaking contributions to this journal. His contributions to neuromagnetism from God Helmet to non-local brain effect would be worthy of a Nobel Prize. He was a posthumous recipient of Scientific God Prize - See <http://godprize.org>

We at JCER celebrate his life. His legacy in science, spirituality and academic freedom will live on through all of us.

Correspondence: Huping Hu, Ph.D., J.D., QuantumDream Inc., P. O. Box 267, Stony Brook, NY 11790. E-mail: editor@jcer.com

Persinger was well-known together with his research team for the "God Helmet" [e.g., 1-2]. In 2013, Persinger and his team obtained groundbreaking results in consciousness, quantum brain & nonlocality research which were published in a Special Issue of JCER [3-5]. In 2015, Persinger and his team achieved new breakthroughs which are published in a Focus Issue of JCER [7-9]. These results are summarized below to celerate his life as a pioneer and giant in neuromagnetism.

The results described in [3-9] together with what have already been achieved in these fields in the past by the herein authors [10-16], Persinger's team [17-22] and other researchers in these or related fields [e.g., 23-40] have very important implications for further advancements of biological quantum entanglement, consciousness research, parapsychology and related fields.

Congruence of Energies of Several Quantitative Measurements in the Brain & Spin-based Consciousness

Persinger's Group first reported in [9], published in JCER, significant increases in biophoton emissions along the right side but not the left when subjects imagined white light in a dark environment. The Group reported that the increased biophoton emissions did not occur when the same subjects thought about mundane experiences [9].

In [3] published in JCER, Persinger and his team explored the hypothesis by the herein authors [10-16] that networks of nuclear spins in neural membranes could be modulated by action potentials by measurements of the quantitative changes in photon emissions, electroencephalographic activity, and alterations in the proximal geomagnetic field during successive periods when a subject sitting in the dark imagined white light or did not.

Persinger and his team found that during brief periods of imagining white light the power density of photon emissions from the right hemisphere was about $10\text{-}11\text{ W}\cdot\text{m}^{-2}$ that was congruent with magnetic energy within the volume associated with a diminishment of $\sim 7\text{ nT}$. Their spectral analyses showed maxima in power from electroencephalographic activity within the parahippocampal region and photon emissions from the right hemisphere with shared phase modulations equivalent to about 20 ms. They further found that beat frequencies (6 Hz) between peak power in photon (17 Hz) and brain (11 Hz) amplitude fluctuations during imagining light were equivalent to energy differences within the visible wavelength that were identical to the intrinsic 8 Hz rhythmic variations of neurons within the parahippocampal gyrus.

These quantitative measurements plus quantitative analysis by Persinger and his team strongly suggest that spin energies similar to what was discussed by the herein authors [10-16] can accommodate the interactions between protons, electrons, and photons and the action potentials associated with intention, consciousness and entanglement.

Demonstration of Entanglement of “Pure” Photon Emissions at Two Locations That Share Specific Configurations of Magnetic Fields Have Important Implications for Translocation of Consciousness

In [4] published in JCER, Persinger and his team applied the experimental condition that produces doubling of photon emissions from two loci during simultaneous chemical reactions when exposed to a sequence of circular rotating magnetic fields with differential phase and group angular velocities to photons from light-emitting diodes (LEDs). They found a significant but weaker enhancement of photon emissions as measured by photomultiplier tubes occurred when the two LEDs were activated simultaneously within two loci separated by several meters. If alternative explanations can be excluded, the observed effect suggest that under optimal conditions photons emitted from two, magnetic field congruent, loci become macroscopically entangled and that the two loci display properties of a single space. This effect in turn may have implications for the transposition of consciousness over large distances as suggested by Persinger’s team.

Dotta and Persinger first reported in [17] their finding of the doubling of local photon emissions when two simultaneous, spatially separated, chemiluminescent reactions share the same magnetic field configurations. As demonstrated by Persinger and his team, the experimental demonstration of non-locality for photon emissions has become relevant because biophotons are coupled to conscious activity and cognition.

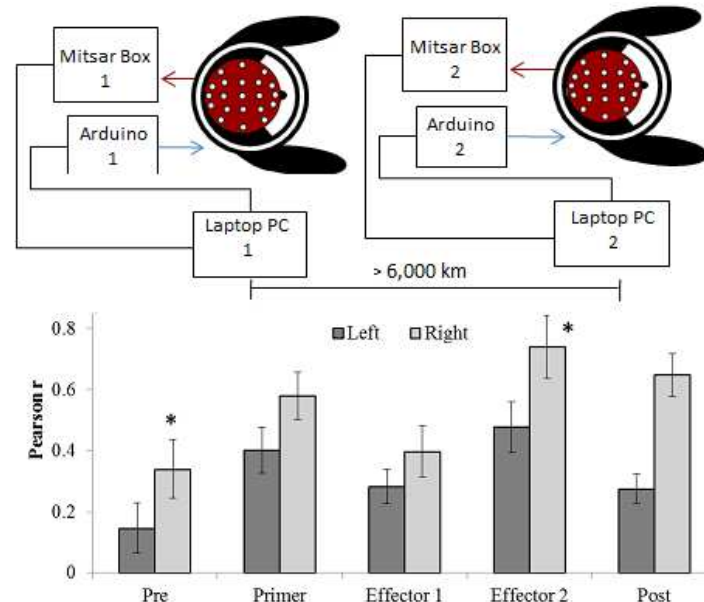
Potential Entanglement of Brain Activity Over 300 Km for Pairs of Subjects Sharing the Same Specific Configuration of Magnetic Fields Is Demonstrated as Measured by s_LORETA and QEEG

In [5] published in JCER, pairs of subjects separated by 300 km were either exposed or not exposed to specific configurations of circular magnetic fields. Persinger and his team found that when one person in the pair was exposed to sound pulses within the classical electroencephalographic band, there were discrete changes in power within the cerebral space of the other person even though they were not aware of the stimulus times and separated by 300 km. However, the intracerebral changes that only occurred if the magnetic fields were activated around the two cerebrums simultaneously were discrete and involved about single, punctate volumes of about 0.13 cc (125 mm³). Their calculations show that the potential energy from the applied magnetic field within this volume was about $6 \cdot 10^{-14}$ J and with an average brain power frequency of 10 Hz would result in $6 \cdot 10^{-13}$ W. Further assuming $\pi \cdot 10^{-2}$ m² for the surface area of the cerebrum, this is equivalent to $\sim 2 \cdot 10^{-11}$ W·m⁻² which is in the same order of magnitude as that associated with photon emission during cognition.

Persinger and his team first reported in [18] that light flashes delivered to one aggregate of cells evoked increased photon emission in another aggregate of cells maintained in the dark in another room if both aggregates shared the same temporal and spatial configuration of changing rate, circular magnetic fields. They also reported that increased photon emissions occurred beside the heads of human volunteers if others in another room saw light flashes during the presentation of the same shared circumcerebral magnetic fields. They further reported that when the shared

magnetic fields were not present, both cellular and human photon emissions during the light flashes did not occur.

Experimental Production of Excess Correlation across the Atlantic Ocean of Right Hemispheric Theta-Gamma Power between Subject Pairs Sharing Circumcerebral Rotating Magnetic Fields



In [6] published in JCER, the experiment was completed during the summer of 2015. In the experiment, 5 pairs of volunteers separated by more than 6,000 km wore identical cerebral toroids which produce patterns of phase shifting, 30 nT magnetic fields and were exposed to the sequences that produced excess correlation in chemiluminescent reactions and shifts in pH.

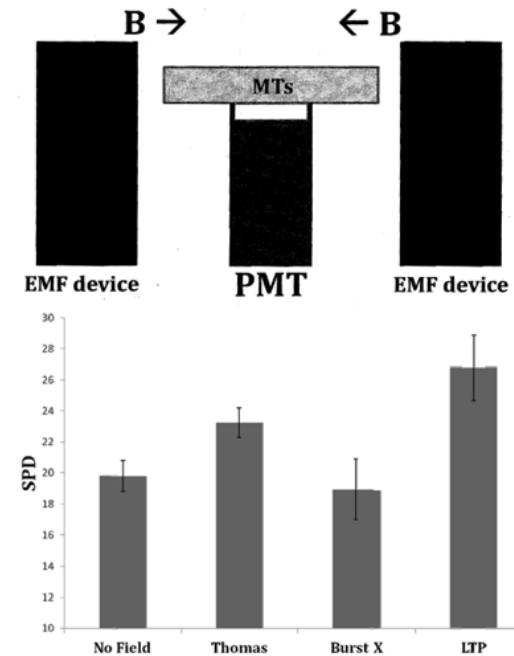
They found that, in comparison to the various baselines and control procedures, enhanced power between the right hemispheres of pairs of participants occurred during the interval documented to produce excess correlation [6]. Their specific analyses indicate that only coherence within the theta band of the right temporal lobes of the pairs was diminished. Further, their sequential block analyses reveal that the paired brains' responses to pulsed tones at 6.5 Hz occurred within the 30-40 Hz band over the caudal temporal lobes during the exposures to an effector field. Their primary independent component analyses verified these results [6].

Further, they found that, during the 6.5 Hz pulsed tones, there was a peak in the spectral power density at that frequency over the right temporal lobe of the person listening but a trough in the spectral power density over this region for the person who was not. The research team found that even subjective experiences, as measured by the Profile of Mood States, indicated significantly increased excess correlation for scales by which increased anger and decreased vigour are inferred.

Therefore, This experiment, if independently confirmed, has the potential for creating a technology that can generate reliable excess correlation of brain activity (and potentially

consciousness and specific experiences) between two people separated by thousands of kilometers [6].

Enhancement of Spectral Power Densities in Microtubule Preparations Exposed to Temporally Patterned Weak Magnetic Fields



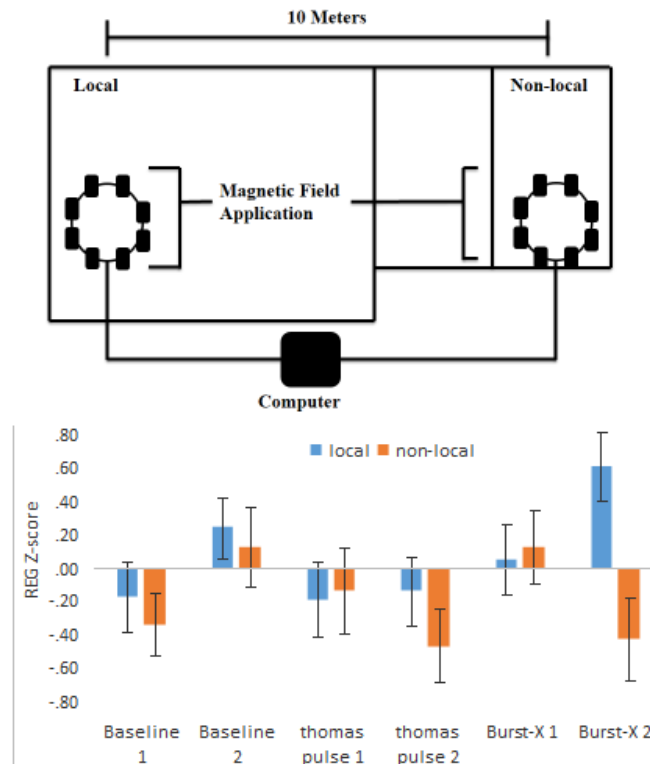
In [7] published in JCER, Persinger and his research team exposed microtubule (“MT”) preparations to temporally patterned weak magnetic fields and studied the spectral power densities (“SPD”) of the photon emissions from the said MT preparations.

According to [7], the dynamics of the MT and its constituent tubulin dimers during periods of adaptation to a disrupted environment are associated with increased photon emissions. Through spectral analyses of the photon emissions from plates of MT preparations within standard media in a Faraday room, they found that the emitted photons exhibited weak but significant and reliable peaks of SPD around 7.7 to 7.8 Hz. They further found that only exposures for 4 min to 3 to 10 μ T temporally patterned magnetic fields (that, they state, are associated with the physiological substrates of “learning and memory”) enhanced the magnitude of the SPD of photon emissions from MT.

They also noted that, as in their previous experiments, applications of the appropriate, temporally patterned magnetic fields to MTs do not affect the total photon emissions but shift the distributions of the amplitudes power spectra during the brief interval of exposure.

Thus, Persinger and his team suggested that, if intracellular information is contained within shifting temporal patterns of energy but not the absolute shift in energy within dynamic systems, then weak magnetic fields might affect the function of cells through microtubules [7].

Demonstration of Excess Correlation in Random Number Generators at Two Locations Sharing Specific Patterns of Magnetic Fields



In [8] published in JCER, Persinger and his research team tested whether temporally-coupled diametric shifts in parity could be demonstrated between two Random Event Generators (“REGs”) located at two locations and exposed to patterned magnetic field in a circular array of solenoids separated by 10 m.

According to [8], each circular array generated a patterned rotating magnetic field that has previously produced transient excess correlation and entanglement in photon reactions and alterations in pH in spring water. During a 30 min interval, the REGs were exposed first to an accelerating group velocity embedded with a diminishing frequency/phase-modulated field (the primer) followed by a decelerating group velocity embedded with an increasing frequency/phase-modulated magnetic field (the effector) [8].

They found that only after exposures for about 4 min to the second (effector) condition that is known to manifest the effects of entanglement did the random numbers deviate significantly and by more than one standard deviation in an opposite direction to each other [9]. Therefore, these results indicate that excess correlation can be generated within “random” quantum electronic processes whose spatial domains are similar to neuronal synapses at the macro-level by appropriate applications of weak, microTesla level, magnetic fields [8].



We visited Professor Persinger, his research staff & facilities one year ago on August 10, 2017 (See photograph above). He was warm, kind & full of smile, brilliance & energy! He showed us quite a few fascinating experiments going on at the time & we also had a meeting with his research staff in the auditorium.

References

1. Persinger, M. A., Vectorial cerebral hemisphericity as differential sources for the sensed presence, mystical experiences and religious conversions. *Psychological Reports*, 1993; 76: 915-930.
2. Persinger, M. A. & Lavalley, C. F., The electromagnetic induction of Mystical and Altered States within the Laboratory. *Journal of Consciousness Exploration & Research*, 2010; 1(7): 785-807.
3. Persinger, M. A., Dotta, B. T., Saroka, K. S., & Scott, M. A., Congruence of energies for cerebral photon emissions, quantitative EEG activities and ~5 nT changes in the proximal geomagnetic field support spin-based hypothesis of consciousness. *Journal of Consciousness Exploration & Research*, 2013; 4(1): 1-24.
4. Dotta, B. T., Koren, S. A. & Persinger, M. A., Demonstration of entanglement of “pure” photon emissions at two locations that share specific configurations of magnetic fields: implications for translocation of consciousness. *Journal of Consciousness Exploration & Research*, 2013; 4(1): 25-34.
5. Burke, R. C., Gauthier, M. Y., Rouleau, N. & Persinger, M. A., Experimental demonstration of potential entanglement of brain activity over 300 Km for pairs of subjects sharing the same circular

- rotating, angular accelerating Magnetic fields: verification by s_LORETA, QEEG measurements. *Journal of Consciousness Exploration & Research*, 2013; 4(1): 35-44.
6. Scott, M. A., Rouleau, N., Lehman, B. S., Tessaro, W. E., Juden-Kelly, L. M., Saroka, K. S. & Persinger, M. A., Experimental Production of Excess Correlation across the Atlantic Ocean of Right Hemispheric Theta-Gamma Power between Subject Pairs Sharing Circumcerebral Rotating Magnetic Fields (Part I & II), *Journal of Consciousness Exploration & Research*, 6(9): pp. 658-707.
 7. Dotta, B. T., Vares, D. A. E., & Persinger, M. A., Spectral Power Densities of the Fundamental Schumann Resonance Are Enhanced in Microtubule Preparations Exposed to Temporally Patterned Weak Magnetic Fields: Implications for Entanglement, *Journal of Consciousness Exploration & Research*, 6(9): pp. 716-727.
 8. Juden-Kelly, L. M., Dotta, B. T., Vares, D. A. E. & Persinger, M. A., Demonstration of Excess Correlation in Non-Local Random Number Generators Sharing Circular, Changing Angular Velocity Magnetic Fields, *Journal of Consciousness Exploration & Research*, 6(9): pp. 728-737.
 9. Dotta, B. T., Persinger, M. A., Increased Photon Emissions from the Right But Not the Left Hemisphere While Imagining White Light in the Dark: The Potential Connection Between Consciousness and Cerebral Light. *Journal of Consciousness Exploration & Research*, 2011; 2(10): 1538-1548.
 10. Hu, H. & Wu, M., Spin-mediated consciousness theory. arXiv 2002; quant-ph/0208068. Also see *Med. Hypotheses*, 2004; 63: 633-646.
 11. Hu, H. & Wu, M., Spin as primordial self-referential process driving quantum mechanics, spacetime dynamics and consciousness. *NeuroQuantology*, 2004; 2:41-49. Also see *Cogprints*: ID2827 2003.
 12. Hu, H. & Wu, M., Action potential modulation of neural spin networks suggests possible role of spin in memory and consciousness. *NeuroQuantology*, 2004; 2:309-316. Also see *Cogprints*: ID3458 2004d.
 13. Hu, H. & Wu, M., Thinking outside the box: the essence and implications of quantum entanglement. *NeuroQuantology*, 2006; 4: 5-16.
 14. Hu, H. & Wu, M., Photon induced non-local effect of general anesthetics on the brain. *NeuroQuantology*, 2006; 4: 17-31. Also see *Progress in Physics*, 2006; v3: 20-26.
 15. Hu, H. & Wu, M., Evidence of non-local physical, chemical and biological effects supports quantum brain. *NeuroQuantology*, 2006; 4: 291-306. Also see *Progress in Physics* 2007; v2: 17-24.
 16. Hu, H. & Wu, M., New nonlocal biological effect: a preliminary research. *NeuroQuantology*, 2012; 10(3): 462-467.
 17. Dotta, B. T., Persinger, M. A., Doubling of local photon emissions when two simultaneous, spatially separated, chemiluminescent reactions share the same magnetic field configurations. *Journal of Biophysical Chemistry*, 2012; 3(1).
 18. Dotta, B. T., Buckner, C. A., Lafrenie, R. M., Persinger, M. A., Photon emissions from human brain and cell culture exposed to distally rotating magnetic fields shared b separate light-stimulated brains and cells. *Brain Research*, 2011; 1388: 77-88.

19. Persinger, M.A., Koren, S.A. & Tsang, E.W. Enhanced power within a specific band of theta activity in one person while another receives circumcerebral pulsed magnetic fields: a mechanism for cognitive influence at a distance? *Perceptual and Motor Skills*, 2003; 97: 877-894.
20. Persinger, MA, Tsang, EW, Booth, JN and Koren, SA, Enhanced power within a predicted narrow band of theta activity during stimulation of another by circumcerebral weak magnetic fields after weekly spatial proximity: evidence for macroscopic entanglement? *NeuroQuantology* 2008; 6(1): 7-21.
21. Persinger, M. A. et.al. Theoretical and experimental evidence of macroscopic entanglement between Human Brain Activity and Photon Emissions: Implications for Quantum Consciousness and Future Applications. *Journal of Consciousness Exploration & Research*, 2010; 1(7): 808-830.
22. Persinger, M. A., Dotta, B. T., Temporal Patterns of Photon Emissions Can Be Stored and Retrieved Several Days Later From the “Same Space”: Experimental and Quantitative Evidence. *NeuroQuantology*, 2011;9(4): 605-613.
23. Grinberg-Zylberbaum, J. & Ramos, J., Patterns of interhemispheric correlation during human communication. *International Journal of Neuroscience*, 1987; 36: 41–53.
24. Reid, B. L. On the nature of growth and new growth based on experiments designed to reveal a structure and function for laboratory space. *Medical Hypotheses*, 1989; 29: 105-127.
25. Gariaev, P.P., et. al., Holographic Associative Memory of Biological Systems, *Proceedings SPIE, Optical Memory and Neural Networks*, 1991; 1621: 280- 291.
26. Radin, D., *Entangled Minds: Extrasensory Experiences in a Quantum Reality*, 2006, Paraview Pocket Books.
27. Sheldrake, R., *Morphic Resonance: The Nature of Formative Causation*, 2009, Park Street Press.
28. Davenas E, Beauvais F, Amara J, et al. Human basophil degranulation triggered by very dilute antiserum against IgE, *Nature*, 1988; 333 (6176): 816–8.
29. Jahn, R. G., Dunne, B. J., *Margins of Reality: The Role of Consciousness in the Physical World*, 2009, ICRL Press.
30. Achterberg, J. et. al., Evidence for correlations between distant intentionality and brain function in recipients: A functional magnetic resonance imaging analysis. *J. Alternative & Complimentary Med.*, 2005; 11 (6): 965–971.
31. Pizzi, R, Fantasia, A, Gelain, F and Rosetti, D, Vdscovi, A. Nonlocal correlations between separated neural networks. *Quantum Information and Computation II. Proceedings of SPIE* 2004; 5436: 107.
32. Conte, E. et. al. A Preliminary Experimental Verification of Violation of Bell Enequality in a Quantum Model of Jung Theory of Personality. *JCER*, 2010; 1(7): 831-849.
33. Emoto, M., *The Hidden Messages in Water*, 2005, Atria.

34. Josephson, B.D., Pallikari-Viras, F., Biological utilisation of quantum nonlocality, *Foundations of Physics*, 1991, 21: 197-207.
35. Stapp, H. P., *Mind Matter and Quantum Mechanics*, 1993, Springer-Verlag, Berlin.
36. Tiller, W. A., *Psychoenergetic Science*, 2007, Pavior.
37. Standish, L, Johnson, L, Kozak, L and Richards, T, EEG evidence of correlated event related signals between the brains of spatially and sensorily isolated human subjects. *J. Alter. Compl. Med.* 2004; 10, 307.
38. Wackermanna,J, Seiterb,C, Keibel,H and Walach, H, Correlations between brain electrical activities of two spatially separated human subjects, *Neuroscience Letters* 2003; 336(1): 60–64.
39. Wackermann, J., Dyadic correlations between brain functional states: present facts and future perspectives. *Mind and Matter*, 2004; 2(1): 105–122.
40. Montagnier, L et al., DNA waves and water, 2010; arXiv:1012.5166.