

Second International Congress Nikola Tesla - Disruptive innovation, Sava Center, Belgrade, 2 – 4 June 2017
Invited participants, Workshop 1: Tesla's Inspired Holistic Questions of Creativity & Education
& Workshop 3: ReMaking Tesla - Practices that Make a Genius, June 3

**Tesla's Inspired Holistic Questions of Creativity & Education
&
Tesla's Inspired Holistic Clue for Future Global Education Practices**

Dejan Raković

Faculty of Electrical Engineering, University of Belgrade, Belgrade, Serbia
rakovicd@etf.bg.ac.rs; www.dejanrakovic.com

Abstract. Tesla's visions & inventions realized in his controlled altered states of consciousness, are proposed to be manifestations of meditation insights & macro-quantum correlations of individual & collective consciousness, with significant quantum-holographic psychosomatic-spiritual & creative-educational implications. In particular, they may provide guideline for deeper understanding of our macroscopic quantum-holographic / quantum-gravitational theoretical framework for holistic control of creativity & education – based on traditional meditation insights & subtle interplay of normal & transitional & altered states of consciousness in carefully guided & increased macro-quantum correlations of individual & collective consciousness. Thus, Tesla's motto "When we start to study nonphysical phenomena, we will progress more in ten years than we have for centuries" – represents Tesla's legacy for new millennium & path to quantum-holographic primal source – revealing possibility for control & optimization of macro-quantum correlations of individual & collective consciousness. In this context, Tesla's holistic research methods may provide an inspiration for reconsidering limits & goals of contemporary & future global education practices.

Keywords: Nikola Tesla, Hopfield-like neural macroscopic quantum-holographic / quantum-gravitational framework, creativity, future global education, transpersonal psychology, normal & transitional & altered states of consciousness, individual & collective consciousness, macro-quantum correlations, consciousness & acupuncture system, free will.

Nikola Tesla is undoubtedly the greatest inventor in the history of electrical engineering, and what makes him especially fascinating was his unusual mental control of creative visions [1]. Regarding Tesla's extraordinary creative experiences in his altered states of consciousness (categorized in his time as nonphysical phenomena) – Tesla's conviction "*when we start to study nonphysical phenomena, we will progress more in ten years than we have for centuries*" then becomes clearer. In this context, it seems that Tesla's legacy for the new millennium is introspective evidence of his transpersonal creative communications, with fascinating possibility of his meditative eidetic control & increase of macro-quantum correlations with the quantum-holographic primal source of collective consciousness. (cf. Fig. 1(a)). It could serve as an extraordinary case study for understanding biophysical basis of both transpersonal psychology & control of creative processes, based on subtle interplay of normal & transitional & altered states of consciousness in meditation & sleep, and may help in developing future strategies for education [2]. In wider context, Tesla's whole research & life could also provide an inspiration for reconsideration of global educational / informational / policy goals – with reorientation towards holistic gentle actions for solutions of the global risk society [2,3].

These phenomenological insights could also provide additional understanding of our Hopfield-like neural macroscopic quantum-holographic / quantum-gravitational theoretical framework for quantum-informational transpersonal psychosomatics, based on systemic decrease of quantum entropy & macro-

quantum correlations of acupuncture system / individual consciousness & collective consciousness (cf. Fig. 1(b)), which may help in developing future strategies for integrative medicine & transpersonal psychology [4,5].

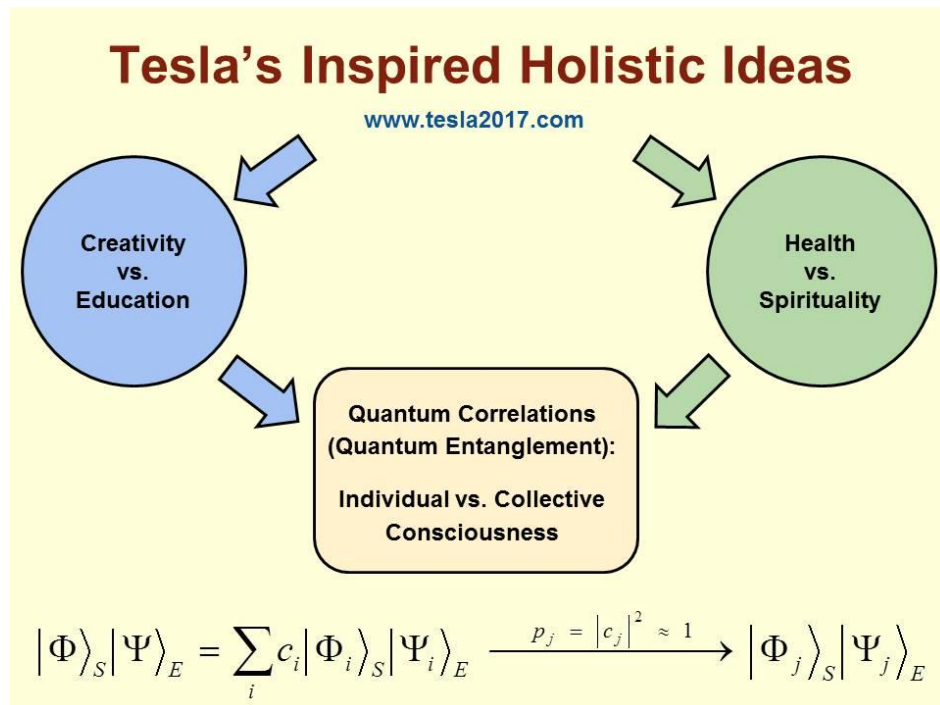


Figure 1. (a) Symbolic representation of the *mentally controlled-directed increasing* of macro-quantum correlations of individual & collective consciousness in *transpersonally-entangling creative phases* (left-hand side of the image & formula above, with previous mental increase of the focused weight contribution c_j & subsequent (practically non-stochastic) classically-reduced selection of this dominant weight contribution c_j), and (b) Symbolic representation of the *mentally controlled-systemic decreasing* of macro-quantum correlations of individual & collective consciousness in *transpersonally-disentangling spiritual phases* (right-hand side of the image & formula above, with previously systemic mental decreasing of all weight contributions c_i & subsequent (stochastic) classically-reduced selection of the weight contribution c_j).

Creative Implications of Quantum Correlations of Individual & Collective Consciousness: Tesla's Path of Mentally Controlled Directed Transpersonal Entangling

Tesla's introspective analyses may provide a *direct clue* for deeper understanding of quantum-holographic / quantum-gravitational theoretical framework for holistic control of creativity & education – based on meditation insights & carefully guided & increased macro-quantum correlations of individual & collective consciousness [2-5], as will be elaborated bellow.

During his stay in Budapest (1881/1882), in looking for employment after leaving his engineering studies, Tesla was beset by his need to detach the commutator from the machine [1]: "*I started by first picturing in my mind a direct current machine, running it and following the changing flow*"... His incessant thinking produced a complete nervous breakdown... The breakdown quickened and sharpened his perspective a hundredfold... His pulse fluctuated from very low to 260 beats per minute... His physical state had completely deteriorated... [By his incessant meditative efforts Tesla presumably had *awaken his kundalini vital energy* in the base of spine [2], which abruptly opened his *doors of perception*, usually causing permanent psychosis in persons mentally unpurified previously, but Tesla succeeded to recover owing to his *pure soul*, and subsequently a series of his incredible *meditative*

inventions began (Author's note)].... After nearly a year of unsuccessful treatment, during repeating walks with his colleague Szigeti in the City park, Varosliget, he was regaining his strength. On one occasion, during a walk in the park toward the end of February, Tesla looked at the setting sun, and began to recite the glorious passage from Goethe's Faust [...] "As I uttered these words, the idea came like a flash of lightning... and in an instant the truth was revealed. I drew with a stick on the sand the diagram of my motor... secrets of nature which... I had wrested from her against all odds and at the peril of my existence... See, how smoothly it runs. No commutator, no brushes, no sparking. As the current in one coil decays, in the adjacent coil it increases, coil after coil, creating new magnetic rotating fields and pushing the shaft continually... In less than two months, I evolved virtually all the types of motors and modifications of the system now identified with my name... it was a mental state of happiness as complete as I have ever known in life. Ideas came in an uninterrupted stream and the only difficulty I had was to hold them fast."

Tesla was absolutely convinced in similarity of scientific and artistic ideas [1]: *"They are coming from the same source."* This viewpoint is similar to Plato's, but Tesla did not come to that speculating philosophically, as he had experienced the world of ideas from the boyhood: *"When a word was spoken to me the image of the object it designated would present itself vividly to my vision and sometimes I was quite unable to distinguish whether what I saw was tangible or not ... Sometimes it would remain fixed in space though I pushed my hand through it... [Quantum hologram [2], in Tesla's quantum-coherent stationary altered states of consciousness? (Author's note)]... Then, instinctively, I commenced making excursions beyond the limits of the small world of which I had knowledge and saw new scenes. These were at first very blurred and indistinct, and would flit away when I tried to concentrate my attention upon them, but, by and by, I succeeded in fixing them; they gained in strength and distinctness and finally assumed the concreteness of real things. I soon discovered that my best comfort was attained if I simply went on in my vision farther and farther, getting new impressions all the time, and so began to travel – of course in my mind. Every night (and sometimes during the day) when alone, I would start my journeys... [Astral journeys [2], in Tesla's quantum-entangled non-stationary transitional states of consciousness? (Author's note)]... I have been practicing this until my seventeens, when my thoughts turned to inventions seriously."*

Our *quantum-holographic / quantum-gravitational theoretical framework* also imply that quantum-holographic hierarchical parts carry information about the whole (which resembles the Hindu relationship *Brahman / Atman*, as a whole and the part which contains information about the whole [2-5], pointing to subtle *fractal coupling of various hierarchical levels* in Nature [6], and to *origin of the amazing creativities* (with Tesla & Mozart as extraordinary case studies [2,7]!). It also suggest *two modes of knowledge*, according to the coupling strength consciousness-body-environment [2-5]: *weakly-coupled direct mode* (in the *out-of-body spiritual-creative quantum-entangled non-stationary transitional states of consciousness / quantum-coherent stationary altered states of consciousness*, like prayer, meditation, daydreams, lucid dreams, creative insights...) & *strongly-coupled indirect mode* (in *bodily perceptively-rationally mediated classically-reduced stationary normal states of consciousness*, like sensory perception, logic and scientific reasoning...) – with *conditions of mutual transformation*.

In the context of *Tesla's extraordinary creative insights & inventions* (directly visualized in his consciousness with the details of the functioning of the devices, without any application of Maxwell's electromagnetics!), it is interesting to consider the *possibility of controlling creative processes within our quantum-holographic / quantum-gravitational theoretical framework* [2,3]. They predict the *transpersonal properties* of the psyche in the short-lasting *quantum-entangled transitional states of consciousness* (with subsequent *classically-reduced stationary extrasensory perception of the previously focused mentally-addressed out-of-body complementary environment*, cf. Fig. 1(a) as well,

which may also be *Jung's archetype of the problem-with-solution at the level of quantum-holographic collective consciousness*, which raises associations on *Tesla's mental inventions & Plato's world of ideas* too).

After returning of the displaced consciousness upon the body, in order that *transpersonally acquired information ascends to the level of normally conscious state*, it is necessary to *overcome two filters* [2,3]: *acupuncture system / nervous system threshold filter* (which requires *emotional colouring* of the solving problem) & *frontolimbic amplification filter* (which requires *emotional-thinking priority* of the solving problem). According to our investigations, all mentioned conditions might be realized in quantum-coherent stationary state of *waking meditation* (by entering in this prolonged altered state of consciousness, with mental addressing on the solved problem) – which *Tesla* has been doing by *persistent mental focusing* on the solving problem as described in Introduction!

On the other hand, during the *sleep state* the mentioned conditions might be realized in quantum-entangled non-stationary transitional states of *falling asleep* & quantum-coherent stationary states of *REM-sleep* (with previous *intense concentration* on the solving problem before sleep & *subsequent amplification* of the obtained classically-reduced answer in the form of symbolic dream, which should be then *correctly interpreted* in the context of personal internal symbolism) – *widely applicable* even to meditation-non-trained persons [2,3]. Of course, for solving conceptually complex *scientific problems* it is necessary to be an *expert* in the corresponding field, in order to *scientifically rationalise a solution* representing scientific shift.

The same might be applied to *artistic creative experiences* & their subsequent *artistic expressions* (*Mozart as extraordinary case study* [7]!), while *very art-works* then behave like *mental addresses of archetypes* being in contact with artists in mentally-addressed transpersonal communications during the acts of creation [2,3]. Then *deep artistic experiences of the public* might have strong *spiritual notes* too, through *spontaneous mental addressing of the artistic public on the masterpeace & emotionally-induced excitation into transitional state of consciousness*.

Finally, this could similarly be extended to *deep spiritual experiences of the believers* with their *mental addressing on holy icon / relic* & emotionally-induced *excitation into transitional state of consciousness* [2,3].

All this indicates that *Tesla's holistic research methods* provide an *inspiration for reconsidering limits & goals of contemporary & future global education practices* – suggesting necessity of *grand synthesis of two modes of knowledge* in the framework of *extended quantum-holographic paradigm* [2,3].

Acknowledgements – This paper is partly financed by the Serbian Ministry of Education, Science and Technological Development, Project No. 178027. I am also grateful to Steve Mehl, American retired clinical psychologist and longtime TM practitioner, for sharing his personal experience and ancient Vedic knowledge on the deep level of consciousness called *Ritam Bharya Pragya* (described in Patanjali's Yoga Sutras and literally meaning 'when mind perceives things as they are'), supporting in his recent correspondence my theoretical insights into *Tesla-like deep origins of creativity*.

References

1. N. Tesla, *My Inventions: The Autobiography of Nikola Tesla*, Hart Brothers, Williston, 1983, the original six-part series published in *Electrical Experimenter Magazine* in 1919 has been republished in this book; there is also Serbian edition (2006).
2. D. Raković, *Tesla's legacy for new millennium: Path to quantum-holographic primal source*, Invited lecture at: *Int. Congress Nikola Tesla 2017: Disruptive Innovation*, Belgrade, 2 June 2017, preprint; D. Raković, *Tesla's holistic approach to research in science and medicine (Tesla's creative control)*, Keynote

- presentation at: *Workshop – Tesla & Nature of Creativity 2015, Int. Congress Nikola Tesla 2015: History of Future*, Belgrade, 25 April 2015, preprint; D. Karabeg, D. Raković, S. Arandjelović, M. Mićović, eds., *Proc. QIM 2011 Round Table Knowledge Federation Dialog Belgrade 2011: Partial Versus Holistic Oriented Approaches*, QUANTTES / HF / DRF / KF, Belgrade, 2011; D. Raković, On nature and control of creativity – Tesla as a case study, in: *Proc. 2nd Int. Workshop on Knowledge Federation*, Dubrovnik, Croatia, 2010, D. Karabeg, J. Park, eds., CEUR-WS.org/Vol-822, 2011; D. Raković, Tesla and quantum-coherent states of consciousness: case study for understanding quantum-holographic nature of creativity, in: *Proc. Meet. Ideas of Nikola Tesla*, D. Mirjanić, ed., ANU RS, Banja Luka, 2006; and references therein.
3. D. Raković, Quantum-holographic bases of psychosomatics and spirituality: Contribution to comparative research in science and religion, Presented at: *Inter-religious Round Table: Religion, Science, Culture: Contribution of World Religions to Science and Culture – Religious Heritage as a Research Subject at the University of Belgrade*, The Office of the Ombudsman of the University of Belgrade, 10 June 2013, preprint; D. Raković, *Recollections, Dreams, Thoughts: About Past & Future 1984-2008. On Crossway of Quantum-Holographic & Classically-Reduced Reality*, IASC & IEFPG, Belgrade, 2008, in Serbian; D. Raković, Towards a new/old humanism: Transitional states of consciousness as a clue? in: *Proc. Symp. Brain and Consciousness*, Lj. Rakić, G. Kostopoulos, D. Raković, Dj. Koruga, eds., ECPD, Belgrade, 1997; and references therein.
 4. D. Raković, On quantum-holographic bases of psychophysiological development of a child, in: *Psychophysiological Development of a Child: Prenatal, Perinatal and Postnatal Aspects*, M. Sovilj, Lj. Jeličić, T. Adamović, eds., LAAC & IEPSP, Belgrade, 2016 (to be reprinted in: *Int. J. Prenatal & Life Sciences (Special Issue, 2018): Prenatal & Life Sciences Centenary Anthology, 100 Years of Prenatal Psychology: Vital Keys to Understanding the Meaning in Life*, J. R. G. Turner, T. G. N. Turner, eds-in-chief), there is also Serbian edition (2017); D. Raković, On biophysical energy-informational nature of acupuncture system, consciousness and vital energy, in: *Proc. Speech & Language 2015, 5th Int. Conf. Fundamental & Applied Aspects of Speech and Language*, M. Sovilj, M. Subotić, eds., LAAC / IEPSP, Belgrade (similar Invited lecture was given at: *1st Rubicon Group Conference*, London, UK, 11-13 March 2016); D. Raković, On quantum-holographic bases and frontiers of integrative medicine and transpersonal psychology: Psychosomatic, epistemological, and spiritual implications, in: *Proc. 1st Int. Congress on Psychological Trauma: Prenatal, Perinatal & Postnatal Aspects (PTPPA 2015)*, G. Brekhman, M. Sovilj, D. Raković, eds., LAAC & IEPSP, Belgrade, 2015; D. Raković, Quantum-informational bases and frontiers of psychosomatic integrative medicine, in: *Proc. 12th NEUREL*, B. Reljin, S. Stanković, eds., IEEE Serbia & Montenegro Section, Belgrade, 2014 (similar Invited lecture was given at: *7th Europ. Congress for Integrative Medicine (ECIM 2014)*, Belgrade, Serbia, 10-11 October 2014).
 5. D. Raković, *Integrative Biophysics, Quantum Medicine, and Quantum-Holographic Informatics: Psychosomatic-Cognitive Implications*, IASC & IEPSP, Belgrade, 2009, there is also Serbian edition (2008); D. Raković, *Fundamentals of Biophysics*, 3rd ed., IASC & IEFPG, Belgrade, 2008, in Serbian; V. Jerotić, M. Arsenijević, P. Grujić, D. Raković, eds., *Religion and Epistemology*, Dereta, Belgrade, 2007, in Serbian; V. Jerotić, Dj. Koruga, D. Raković, eds., *Science - Religion - Society*, Orthodox Theological Faculty SPC & Ministry of Religions of Republic of Serbia, Belgrade, 2002, in Serbian; and references therein.
 6. M. Rakočević, Tesla's hidden holism, Invited lecture at: *Int Congress Nikola Tesla 2017: Disruptive Innovation*, Belgrade, 02.06.2017, preprint; M. Rakočević, The universal consciousness and the universal code, in: *Consciousness: Scientific Challenge of the 21st Century*, D. Raković, Dj. Koruga, eds., ECPD, Belgrade, 1995, 1996, two English editions & there is also Serbian edition (2008); Dj. Koruga, Information physics: In search of a scientific basis of consciousness, *ibid.*; and references therein.
 7. F. Holmes, *The Life of Mozart Including his Correspondence*, Chapman & Hall, 1878, 211.