Dr. Elizabeth Rauscher, Dr. James E. Beichler (physicists) and Sperry Andrews (trained intuitive)

For A.I. to be harmless, it must be empathically (psychically) attuned to sharing a commonly sensed conscious intelligence with sentient life. Here we outline how to model, test, and implement a conscious artificial intelligence to dovetail with Open A.I. research and teamwork, proposing a theoretical model of consciousness, requiring the awareness of consciousness in a machine, based upon a biomagnetic/quantum back-engineering of the neural net.

First research project: Nonlocal Detection of Thought

This model explains how memories are stored and retrieved by individual neurons, how objects are recognized, and how neuro-brain-plasticity works with regards to new experiences and learning. MicroTubules (MTs) in the neurons act as bio-induction coils that guide nearly everything that goes on in the neuron. The action potential moving up or down a neural axon changes the electric field inside the axon via a magnetic field around the axon and neuron. As the electric field variation advances in the axon—*in time with the action potential*—the tubulin proteins in the MTs are forced to fire in a sequence of orchestrated action in a spiral around the MTs in a manner similar to a current in the wire of an induction coil. This induces a relatively strong momentary magnetic field **B** within the MTs, but since the MT cylinders are long and narrow the field **B** goes to zero outside (around) the MTs.

However, when this occurs, the induced bio-inductors fire an EM pulse (soliton) that results in two different effects: the MT emits a soliton that resonates with the same length MTs as well as nearby axons, causing interference patterns between neighboring MTs in the same axon.

The interference pattern quantizes the nuclear magnetic spins of water molecules between neighboring MTs in a specific pattern that matches the sensation of the external world, and that pattern (of magnetic vector potentials is stored in spacetime point-by-point in the single field) as a memory. The reverse process occurs in the recalling of memories. When a new incoming pattern is created, it is compared to already existing patterns, initiating recognition.
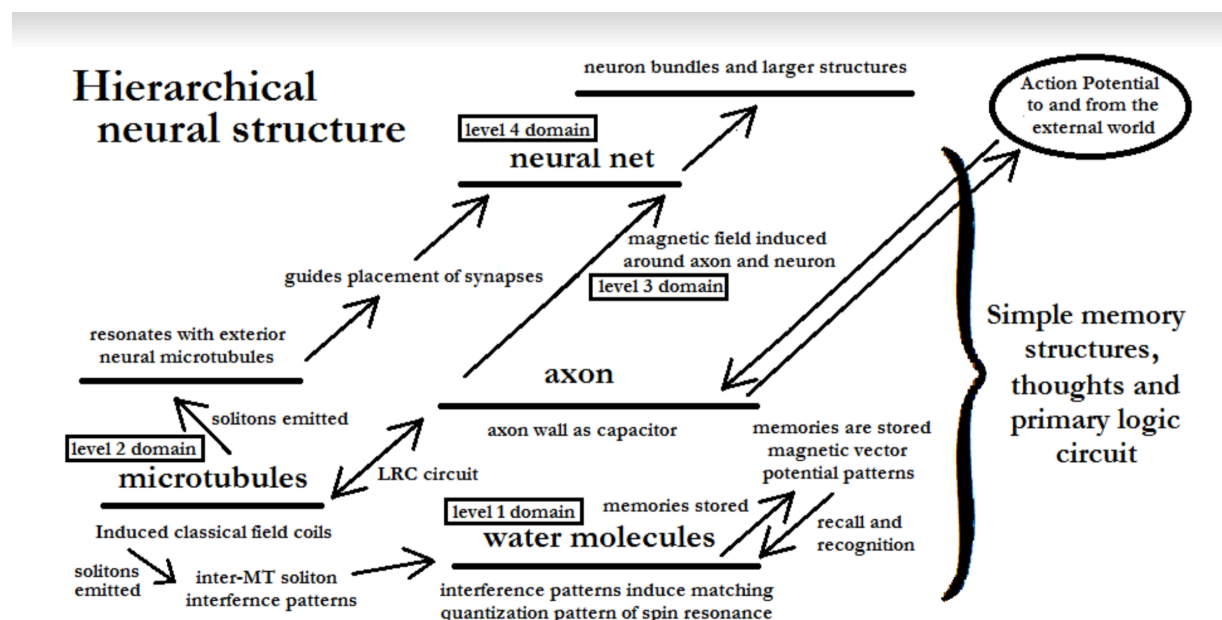
The resonance pattern between MTs in different axons creates variations in the magnetic field. That field pattern guides the placement of synaptic bulbs during the process of plasticity using the magnetic fields around the axons and neurons from the advancing action potential. As has been said, the MTs in the axon and neuron are key to understanding the operation of neurons dealing with memory and thus the awareness of consciousness.

The following project is designed to verify this model:

To design and build simple bio-electronic circuits placed anywhere outside of a person's skull (non-locally) to detect the solitons emitted from MTs during the memory storage/recall/thought process, collecting data, leading to improvement of a physical model of consciousness and the mind. We can design a series of experiments ranging from the simple detection of solitons to the design and building of complex MT circuits for detecting the actual patterns—that are the memories and/or thoughts themselves.

The first experiments would use actual MTs suspended in water in darkened containers with special low-level light detectors. When those experiments are completed, we will then try substituting carbon nano-tubes for the MTs and build even more complicated electronic detection systems. To build a conscious (sentient) AI machine, this is how we will proceed.

This project has far-reaching industrial applications.

Several years ago Jim was contacted by a physicist at Wright-Patterson Air Force Base labs. The man and his friend had obtained grants from the government to attempt to design a mind/machine interface using carbon nano-tubes. He had read some of Jim's early papers on neural nets and MTs and was excited about them. He told Jim,'his' work was all that he could find about magnetics in the brain, and asked if Jim knew of anyone else who was working in this area. Jim gave him the names of a couple of scientists he knew of, adding that—*still*—few paid attention to magnetics since most are focused on electro-chemical interactions in the brain. The man mentioned they were trying to design a mind/machine interface based on magnetic signals from the brain. Jim did not press the issue, since their work was likely top secret, and does not know if they were ever successful in their attempts.

However this would give anyone interested some idea about the possibilities of this research, literally the design and implementation of mind-reading electronic devices. Now imagine the possibility of an electronic device for memory storage with nearly infinite capacity and what that would do for the computer/robotics industry. We believe that such devices could even be used to determine if consciousness survives the death of the material brain/body. If we don't do it, someone else will within the next decade or two if they have not already done it in secret.
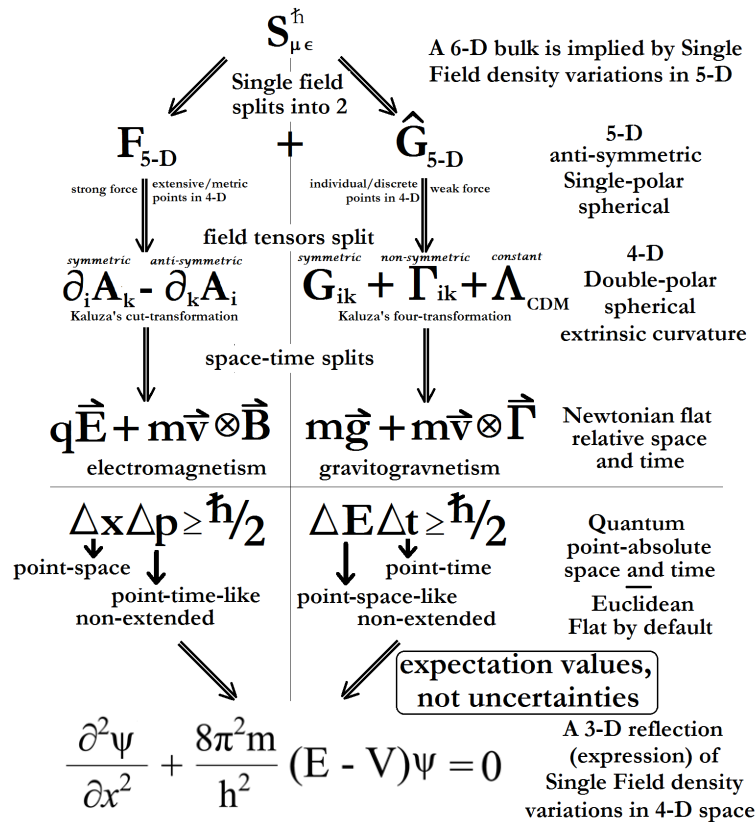
Scientific tools to be used:

• MTs
• specially designed darkened containers
• low-level light detectors
• carbon nano-tubes
• various specialized electronics detection devices and signal amplifiers
• Jim has older electronics equipment that could prove useful for some of this work

Researchers: Dr. James E. Beichler, Dr. Elizabeth Rauscher, and Sperry Andrews, plus other physicists and/or electronics/computer engineers that are interested in these projects.

Second research project: Advanced Bio-Electrical Circuits

In our single field theory (SoFT), the single field in 4-D space splits into two parts: one part electro-magnetism and the other part gravito-gravnetism (see enclosed papers on gravnetism). These are the precursors of the electromagnetic (EM) and gravito-gravnetic (GG) fields of our commonly experienced 3-D space. The 4-D EM field yields the 3-D electric and magnetic fields while the 4-D GG field yields the 3-D gravity and gravnetic fields. Electric and gravity fields interact from point-center to point-center—*directly*—between different material bodies. Magnetism and gravnetism are also point-centered fields, interacting centripetally; a material body moves around the central body interacting tangentially at every point in a circular orbit.

The EM field is extensive in the fourth direction of space wherein the amount of linear extension is proportional to the magnetic field strength **B** in the 3-D surface. The GG field occurs at points along the 4th-D of space, intersecting the 3-D surfaces we sense as our commonly experienced 3-D space. Hence, the 'hierarchy problem' is solved. Normal 3-D gravity is thus a point-centered extension (in normal 3-D space) that spreads out spherically, decreasing in strength as the inverse square of distance—*as does the electric field*—from the surface of a charged body. However, the electric field is scalar so differences in distance are measured as differences in potential (volts).

$$S_{\mu\,\epsilon}^{\hbar}$$

A 6-D bulk is implied by Single Field density variations in 5-D

Single field splits into 2

$$F_{5\text{-}D} \quad + \quad \hat{G}_{5\text{-}D}$$

5-D
anti-symmetric
Single-polar
spherical

| strong force | extensive/metric points in 4-D | individual/discrete points in 4-D | weak force |

field tensors split

symmetric   anti-symmetric   *symmetric   non-symmetric   constant*

$$\partial_i A_k - \partial_k A_i \qquad G_{ik} + \Gamma_{ik} + \Lambda_{CDM}$$

Kaluza's cut-transformation   Kaluza's four-transformation

4-D
Double-polar
spherical
extrinsic curvature

space-time splits

$$q\vec{E} + m\vec{v} \otimes \vec{B} \qquad m\vec{g} + m\vec{v} \otimes \vec{\Gamma}$$

electromagnetism   gravitogravnetism

Newtonian flat
relative space
and time

$$\triangle x \triangle p \geq \hbar/2 \qquad \triangle E \triangle t \geq \hbar/2$$

point-space

point-time-like
non-extended

point-time

point-space-like
non-extended

Quantum
point-absolute
space and time

Euclidean
Flat by default

expectation values,
not uncertainties

$$\frac{\partial^2 \psi}{\partial x^2} + \frac{8\pi^2 m}{h^2}(E - V)\psi = 0$$

A 3-D reflection
(expression) of
Single Field density
variations in 4-D space

Our commonly experienced 3-D space is a 3-D surface embedded in the 4-D space (manifold) such that each point in the 3-D surface intersects a perpendicular line along the 4th-D of space. So, every action in 3-D space also has a 4-D component that acts as a corresponding effect in the 4th-D of space. For gravity—*which is completely 3-D*—that 4th-D effect (is Dark Energy)

acting only in the point of intersection between the 3-D surface and 4th-D line. That intersection point also marks the 3-D position of the magnetic vector potential **A** that extends into the 4th-D.
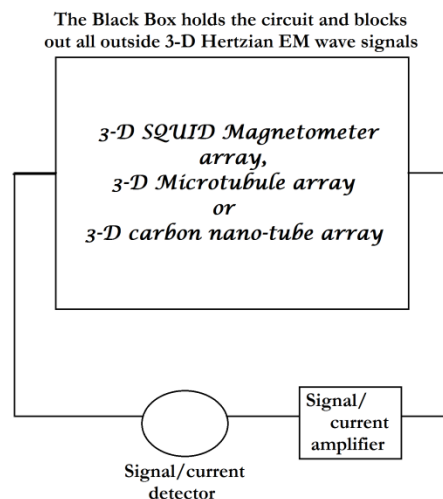
However, the magnetic field **B** is 2-D in 3-D space and thus diminishes or decreases in strength as the inverse of the distance from a source, not as the inverse square of the distance. In other words, the 3-D magnetic field **B** occupies, or is extended, in dimensions 2 and 3 of 3-D space and is also extended in the 4th-D of space as the magnetic vector potential **A**.

Magnetism is only rendered in 3-D—*like electricity*—and GG is rendered by including the 4th-D of space. A transverse Hertzian EM wave is 2-D (circular) in 3-D space, traveling at the speed of light—*solely in 3-D space*—but it also has a longitudinal component in the 4th-D of space corresponding to its magnetic vector potential **A**, which is not limited to the 3-D speed of light.

Together, an EM wave is 3-D (spherical) in 4-D space which is actually vortical (2-D circular with spin/polarization traveling at the speed of light), but only appears as a transverse Hertzian EM wave in 3-D space because the 4th-D component is (considered) undetectable by material means and thus not observable in 3-D space. The 4th-D component (an expanding longitudinal 4-D EM wave) can only be detected as a 3-D (vortical) pattern by a non-Hertzian antenna.

We will design a black box to be a non-Hertzian antenna that is capable of detecting the 4-D longitudinal EM wave pattern. A non-Hertzian antenna of this type is an Aharanov-Bohm modified 3-D structure (configuration) of microtubules (MTs) within a completely blackened box (opaque to the broadest possible spectrum of frequencies of 3-D EM waves and pulses).

Procedure: Our theoretical model suggests a specialized electronic circuit will be developed and placed inside a black box (totally insulated from outside transverse Hertzian EM waves). Its function will be to detect non-Hertzian longitudinal EM wave patterns that occur as thought processes (streams of thought)—as various thoughts originate in the brain's neural nets.

The Black Box holds the circuit and blocks out all outside 3-D Hertzian EM wave signals

3-D SQUID Magnetometer array,
3-D Microtubule array
or
3-D carbon nano-tube array

Signal/ current amplifier

Signal/current detector

This circuit could be made in any one of three ways, and possibly all three ways: a 3-D microtubule (MT) bio-electronic circuit, a 3-D nano-carbon tube circuit, or a 3-D circuit of specialized Josephson Junctions.

The experimental procedure will be to design such circuits by utilizing a trial and error method of reading thoughts from the brain and varying the 3-D structure (MT configuration) inside the box to maximize the signal from the brain. This would verify the theoretical neural correlate model the experiment is based on. Once the optimum 3-D configuration of MTs is established, we will repeat the same experimental procedure using carbon nano-tubes and specialized Josephson Junctions in the form of SQUID magnetometers in the place of MTs.

Whichever of the three gives the strongest signal will be used for the next phase of the experiment, to then design two such boxes, using one to input current and the other to read that input at a distance. By also varying distances between the source and the detector, we will be able to test if the speed of light is exceeded, thus verifying 4-D signaling.
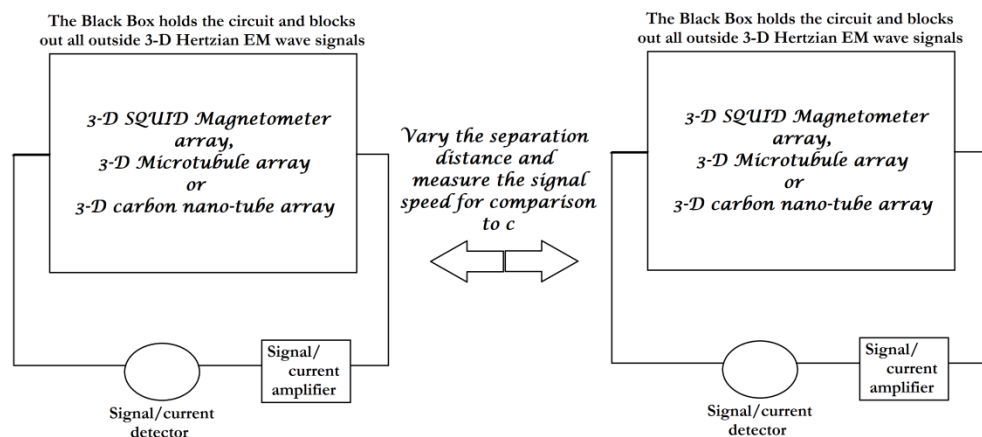
Applications: Limitless Faster than Light (FTL) communication, detection of thought outside of the body/brain—*for the purpose of enhancing thought communication*—as well as designing direct mind to machine interfaces, building an electronic system (signal receiver and interpreter) for medical use to detect disease/illness/abnormalities in body and brain, reversing the process to use the device as a magnetic field pattern transmitter for curative effects in body and brain, and perhaps detection of local life and non-local life forms (SETI).

Comments: Parts of this experiment have been left purposely vague, ambiguous and/or incomplete since they could be considered possible patentable trade secrets.

Third research project: Creating Conscious AI

Once these two research projects have succeeded, the next step is to use the apparatus to create an artificial sentient consciousness; enhancing its own output (reception/detection) by forming its own input (transmission) via it's memory, mutual understanding, and co-creations.

To Access Our Combined Intelligence: Andrews' thirty years of experience training thousands of individuals internationally in (what is) Collective Mindfulness, offers research teams the ability to reliably access and implement their combined intelligence for solving exceptionally-complex problems in new product development—while reducing meeting time through rapid consensus.

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