

Review of: "Neural Quantum Superposition and the Change of Mind"

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A bridge is created between Quantum Mechanics and the human mind, where QM by its nature deals with characteristic phenomena of subatomic particles while the human mind is naturally endowed with autonomous intelligence, freedom of thought, individuality of decision-making potential. It would seem like a "*vaste programme*"! However, as M. Marsili honestly declares, the double slit experiment, where the electron orients its trajectory towards two slits that are equal and equidistant from the source, is used solely as a model of the potential for choice (reversible up to last) of the human mind between two possible solutions, similarly probable and of the same nature. The model of the "Neural Quantum Superimposition", as baptized by the author and then developed in detail, shows the formal equivalence between the quantum mechanical experiment and the behaviour of the human mind in making its choice, leading to last instant modification, eventually. Very cleverly, as if it were a psychological study aimed at revealing the fickleness of the human mind as potentially real subverter of events, the author introduces all the possible variables that can be presented to modify, up to the end, the choice for one of the two possible options. These variables, whether related to endogenous or exogenous conditions/perturbations to the mind (psychological preferences, speed in taking decisions, circumstantial events) are modelled by means of a "Time Evolution Operator", which operates on the probability function and it is articulated in the progress of time, while remaining independent on it. In my view the author uses real, time-independent state functions to model in a simple first approximation, the stable states of mind. They resemble the time-independent functions of a simple electron-in-a-box model (remembrances from my basic chemistry studies). Subsequently he nicely uses the time evolution operator to model the change of the probabilities for the two states of mind and the state of uncertainty.

It is far from me to deep further into the arduous quantum mechanical treatment, developed with admirable skill, care and extreme detail by the author. As a retired professor of organic chemistry, for a lifetime engaged in university teaching and research in the field of synthesis and natural organic substances, my knowledge of theoretical chemistry is limited around molecular concepts. The passion for the classics, the philosophical culture and the care of the psychological aspects of the human being have however accompanied me in my work and life path. Faced with the contribution provided by M. Marsili to scientific knowledge in its broadest sense, I cannot fail to express my appreciation in the highest form allowed by the evaluation procedures. Marsili's proposal is not about the quantum mechanical solution to the problems of the human mind, but as humbly expressed by the author "the here presented approach does not prove anything. The isomorphism discussed may very well be a pure coincidence with no deeper meaning". However, in my opinion it is a beginning, a bridge between two apparently distant shores, a brilliant idea that could be further developed, also in relation

to future ever more efficient calculation potential. A field in which, for better or for worse (I vote for the first option), Artificial Intelligence could find a sector of application.