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Review Article

The matter of mind: A review of "essentials of a theory for how brain structure contributes to the substance of consciousness" for clinical significance by the author

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Prospects are good for a quantum neuroscience that integrates electrochemical and quantum properties in a model of consciousness' substance. Quantum coherence explains the solution chemistry behind signal transmission in neurons, as electromagnetic field fluctuations induced by electric currents and the ebb effect. An EM field theory of consciousness such as CEMI can account for why coordination of electromagnetic field fluctuations from the cellular to organ wide scale so closely resembles fluid holism of consciousness, for early experiments indicate that phase-locking between EM fields and cellular structures such as possibly ion channels cause ultrasychronization amongst brain matter. It seems likely that particular frequencies of EM radiation emanating from electric currents which accelerate on a microscopic scale travel through neural tissue at the distance of many micrometers. As low frequency waves of EM radiation flow around and through molecular structure, it is hypothesized that they superposition with atoms such that extremely hybrid wavelengths result. The dimensional structure of these superpositions may produce basic constituents of appearance, and nondimensional qualities associated with vibration could be responsible for basic fragments of feeling. Emergent organization of matter in the brain then might increase the resolution of resonant wavelengths to form a diversity of percepts. Feedback loops within neural networks, phase-locking and entanglement could orchestrate quantum percepts on a large scale. If coherence fields as arrays of atomic structure and EM radiation are conclusively proven to exist, a theory which adequately addresses the substance of consciousness is attainable. This clarification of consciousness' mechanisms would do wonders for the medical approach to mental illness, diffusing tensions caused by the chasm between anosognosia-afflicted patients and a stigmatizing public, in addition to suggesting new treatments while setting science on course for the next era of theoretical advances.

Key words: Consciousness, neuroscience, quantum physics, CEMI, coherence field, wave particle duality, superposition, entanglement, ebb effect, electromagnetic field, electromagnetic radiation, anosognosia, schizophrenia, mental health

INTRODUCTION

Quantum coherence and consciousness

In consciousness theory, the explanatory gap can be described as a couple of core issues. The combination problem refers to mysteries surrounding how trillions of material components in the brain and environment can interact to produce apparent unity of subjective awareness. A still more challenging problem to address is how awareness looks or feels like anything at all rather than simply being chemical concentrations, electricity, in essence purely objective machinery. Why is the substance of consciousness comprised of percepts which can seem to defy the nature of classical space and time, being almost nondimensional in some ways? Neuroscience along with our basic understanding of matter as modeled by physics have made such great strides in the 21st century that it is finally possible to discern the preliminaries of a theory for how substance of perception arises from substance of the conventionally physical world. Outlining these basics was the goal of this paper.

Quantum physics is key in accounting for the material foundations of mind. Wave/particle duality is a feature by which energy can flow amongst and through matter even while this matter consists of solid particles with chemically stable structures and relationships. Superposition is the property by which matter,

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all of which has oscillating wavelength, can conjoin in hybrid wavelengths describable with an equation known as the wave function. Light gives the quintessential example of superposition when its wavelengths blend as the visible color palette. Within small molecules such as methane (CH_4) atoms can also superposition, but constraints soon take effect as the structure of matter increases in complexity, so large biomolecules for instance contain pockets of superposition within a more particulate chassis. I hypothesize that light can superposition with atoms such that electromagnetic matter is essentially composed of atomic nodes within photonic fields, and it will be shown how this may be key to workings of the brain. Entanglement is the mechanism by which the behavior of matter's "wavicles" can synchronize across distances of many kilometers. So far this phenomenon is only modeled probabilistically, from investigation of large quantities of wavicles. Carefully designed experiments have demonstrated that phase states in photons or quantum spins of electrons can evince statistically significant correlations when observed in bulk. This effect appears to occur faster than light, at a minimum of 3 trillion meters per second, and even happens retroactively when perturbing the path of photons after they have traveled past the point of intersection as indicated by the speed of light (300 million meters per second) also induces correlations.

States within which wave, superposition and entanglement obtain are called "quantum coherence", simply meaning the wavicles bind in such a way that entanglement correlations or a single wave function apply. As matter increases in mass and complexity, coherence tend to be suppressed somewhat because wavicles destructively interfere in a phenomenon called "decoherence", preventing them from forming these highly integrated structures (Arancibia-Carcamo, et al. 2014). This is why wavicles at the macroscopic scale are relatively inert particles modelable using classical mechanics. But matter is still in essence subatomic, and under many conditions extensive quantum coherence can takes place. The most plausible theory to this point for describing the substance of consciousness as a physical phenomenon regards coherence involving large collections of atoms as key to neuronal function and the workings of mind.

LITERATURE REVIEW

Quantum coherence and the electromagnetic mechanisms of neurons

Quantum coherence is crucial for understanding function of the neuron. Like all aqueous solutions with ions, those inside neurons contain a complex contour of positive and negative charge. This is due to water molecules which are polar, the solvation shells of H_2O that form around positive ions, and the ions themselves. "Positive" and "negative" in this case are relative concepts; for the solution's electromagnetic properties are entirely generated by electron wavicle structure. Electron energy tends to flow from regions of less positivity or more charge concentration to regions of more positivity or less concentration, maintaining a dynamic equilibrium of rapid energy flow as atoms diffuse around. Because this energy flow is so disordered or "entropic" in solution, with electron waveforms haphazardly warping into a vast variety of orientations like all large agglomerations of particles, the baseline condition at equilibrium is one of destructive interference. Thus, electron waveforms tend to localize *via* a collective decoherence.

With the introduction of positive ions, electron energy of solution becomes less concentrated at that location and waveforms move towards it as an electric current, which is a relatively coherent state of flow persisting until dynamic equilibrium is reached. However, the flow of electric current initiates proximal to positive ion increase and travels outward into the rest of solution as a wavefront accompanied by an electromagnetic field fluctuation. The less positive a solution is adjacent to the positive ion increase, the faster the current's wavefront will propagate, and if charge is constant the wavefront will decelerate because of a tendency to spread in all directions such that its force is attenuated. Since the wavefront involves decelerative inertia across space when charge is constant, I have named this the "ebb effect".

So far this is all theoretical, but proof comes from how structure of the neuron can be explained by these concepts. The nodes of Ranvier are spaced at regular intervals along the length of an axon, where voltage-gated Na^+ channels are located. Na^+ channels initiate action potentials at the junction of soma (cell body) with axon, called the axon hillock, and play a vital role in sustaining the chain reaction which sends electric current through distances that can be meters in length. A node of Ranvier is bordered by a paranode on both sides, where the layer of fat called myelin that envelops the axon to increase conductance speed attaches to the cell membrane. The paranodes are bordered by a juxtaparanode on both sides, where voltage-gated K^+ channels are located. The majority of the axon is internodal space between juxtaparanodes, where K^+ leakage channels and sodium-potassium pumps help restore ion concentrations of the resting potential between signal transmittances (McFadden, 2021).

When Na^+ enters the cell through voltage-gated ion channels at a node of Ranvier, this initiates the ebb effect. Force of attraction is sufficient to drive the wavefront through paranodal space to the juxtaparanode despite inertial resistance. When the wavefront reaches a juxtaparanode, the electromagnetic field fluctuation coupled to it stimulates voltage-gated K^+ channels to begin letting this ion diffuse out of the cell. Disparity of charge heightens between the initial node of Ranvier and juxtaparanode, accelerating electric current towards increased Na^+ at the initial node with enough force that the complementary wavefront traveling in the opposite direction is propelled all the way through internodal space to the next juxtaparanode. At this point, concentrations around the next node of Ranvier have not been fully restored from the previous action potential, so once a wavefront attains this node of Ranvier's sphere of influence, acceleration is resumed. The electromagnetic field fluctuation then stimulates voltage-gated Na^+ channels to again let this ion into the cell, continuing the sequence beyond numerous nodes to the synaptic cleft. The ebb effect explains how quantum coherence can mediate signal transmission in a solution of positive ions, *via* a wavefront and companion electromagnetic field fluctuation which spread through internodal space in the opposite direction of current flow, rapidly transiting from node to node.

The mechanism is similar in nonmyelinated dendrites, where voltage-gated Na^+ channels send signals between nodes as EPSPs (Excitatory Postsynaptic Potentials). Cl^- flows into dendrites through ion channels as IPSPs (Inhibitory Postsynaptic Potentials) to prevent neuron firing while at rest. Cl^- channels are proximal to the junction of dendrite and soma so that less are required to

mitigate incoming signals, while Na^+ channels are located in distal regions as well. Counteractive propagation of a wavefront from Cl^- influx, which in this case follows the path of current flow, can block signal transmission, but if incoming energy from an EPSP is sizable enough to penetrate this barrier, a resulting wavefront rapidly accelerates through the soma in the direction of current flow due to large disparity between negative charge at the dendrite/soma junction and the largest quantity of Na^+ channels along with positive charge concentrations in a neuron at the axon hillock. Whether a signal, more specifically an electromagnetic field fluctuation, achieves enough strength to span the soma and reach the axon hillock is determined by cumulative EPSPs and IPSPs of at least several dendrites per neuron.

This model explains why an axon hillock has the largest quantity of Na^+ channels in a neuron, so as to draw electron energy across the entire soma while overcoming greater degrees of repolarization in proximal nodes, among many additional observations such as spacing and density of ion channels (McFadden, et al. 2014; Ford, 2015). The ebb effect ties all of neuron anatomy together into a cohesive picture of what is going on. Identifying electromagnetic field fluctuations or LFPs (Local Field Potentials) as the mechanism by which ion channels activate associates cellular structure with EM fields coursing through the brain on a macroscopic scale as recorded by EEG. These waves, which are primarily electric due to the destructive interferences of asynchronous quantum spin that cancel out magnetic properties of atoms even at the cellular scale, can range from millimeters to a dozen centimeters in length (Arancibia-Carcamo, et al. 2017). Holism of consciousness certainly makes sense if the electric field binds tissue into an integrated totality as it oscillates and flows through the brain's functional regions, and preliminary indications are that this is indeed the case.

Coherence fields in the brain

Molecular biologist Johnjoe McFadden's CEMI (Conscious Electromagnetic Information) theory aptly describes EM field effects. In this model, the phenomena introspected as intentional agency arise from CEMI fields which influence neural networks on a macroscopic scale. Though the mechanism is still poorly understood, preliminary indications are that this synchronizing effect results from phase-locking mediated by the interaction of ion channels with overlapping EM fields, integrating holistically functional brain regions beyond what feedback loops alone can accomplish. Neurons that have adapted for pervasive phase-locking are involved in conscious brain processes, coordinating neural networks broadly enough to be what we experience as a motivational complex, while neurons which do not engage in phase-locking constitute unconscious processes. This accounts for some common observations about the way human minds work, notably that high arousal consciousness consists in serial processing as opposed to massive parallelism of the unconscious, explained as a disjunction of ultra-integrated CEMI fields from bordering EM fields, as well as the fact that we experience some degree of free will, in this model simply being identical to especially prominent EM field effects (Alekseichuk, et al. 2019). It is the current author's opinion that a construct such as CEMI theory can explicate the subconscious also, as a spectrum of low to high arousal evoked by relative breadth and saturation of phase-locking.

So EM field fluctuations ranging from the intraneuronal to macroscopic likely bind neural networks such that emergent functions of vision in the occipital lobe, analytical reasoning in the prefrontal cortex, etc. can be tightly orchestrated to evince holistic effects, manipulating the magnetic properties of atoms and molecules within large-scale flow shapes that oscillate amongst and travel through brain tissues. But the mystery of how percepts arise from chemical concentrations and electrical impulses remains. Why does consciousness look and feel like perception rather than simply being circuitry? What is this additional substance that traditional anatomy does not model?

Electric currents accelerate in many locations within a neuron, near the nodes of Ranvier, along the length of dendrites, due to the juncture of soma and axon hillock, and around the synaptic cleft as a product of steady gradient between Na^+, K^+ and the synapse's Ca^{2+}. Accelerating coherence currents of electron energy emit electromagnetic radiation that as a general rule is lower in frequency the larger the current, so radio waves range anywhere from 1mm to 100 km in wavelength, while orbitals of an atom's valence shell emit visible light, from 400 nm -700 nm. Microscopic electric currents in the brain emit higher frequency radiation than for instance a transmission line, but this radiation is nonetheless low enough in frequency to travel through both liquids and solids, like radio waves and more unlike visible light. If much of this EM radiation superpositions into the electron orbitals of atoms as it transits through them with a speed that is effectively instantaneous in the brain, spreading at a distance of many micrometers until its intensity diminishes to negligibility, this is almost certainly sufficient to bind hundreds if not thousands of molecular structures as individual units of extremely hybrid wavelength. In combination with entanglement effects that cause these photonic fields and atomic nodes to tightly cohere, this could produce wavelength complexes intricate enough to be what we experience as a subjective image. If the hypothesis is accurate, these entangled superposition arrays or "coherence fields" do not merely correlate with image perception but actually are the image itself.

At this stage, we do not have much direct evidence. Research into the mechanisms of consciousness has thus far focused on microtubules. These cytoskeletal structures have a tightly knit arrangement of molecules hypothesized as amenable to superposition. Experiments show that the tryptophan molecules of microtubules form a complex that enters a coherent state of energy distribution spanning micrometers in the presence of UV light. Anesthetic seems to inhibit the process, hinting at a connection with consciousness. This mechanism is similar to that found in photosynthetic reaction centers and may be quite common in nature. Initial data indicates that longer wavelengths exact these effects at greater distance scales, so interaction between relatively large molecular arrays in the brain and low frequency EM radiation as emitted by electric currents seems within the realm of possibility. We have much more data for the influence of EM fields, which in addition to phase-locking and numerous further functions mediate energy transduction in transmission channels of the cytoskeleton, processes governing the entire structure of a cell along with the movement of components such as mitochondria, vesicles, etc (Neven, et al. 2022).

Plenty of circumstantial evidence points to light's role in coherence fields. Within a neuron, electric current accelerates fastest over the largest amount of space while transiting the soma, and a relatively steady electrical gradient ranging from Na^+ and K^+ to Ca^{2+} is present around the synapse. This also happens to be where complex molecular arrays that superposition with EM radiation would likely be located. The superposition of low frequency EM radiation with molecular structure is probably not obstructed by factors of heat and moisture that have seemed prohibitive to widespread coherence among molecules alone. Within a plenitude of environments, photon entanglement is especially robust while operative at large spatial ranges, which supplies a viable binding mechanism for percept units constructed of molecular parts that are distributed somewhat widely in cellular solution. And coherence fields of this kind explain why the brain is composed of grey and white matter. Grey matter of dendrites, soma and the axon's interior is darkly shaded as it absorptively superpositions with large amounts of radiation at a range of frequencies to form percepts, while the myelin of axons is white to reflect radiation that is not absorbed so intensity minimally attenuates with distance. From the outside brain matter is greyish, but from the inside much of its atomic structure may bind with waves of EM radiation to form the substance of percepts. This can possibly make sense of mental images and hallucinatory artifacts of brain processes, perceptual phenomena which are not necessarily stimulated by environments outside the body.

If the substance of image percepts is so strongly tied to dynamics of electromagnetic matter within the brain, why does the perceptual field appear so convincingly to be in the environment? For instance, if visual percepts reside amongst biochemistry of the occipital lobe or elsewhere in the brain, how is this not introspected as such? We must remember that the sharply focused optical field is only the size of your thumb held at arm's length in front of the face, with the majority of vision pieced together from eye saccading and involuntary memory. The brain has adapted a distribution of tissues and functions to discern the unity of nature effortlessly in many cases, but to a profound degree this is indirect representation rather than direct correspondence. The issue of how percepts can arise from a brain's coherence fields is in essence the same as how electrical signals organize neural networks within which these percepts are located. Just as neural units correspond to a plethora of functions, coherence field units probably map onto brain structure as a material equivalent of subjective imagery. Specially adapted phase-locking of neurons with EM fields could synchronize percepts within relatively large regions of the brain.

Then why does subjective experience include somewhat nondimensional qualities of subjective feel as well? The following of course needs to be conclusively proven, but feel percepts most likely emerge from the way coherence fields as arrays of entangled superposition resonate, vibrate. This would mean that the building blocks of sensation, emotion, etc. are intrinsic to matter, as are those of image formation. In the natural environment, vibrating wavelengths do not feel or appear with much resolution, but emergent structure enhances the body's ability to translate these building blocks into functional experience.

At first glance it seems that neural network synchronicity as mediated by feedback loops and phase-locking is active, while the perceptual facets of coherence field modulation in the brain such as images and feelings would be passive, so why did percepts develop what seem to be such overabundant rather than parsimonious forms? If coherence field theory is accurate, filling this gap in our knowledge of the physical world almost with the weight of necessity, basic fragments of feeling and appearance are present at quantum scales. Matter would mutate as a coherence field at nearly fundamental levels, so more complex structures of experiencing will ineluctably result in more complex perceptual forms such as imagination, thought and emotion, though emergence can adopt almost inexhaustible variety. This is not the entire story, for nonlocal entanglement at great distances seems to require physical forces which include some non-electromagnetic component, but to the extent that these more exotic phenomena interact with brain tissue, the coherence field concept and a quantum neuroscience seem promising as the framework upon which to construct working models of so-called subjectivity's substance.

DISCUSSION

Anosognosia, mental health and the culture of consciousness

It is estimated that 57-98% of those diagnosed with schizophrenia have co-occurring anosognosia, which is the name given to a patient's absence of insight that he or she has a health condition. Inability of patients to acknowledge that lack of treatment brings on symptoms of schizophrenia leads to much noncompliance with doctors, relapses accompanied by degeneration of brain tissue, repeated hospitalizations, and a stigma that grows as available medical measures commonly remain less effective than they could be due partly to a patient's decision-making.

Analysis of those diagnosed with schizophrenia has identified differences in the Prefrontal Cortex (PFC). The dorsolateral region was reduced in size, important for self-monitoring and organization. This may be responsible for inaccurate assessment of causality when the patient regards his or her symptoms. The orbitofrontal region was conversely enlarged. This portion of the brain is critical for attributing significance to events, so may cause excessive salience of perceptual symptoms, a hallmark of schizophrenia whether or not anosognosia occurs. Studying the performance of those with schizophrenia on the Wisconsin Card Sorting Test (WCST) revealed a seeming correlation between insight impairment and inflexibility of abstract thinking, functions linked to the PFC. Lower grey matter volume was observed in the ventrolateral prefrontal cortex, a brain region which participates in working memory and decision-making, potentially reducing the capacity to entertain alternative interpretations about one's misperceptions.

The anterior insula, involved with emotional processing, and the posterior insula with its role in processing somatosensory (bodily sensation), auditory and visceral modalities has been pinpointed as abnormal. The insula makes complex connections to additional areas implicated in schizophrenia, such as the PFC, limbic system, thalamus and sensory cortices. Post-mortem examinations have revealed especially prominent size reduction in grey matter of the insula, and measurements of regional Cerebral Blood Flow (rCBF) using Positron Emission Tomography (PET) showed atypical activation during a task challenging the ability of subjects to attribute agency to their perceived actions. MRI

has identified lower volume of both grey and white matter in the insulas of relatively stable schizophrenia patients. The prevailing model postulates the anterior insula as involved in conscious error detection, while the posterior insula integrates somatosensory input and structures concomitant with further modalities. The former might be tied to ideas of reference, and the latter hallucinatory delusions.

In 2001, studies began to single out a Default Mode Network (DMN) active while subjects are at wakeful rest and deactivated during focused behavior, including structures such as the medial prefrontal cortex, lateral parietal cortex, anterior singulate cortex, posterior singulate cortex, and precuneus. This distribution of brain regions is deeply involved in self-reflection, social cognition and mind-wandering. Hyper connectivity tends to be present in those at high risk for developing schizophrenia, and the DMN deactivates less in these individuals during focused tasks. In relatives without a schizophrenia diagnosis who manifest this trait, stronger connectivity was found in the DMN, hinting at a possible link between poor insight and deterioration in a specific phenotype of self-related processing (Lehrer, et al. 2014).

So irrespective of how these differences develop, we can claim as a general rule that many patients with schizophrenia are more concrete thinkers, have greater difficulty in accurate attribution of causality to various perceptions such as somatosensory feelings, sounds and interoceptions on both a conceptual and aesthetic level, as well as being prone to extraordinarily spontaneous trains of thought, perhaps describable as a type of focused awareness more fused with the unconscious. When executive controls of cognition break down from gene expression and/or stressors, concepts can become palpable as perceptions, perceptions palpable as sensory input, and stream of consciousness hard-pressed to decisively and analytically integrate experiences as information. The afflicted's capacity to cope with stimuli and navigate through illusion to reality in the motives or meanings of one's milieu are strained. Perception of what is going on along with apprehension of the reasons why things happen grows uncertain, confused or delusional, and the psyche is susceptible to caving in under the pressure, losing touch with the world to such a degree that one cannot articulate nor in many cases even recognize the problem.

The emblematic form of schizophrenia consists in a cognitive profile that is at risk for detachment from the causal implications, abstractions and normal stimulations of sociocultural reality. But individuals who do not have schizophrenia usually go through comparable sorts of struggles at some point during their lives, with a similar taxing of the same brain regions under difficult social circumstances. Challenges to a human being's psychical complex of executive control, affect and perception are common, so the majority of the population would report the same range of symptoms upon initial contact with a doctor or therapist. Diagnostic criteria associated with schizophrenia have thus expanded to become the equivalent of flulike symptoms in mental health, a broad category encompassing those with the standard instantiation and many that have the same social issues arising from alternate cognitive/behavioral causes and backgrounds.

Looking at schizophrenia from the most general perspective possible, our decades of experience in treating this disorder indicate that its symptoms, from full-blown psychotic breaks to chronic difficulty in ordinary situations, arise from incapacity of the mind to deal with perceptual or affective stimulation *via* executive control. Though further research is needed to detail common, rare, old and new categories of schizophrenia diagnosis, it seems apparent based on initial analysis that the disorder results from excesses in psychical mechanisms of stimulation, deficiencies in psychical mechanisms of stimulation or executive control, and environmental triggers. Extreme executive control in the presence of normal perception, affect and environment does not usually appear unhealthy nor result in behavioral troubles, and this disposition is much less likely to fall under the purview of long-term counseling or medication management.

Overstimulated perception is the source of traditional schizophrenia. This is the easiest form to diagnose because it inclines to produce more obvious behaviors such as reacting to things that are not there, confused or delusional thinking, becoming agitated or catatonic for reasons which are not always clear to the general public, and of course anosognosia. Medications designed for schizophrenia were first tailored to this type of condition, and the need for treatment is not difficult to ascertain. When accompanied by severe emotional outbursts, a diagnosis of schizoaffective disorder is usually the outcome and a somewhat different regimen of medications seems appropriate.

While schizophrenia as a diagnostic category evolved, it also began to encompass conditions of under stimulation. These cases can evince symptoms such as flat affect, difficulty in figuring out the motives of those one interacts with due to incomparable perceptions, and relationship struggles. This is essentially the opposite of hallucinating, an anosognosia characterized by lack of intuition into the minds of typical human beings. Talk therapy and social supports are in principle capable of improving insight for these patients, but medicine has not attained the efficacy to modify this cognitive profile into more ordinary forms, which might be possible by manipulating or supplementing biochemistry in the brain and body once relevant mechanisms have been discovered.

Inability to perceive stimulations that influence one's own behavior or one's stimulating effects on those in his or her vicinity are also commonly diagnosed as schizophrenia. This is a kind of blindness to the impact of one's perceptions and cognitions. The condition includes consistently encountering behavior that seems apathetic, hostile or irrational, incomprehensibility in the causation of one's experiences, and difficulty in connecting with or expressing the motives of typical individuals. When no emotional state or approach proves workable in controlling negative feedback from the social environment, these patients are pushed to the breaking point and affective symptoms are the outcome. Severe anosognosia is a common consequence despite talk therapy, with the patient's social support system liable to disintegration. More recent medications have started to find ways of grappling with this disorder, and improved comprehension of the underlying biochemistry and physiology should help immensely.

The similar problems that everyone has during stressful periods of life due to social environment are not called schizophrenia, but as can be seen from this description of less well-understood forms of the condition that are quickly becoming diagnostic conventions, a strong aspect of social triggering is typically present. The less scientifically and medically theorized a form of schizophrenia is,

the more acute are these social triggers along with companion anosognosia, and the worse the prognosis for even patients who can still think in relatively coherent ways. This innocent word “anosognosia” is the tip of the iceberg for a suite of symptoms that put patients and doctors on the front lines insofar as properties of mind prompt lack of understanding or empathy, stigma, and conflict perpetuated by all affiliated parties.

CONCLUSION

It is obviously preferable to model the physical causes of mental health symptoms rather than force citizens to wage a battle for the purpose of keeping relatives, friends and the public stable, safe and informed, but neuroscience has not had much prospect of explaining in a mechanistic way how the vast variety in percepts themselves, as opposed to the regulation of neural networks, emerges from matter to generate the substance of consciousness. This makes culture vulnerable to a regress towards stereotyping, alienation and strife between demographics, as those in and around mental health treatment knows quite well.

If a framework like coherence field theory can clarify the way percepts arise in conjunction with brain, body and environment, this may manage to refine diagnostic classifications so that comprehension of consciousness becomes dramatically more explicit and less rampant with disinformation, in a way analogous to the impact had by our technical models of neurons, neurotransmitters and brain regions. This would probably be complemented by new classes of medication that modify perception while better circumventing sedative, stimulant and systemic side effects. Perhaps the fidelity of a neuroscience that utilizes quantum physics might finally bridge the gap between science and psyche which philosophers have termed the hard problem of consciousness, uniting matter with mind to rework popular ideas regarding cognition in the next phase of our centuries-long movement towards theoretical/cultural synthesis, boosting domestic accord and actualizing lives.

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CONFLICT OF INTEREST

None

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