

Foundations of Mind 2015

Abstracts

LIVING THE QUANTUM PARADIGM

On the Nature of Quantum Dynamic Variables

James R Johnston

The Shortest Possible Overview Tying Everything Together

Shiva Meucci

A Dream Series: The Entangled Nature of Fragmentation, Undivided Wholeness and the Collective Unconscious

Judy B. Gardiner

Beyond Conception: Ontic Reality, Pure Consciousness and Matter

Leanne Whitney

Quantum Logic is Primary in the Natural World

Cynthia Sue Larson

Science, Religion and Real Life

Julia Bystrova

Consideration of the Nature of Reality from Perspectives of Kashmir Shaivism and Quantum Mechanics

Maria Syldona

ONTOLOGY

The Three Agent Theory Explains Religion, Spirituality and Enlightenment

Frank Heile

Biosemiotics and the Circle of Explanation in the Sciences

Seán Ó Nualláin

Could an Additional Subjective Dimension of Time Provide a Meta-Perspective for Bridging Science and Experience?

Jonathan W Schooler

An Ethics Spontaneously Arising Within a Network of Relationships
Markate Daly

IN THE ABSENCE OF THEORY, RETURN TO VILLA SERBELLONI?

Madza Vierges

The Biofield: Bridge between Mind and Body
Beverly Rubik

**PROBING SUBJECTIVITY WITH NEUROSCIENCE:
NON-INVASIVE PROBES**

QEEG Studies of the Acute Effects of the Visionary Tryptamine DMT
Juan Acosta-Urquidi

**Fractal Cognitive Triad: A Theoretical Connection between Subjective Experience
and Neural Oscillations**
Justin Riddle

THE REAL MADRID MODEL FOR UNIVERSITIES

Sebastian Benthall

**QUANTUM ENTANGLEMENT, NEGATIVE PROBABILITIES
& NEURAL OSCILLATIONS**

“Non-Classical” Mind: Does it Exist?
Bob Petr

R.P. Bajpai

Experimental Assessment of Telepathic Communication Wave Function Collapse

Karla M. Galdamez

Review of the Compatibility of Physical Assumptions with the Foundations of Mind
Wolfgang Baer

ECOLOGICAL CONSCIOUSNESS, ENVIRONMENTAL TECHNOLOGY

Agroecology Scaling Up for Food Sovereignty and Resiliency
Miguel A. Altieri and C.I. Nicholls

The Systems View of Life
Fritjof Capra

Original Thinking: Recovering the Full Continuum of Consciousness
Glenn Aparicio Parry

Streams Touching Consciousness
Katja Pettinen

MINDFULNESS

Humanity's Capacity to Share a Commonsense
Sperry Andrews

And Now for Your Moment of Zen
Rodney Ferguson

**Transcultural Perspective on Consciousness: a bridge between Anthropology,
Medicine and Physics**
Tania Re

On the Nature of Quantum Dynamic Variables

James R Johnston

jimjohnston@orion-research.net

This is an elementary, non-relativistic, re-viewing of quantum dynamics, based only on the quantum wave-like nature of the canonically conjugate dynamic variables, and the discrete nature of quantum detections. From this, it becomes clear that Bohr's concepts of "wave-particle duality" and "complementarity", in the common lore of quantum physics, are inconsistent with the foundation of quantum dynamics. (The classical nature of our experience does not conflict with the wave-like nature quantum physics.) Language issues (conflation of multiple connotations of the word "particle", in particular) have contributed strongly to the perspectives challenged here. Only situations in which there is a one-to-one relationship between quantum detection (e.g., with photodetectors, Geiger counters, etc.), and classical experience of it, are considered. (Classical pointers, and cats, etc., are more complex situations, extensions of what is considered here.) Bohr's succinct description of "the quantum postulate" is the foundation of this perspective. It defines canonically conjugate dynamic variables that are inescapably Fourier transform pairs; and two kinds of change: 1) discrete quantum exchanges in measurement events, and 2) continuous wavelike evolution between measurement events; both, in a piece-wise continuous process. (The quantum commutation rules, and the corresponding indeterminacy relations, are a direct consequence of the mathematical Fourier relationship.) Bohr's concepts of "wave-particle-duality" and "complementarity" are inconsistent with the quantum postulate. ("Complementarity" is based on the introduction of classical concepts supposedly relevant to our experience, e.g., particle-likeness of classical canonical variables, but contrary to the quantum postulate that describes quantum variables). These early statements of Bohr involve a mixture of classical and quantum perspectives that is misleading. Quantum dynamics is a foundation; classical dynamics is an approximation suited to every-day experience. Linguistic errors: conflation of various meanings of "particle" (here, point-particle and quantum exchange), is largely responsible for the perspectives criticized here. Examples include Albert Einstein's and Richard Feynman's. perspectives of point-particle photons, leading to the mistaken belief that they are a fundamental aspect of quantum reality. John Wheeler's perspective "*No phenomenon is a phenomenon until it is an observed phenomenon*", led to his recommendation of "delayed choice" experiments. Helmut, et al., performed such an experiment, and got the results predicted by quantum theory. They reported a statement of Wheeler's: *it was just "bad use of language" which got us in the dilemma of deciding whether the photon "shall have come by one route, or by both routes" after it "already has done its travel."* Thus, wave-likeness and discrete (erroneously-called "particle-like") detections are present in a single experiment. Two-laser interference, delayed choice, photon beam-splitting and photon beam-splitting-plus-interferometry experiments are described in support of this perspective.

The Shortest Possible Overview Tying Everything Together

Shiva Meucci

bmeucci@gmail.com

All ancient knowledge from the Sumerians on, is diffused and confused retelling of the physics of the duality of the spirit world and the physical world. It is aether technology. This includes all the esoteric traditions including alchemy, astrology, sacred geometry (and music) all of which gave birth to modern science. The mystery religions, cults, secret societies of magicians etc, were dualistic scientists and mathematicians. The aether (akasha) is a real substance which is both a data-storage and processing system as well as the basis for all matter and phenomenon. It is a system in which matter is the negative or white-space. It is a special case of fluid dynamics upon which most modern science is still based. In the 19th century, all modern physics relied upon it including Maxwell's Equations and the Lorentz Transform which together make up the vast majority of Relativity theory. Tesla, the primary contributor to modern technological age, mocked the anti-aether sentiment of Einstein and based all of his technological breakthroughs upon manipulation of a fluid medium via resonance. The aether is the spirit world and is like a computer system in which matter is the major processing point. This is to say that any configuration of objects can store data and the very ocean itself is a data system with storage and processing. In this metaphor aether is the ocean while matter would be a little like eddies, currents and whirlpools. Galaxies are the turn around points of major oceanic currents. (Unfortunately this metaphor of fluid dynamics and data processing is often only well understood by programmers like myself but I'm sure your knowledge of the antikythera mechanism familiarizes you with physical computation). Just as a river only exists as a combination of both the water and a depression in the rock and does not "exist" as only water on a floodplain nor as a dry depression in rock, "the rock moves the river and the river moves the rock" This yin-yang feedback loop is the nature of all of reality and the direct relationship of the aether-spirit world and the physical one. A river is a sum greater than the parts and our reality as we perceive it is a sum that is greater than its parts as well. Long ago [man] recognized that all perceptible matter comes from a primary substance, or tenuity beyond conception, filling all space, the Akasha or luminiferous ether, which is acted upon by the life giving Prana or creative force, calling into existence, in never ending cycles all things and phenomena. The primary substance, thrown into infinitesimal whirls of prodigious velocity, becomes gross matter; the force subsiding, the motion ceases and matter disappears, reverting to the primary substance. -Nikola Tesla (who studied with swami Vivikananda)

A Dream Series: The Entangled Nature of Fragmentation, Undivided Wholeness and the Collective Unconscious

Judy B. Gardiner

jbgardiner@aol.com

Based on an experiential dream series this consciousness study shaped a theory that the

fragmentary nature of dreams seeks wholeness deriving from the Collective Unconscious. As we shift into a higher consciousness transitioning from concern for survival of self to survival of the species, the series points to the dream's ability to recognize the distinguishing features of our individual and collective destinies. Consequently, the term "cosmic dreaming" was born. According to Jung, a relative degree of certainty is reached only in the interpretation of a series of dreams in that the basic themes are better recognized than in an individual dream. Cosmic dreaming demonstrates that repetition and connectivity of dream images and themes conceived in a timeless realm are such that if entangled in a quantum system, they remain connected. Like the Roman God, Janus with his dual faced image, our dreams can look both backward and forward simultaneously, time past and time future. This bidirectional potential tells us that dreams can reach a broader domain. In a thematic narrative four historical figures of science came to inform this experience by unifying science and spirit while teaching the syntax of dreaming. Issued in a life-saving message to humankind they detailed a collective warning of environmental and ecologic disaster. Populating the author's dreams for two decades with scientific jargon unfamiliar to her, they mentored her in a range of disciplines including optics, astronomy, geology, chemistry, neuroscience, etc. Subsequent research validated the material. A PowerPoint presentation examines the decoding of dream-encrypted metaphors and the dual unfolding of dreaming-waking consciousness. Included are key features of David Bohm's quantum theory analogous to the nature of dreaming consciousness. Word entanglement and paranormal effects interweave as seemingly random fragments merge to reveal a holographic framework. Dream fragments when stored in visual memory demonstrate through a process of association recognition how a web of interrelated associations is formed. This calls attention to word entanglement and quantum cognition. Clues and codes obscured in dream semantics may reveal a universal language system displayed in quantum fragments. Possibly governed by the presence of a higher intelligence represented by four immortal giants of science, the transmissions were neither concrete nor abstract but of a quantum world bearing the imprint of infinity. The depth, detail and frequency of the communications increased exponentially as the capacity to see across time expanded. There is reason to consider this potential inherent in all of us. As our global equilibrium is increasingly threatened, the study suggests that cosmic dreaming may have neurophysiologic implications that we are developing psychic capabilities that respond to these threats. In closing, this model has reflected the existence of the Collective Unconscious made conscious providing an experiential foundation for scientific inquiry.

Beyond Conception: Ontic Reality, Pure Consciousness and Matter

Leanne Whitney

august-moon@sbcglobal.net

Our current scientific exploration of reality oftentimes appears focused on epistemic states and empiric results at the expense of ontological concerns. A scientific approach without explicit ontological arguments cannot be deemed rational however, as our very Being can never be excluded from the equation. Furthermore, if, as many nondual philosophies contend, subject/object learning is to no avail in the attainment of

knowledge of ontic reality, empiric science will forever bear out that limitation. How are we, then, to integrate contemporary science within a holistic picture of our Being in this world? Putting Jung's depth psychology in dialogue with Patañjali's yoga philosophy, and attempting to form a bridge, can explore such an endeavor. Jung, a self-proclaimed empiricist, resisted all metaphysical and ontological claims. Nevertheless his depth psychology hypothesized an unconscious agent, which we can never know directly. His ideas on individuation, or the transformation of human consciousness, are built upon this theory. As a means of healing he implores us to loosen our resistance to the unconscious, yet the ego and the conscious/unconscious distinction forever remain in his worldview. Although not explicit in his theories, both the ego and the unconscious are more than psychological concepts for Jung; they are ontically real. For Patañjali pure consciousness, *purusa*, is the ontic reality, self-illuminating, singular, eternal, and absolute. There is no unconscious in his model and the ego is a concept that can be totally deconstructed. In Patañjali's *Yoga Sūtras* the core message of discriminating pure consciousness from the contents of consciousness in order to know ontic reality is driven home. There is no alternative. This discrimination facilitates the embodiment of *kaivalyam*, one's onliness, or nonduality, which is frequently referred to as liberation. Jung ultimately dismissed liberatory psychologies like Patañjali's as Indian intuition overreaching itself. This may have been due, in large measure, because of the epistemic constraints of the empiric science to which Jung adhered. Furthermore, Patañjali employs the dualistic metaphysics of Samkhya; leaving many, including Jung, to critically view Patanjali's methods as resulting in *purusa*, pure consciousness, having no relationship to *prakriti*, nature, or matter. In the monistic tradition of Vedānta, which Patañjali's vision can be understood to be in alignment with, consciousness is all there is. Once yogic experience, *prajñā*, informs our worldview, phenomena in Patañjali's model can then be seen as phenomenal consciousness. Pure consciousness is understood as our very Being. With knowledge inherent in pure consciousness, ontology outweighs epistemology.

Jung coined the term synchronicity and pioneered research, alongside Wolfgang Pauli, into the hypothesis that mind and matter are two aspects of one underlying ontic whole. Although Jung never proved empiric consciousness to be a unity, his legacy aims in that direction. It is through Jung's synchronicity hypothesis where we may be able to forge a bridge between depth psychology and yoga. This bridge allows a contemporary argument for an understanding of the ontic reality of pure consciousness, and subsequently the discrimination between things as they are and things as they appear.

Quantum Logic is Primary in the Natural World

Cynthia Sue Larson

Cynthia@RealityShifters.com

This paper presents evidence from the fields of cognitive science and quantum information theory suggesting quantum theory to be the dominant fundamental logic in the natural world. A summary of the evolution of quantum logic and quantum theory is presented, exploring the necessity of incomplete quantum knowledge and advantages of adopting a psi-epistemic quantum information theory perspective. A case for classical

logic existing as a subset of quantum logic is made based on quantum theory being consistent with the notion of entanglement while classical probability theory is not, and further strengthened by consideration of elements of quantum physics that can never admit a classical understanding. Specifically, three fundamental aspects of quantum physics cannot logically fit within classical constructs including: Bell's theorem—showing that no physical theory of local hidden variables can ever reproduce all the predictions of quantum mechanics, Hardy's theorem—showing that even finite dimensional quantum systems must contain an infinite amount of information, and the Pusey-Barrett-Rudolph theorem—indicating that the wave function must be an objective property of an individual quantum system. In the cognitive sciences, recent research supports the primacy of quantum logic in human reasoning as seen in studies of: the subconscious, decisions involving unknown interconnected variables, memory, and question sequencing. Much of human cognition appears to operate on a largely unconscious level, providing evidence that there exists a 'quantum logic of down below.' Human decisions in games, such as the Prisoner's Dilemma, better match quantum than classical logic. Human memory appears to operate through quantum information retrieval, and people respond to survey question sequencing according to quantum probability theory, providing a simple account for surprising regularity regarding measurement order effects.

Science, Religion and Real Life

Julia Bystrova

julfire@yahoo.com

The relationship between science and religion is a messy thing. In this discussion, I will not try to impose contrived boundaries where it is more important to understand the nature of the perspectives and how they relate to each other. In this discussion, I invite you to take a journey with me in discovery, where we listen to what both realms have to say and search for a common language that can lead to not only a more congenial dialogue but to something that may be considered an even greater, if not surprising, prize; a picture of the nature of reality in its most fundamental dynamic. Science, religion and spirituality together in dialogue can lead to a *transdisciplinary* perspective that is vital and necessary to this end. But this is not an integration nor a co-opting of one discipline for the agenda of another. Science and the spiritual sensibilities that are contained within religion must be respected as unique perspectives. There has been much confusion on this matter, and many varieties of troubling conclusions within both realms. I will survey some of these, and some of the limitations that occur, particularly the well-argued assertion about the limitation of classical thinking in science, especially in quantum theory. Instead, I will offer that when respectfully in dialogue, an emergent perspective is produced. This I will articulate within a relational philosophy. Not an integration, *a relationship*. Taking this approach, I claim that we will find that only together will we ever discover the most fundamental nature of reality and build a balanced, holistic, practical view for the world.

Consideration of the Nature of Reality from Perspectives of Kashmir Shaivism and Quantum Mechanics

Maria Syldona

maria@mariasyldona.com

Inclusion of mind and consciousness in QM, coupled with extensive and intensive mathematical exploration, appears to have created a field of endeavor wherein the deeper or more complex the nature of its inquiry, the more mysterious – rather than clear – the nature of the universe becomes. That in itself is a mystery, perhaps waiting for a comprehensive ‘theory of everything’ to bring the quest for ultimate knowledge about the nature of reality to definitive completion. While the ancient Eastern wisdom tradition of Kashmir Shaivism comes from a world-view apparently opposite to that of quantum physics, closer analysis reveals similarities as well as differences. However, even inherent in the differences may paradoxically be explanations for peculiarities intrinsic to the nature of a seemingly growing number of QM’s notions about reality. Taking another perspective, some of the more contemporary scientific discoveries may help to clarify scientific ideas expressed in ancient wisdom traditions, which are difficult to identify as such ideas, because of aspects of the language or symbolism with which they were expressed. Synergistic integration, or at the very least, mutual open-mindedness, could ultimately result in important advances in understanding the nature of reality. Some ancient wisdom traditions, such as Kashmir Shaivism, teach practices designed for human development and for discovering the truth about one’s own nature, which involve an intense effort to solely and keenly focus on the external world, while maintaining an awareness of one’s own internality, or inner reality. Therefore, it follows that the more we explore the external world – as through QM – the more we can come to know our own internality. And the more we focus on this internality, the closer we come to not only discovering the truth about the universe, but to also discovering what we authentically are. Each of us, and the entirety of the universe, then, is inextricably linked. In Kashmir Shaivism, this connection is described to be so profound as to be an actual ‘identity’ – we are one and the same thing. This notion implies that experience, livingness and dynamism are fundamental to both the nature of the universe and the nature of a human being. Philosophy, perspective and perception are all of profound importance in Kashmir Shaivism with respect to the nature of the manifestation of reality – the observer’s world. A focus on these three areas will highlight Kashmir Shaivism’s unique perspective, while illustrating how each comes into play in this manifestation process. Possible parallels with, or extensions to, QM will also be considered. The nature and role of perception will be treated in some depth. In Kashmir Shaivism it is considered the key, both to the understanding and manifestation of reality, and to the realization of humankind’s own true nature. Parallels will be illustrated with QM regarding such notions as superposition and collapse of the waveform in the process of perception, which makes the manifestation of reality possible. The final segment of the presentation includes a brief and basic participatory experiential demonstration of the processes involved in perception, per Kashmir Shaivism.

The Three Agent Theory Explains Religion, Spirituality and Enlightenment

Frank Heile
fbh1949@gmail.com

According to the widely accepted psychological dual process theory, there are two agents in the human brain: System 1, the fast, instinctive and emotional process; and System 2, the slower, more deliberative and more logical process. Consider the hypothesis that these two agents result in two separate conscious entities in the human brain: the Primary Consciousness (PC) and the Language Consciousness (LC) respectively. This hypothesis explains the origin of spirituality (and religion) and how spiritual practices provide benefit to a modern human by unifying these consciousness entities. The origin of religion and spirituality was caused by the development of the LC about 50K to 100K years ago. When the LC was coming into existence, it became aware of a much stronger agent or consciousness (the PC) which had a lot of control over the life of the LC. The LC identified this more powerful agent as a "god" and itself as "man". This initial simple language model of the world eventually resulted in the development of religions; and the problems caused by identifying man as the LC resulted in the development of spiritual practices. Evidence will be presented to show how the identification with the LC is the cause of many of the difficulties modern human beings have with living a happy and fulfilling life. Spiritual practices will be examined as cures for these problems since spiritual practices can result in a self-identity shift from the LC to the PC. Guided by the brain's overall neuroanatomy, this theory postulates three agents in the human brain: the Talker (the output agent of the LC in the frontal lobes); the Doer (the motor agent of the PC also in the frontal lobes); and the Experiencer (the agent who constructs the unified model of the world, the body and the self from the senses and from language). The Experiencer is located in the parietal, temporal and occipital lobes which together contain 60% of the cortex. These three lobes contain all the primary sensory areas, association areas and the areas of the brain which understand language and store semantic knowledge. By default, modern humans identify who they are as the Talker - this is the ordinary, unenlightened state. The first level of enlightenment or spiritual awakening is when we realize we are really the Doer; and we only use the Talker as a tool when appropriate. The final, fully nondual level of enlightenment is when we realize we are really the Experiencer. Besides being nondual, this state can also result in a loss of a sense of agency. The various kinds of spiritual practices utilized to become enlightened will be understood and explained in terms of this theory.

Biosemiotics and the Circle of Explanation in the Sciences

Seán Ó Nualláin

president@universityofireland.com

Ontological discontinuities have logical and computational consequences. Physics with constraints begets chemistry; naïve nanotechnology chose to ignore the effects of numerical constraints in orbitals on the type of molecules that can be created. On entering the biological realm, these numerical constraints begin to transform into syntax and semantics. Such projects as the HGP and GWAS have plateaued after ignoring these constraints, best handled in new subjects like biosemiotics. In this paper, a new way of

parsing nature, one that starts from the fact of ontological distinctions, is proposed. Two foci are later identified; the bridge subject of biosemiotics and the quantum mind hypothesis. The latter is seen as another bridge, this time from the academy to the real world in which we are objects as much as subjects

Could an Additional Subjective Dimension of Time Provide a Meta-Perspective for Bridging Science and Experience?

Jonathan W Schooler
schooler@psych.ucsb.edu

In this talk I use the thesis that perspective shifting can fundamentally alter how we evaluate evidence as the backdrop for exploring the perennial challenge of bridging the divide between the subjective first-person perspective of experience, and the objective third-person perspective of science. I begin by suggesting that reversible images provide a metaphor for conceptualizing how the very same situation can be understood from two very different perspectives that appear to produce seemingly irreconcilable accounts of their contents. However, when one recognizes that both views are different vantages on some deeper structure, a meta-perspective can emerge that potentially offers a vantage by which the opposing perspectives can be reconciled. Building on this notion of a meta-perspective, I argue that there are certain aspects of first-person experience that are so fundamental that they may reasonably serve as axioms of existence that any construal of physical reality must be able to accommodate. It is clear that many aspects of experience may be illusory but several can reasonably be construed as unassailable, including: the occurrence of experience, the flow of time and the privileged present. Notably, current accounts of physical reality offer no way of accommodating these inherent aspects of first-person experience. This conflict between seemingly self-evident aspects of personal experience and current accounts of physical reality leads me to posit that, like the reversible images that can only be accommodated by recognizing a larger meta-perspective in which they both reside, so too there must exist some meta-perspective that can accommodate both objective scientific facts and personally experienced ones. Towards this end I introduce a highly speculative conjecture about the larger framework in which both objective and subjective perspectives might reside. Namely that consciousness involves a fundamental aspect of the universe that arises via the changing informational states associated with an observer's movement through objective time relative to a currently unacknowledged dimension or dimensions of subjective time. In other words, if we accept the block universe model of reality, then in order to move through objective time, we have to move relative to something, and that something cannot itself be time because all time exists simultaneously in the block universe. A seemingly reasonable solution is to posit an additional dimension (or dimensions) of time. Although the postulation of additional dimensions of reality should not be taken lightly, it is not without precedent. In physics, string theory has postulated seven additional spatial dimensions beyond the three dimensions of space and one dimension of time that are customarily acknowledged. If there can be multiple dimensions of space, then might there not also be additional dimensions of time? Indeed, some physicists have argued that an additional dimension of time might

be very useful for conceptualizing various issues in physics (Bars et al. 1998). If the postulation of an additional dimension (or dimensions) of subjective time could also resolve the paradox of time and provide a realm for subjectivity, then surely that would also warrant its consideration as a possibility.

An Ethics Spontaneously Arising Within a Network of Relationships

Markate Daly

markatedaly@comcast.net

A moral system serves to coordinate the expectations of a society's members so that their exchanges and interactions are orderly. Which members form that system, decide what to include, how it will be enforced and to what ends makes for the great diversity of moral systems seen in the world. Not surprisingly, a morality set up by a ruling elite relies on the enforcement of moral rules and principles they have selected. And a moral system set up in a more egalitarian setting is based on trust among members of that society. Our European cultural heritage has given us a legalistic moral system of the first sort that continues to dominate in spite of our commitment to a democratic form of society. A trust-based moral system, however, is in everyday use in American society, and it is this system I will investigate. Rather than the language of right and wrong, good and evil, the language of "taking responsibility" is used in this ethics, as well as the charge of "irresponsibility." It can be heard in homes and schools, in business and corporate culture, and in government, medicine and the professions. When taking responsibility, an agent assumes the moral authority to use personal judgment in choosing what to do. How can this be justified? If individualism were a true picture of human nature, then altruism would be an inexplicable form of stupidity. It would be necessary to enforce a strict set of rules to reign in the urge to serve self-interest to the detriment of society and forestall the social chaos of each against all. In the last 5 years this view of human nature has been shown to be a fiction; humans are formed by and constituted by their social relationships. Each person lives and acts within a network of social connections through which they share to some extent cognitive and affective information, popularly known as having a theory of mind. It is through such an empathic connection that an agent acts for the good of another, understood in some degree as "we". This merging of self and other in a moral situation complicates the assignment of moral responsibility even while it facilitates the exercise of personal judgment through social resonance. I will offer a theory of a socially connected person and show how an interpersonal relationship contains within it a moral perception. Since this moral sense arises from the biosocial structure of a relationship, it shapes a person's moral psychology. But our psychology can mistake what is required in the situation. I offer as a test a wide interpretation of trust between all the stakeholders, which usually includes all of society. Since trust in this form of ethics guarantees social order, it legitimates its claim to moral authority as a biologically successful form of social organization.

The Biofield: Bridge between Mind and Body

Beverly Rubik
brubik@earthlink.net

In early Western science, all references to the soul or spirit were considered taboo and relegated to the Church. Later on, Western science discarded all ideas of a vital force, too, although it retained concepts of invisible physical forces in spite of frequent objection by strict empiricists. Yet the vital force or *élan vital* is central to virtually all indigenous knowledge and perennial wisdom throughout the world. It has often been considered to be the very quintessence of life. In recent decades a concept similar to the “vital force” has emerged at the frontiers of science, known as the biological field or “biofield”. The biofield hypothesis embraces a “field” view of life that may be considered complementary to the “particle” view, which has been the dominant biochemical paradigm since about 1950. The biochemical worldview maintains that life is composed of a hierarchy of organized biological substructures down to the level of the biomolecules and genes, which are considered to hold the blueprint for all proteins that make up our cells and tissues. The emerging biophysical paradigm proposes that the essence of life is like a flame, burning matter into energy, and dancing like a flame, coherent, yet somewhat chaotic. The biofield has been proposed as a super-regulator of the biochemistry and physiology of the body, coordinating all the functions of life. Mind is considered to be the “conductor” of the biofield, connecting the metaphysical realm to the physical body. Similarly, the basic premise in Oriental philosophy and medicine is that where mind goes, the *qi* (life energy) follows, and the blood follows the *qi*. The biofield is an invisible energy field of each organism proposed to hold the key to the invisible higher order of its being. Laboratory measurements using a variety of devices that measure various aspects of the biofield show that each person has a unique energy signature. For the human being, it extends from the body into the surrounding space and is thought to “entangle” each person with one another, the biosphere, and even the cosmos. The biofield may also draw on energy from the cosmos including the quantum plenum and transmute it to useful energy. Possibly this is the basis of miraculous feats that many believe have been performed by mystics and spiritual healers. In an optimal state of being, i.e., a healthy body in a loving state of gratitude and oneness with the greater whole, the biofield shows the greatest coherence in its dynamics and frequency components. When our state of being is less than optimal, the biofield shows a loss of coherence; and when we are sick, the biofield dynamics are stuck in a particular pattern and greatly constricted. When the flame of life sinks and finally goes out, the biofield disappears, too; no field can then be measured in death. The biofield is proposed to be key to understanding life’s integral wholeness and the interrelationship between the mind and body. It is also central to the development of an integrative medicine that treats the whole person, mind, body and spirit, and one that incorporates indigenous healing methods, many of which are presently considered alternative and/or complementary. Although Western science neglected the field concept of life for centuries, today many frontier scientists embrace it for its integrative and explanatory powers.

QEEG Studies of the Acute Effects of the Visionary Tryptamine DMT
Juan Acosta-Urquidi

jacostau@yahoo.com

Recent brain imaging studies in Psychedelic Brain Science are breaking new ground in our understanding of neurological substrate of biological consciousness in humans. The emerging field of inner experience and neuroscience is particularly well suited to the reexamination of the actions of psychedelics on subjective conscious experience. This approach is best understood as neurophenomenology. My work over the last few years has focused on the EEG correlates of the visionary tryptamine DMT action. I believe the researcher must also have the drug experience as part of the experimental protocol, in order to fully understand the richness of the phenomenon. The objective of this exploratory research was to examine the QEEG correlates of the psychoactive smoked inhalation of exogenous DMT action. Known as a potent visionary tryptamine, DMT is ubiquitous in nature and has also been localized in the brain and peripheral tissues of mammals, including humans. The exact function of this endogenous DMT is the subject of ongoing neuropharmacological research. Two sources of DMT were tested: high purity synthetic 5-MeO- DMT and N,N- DMT from a natural extract of the Acacia Mimosa hostilis root bark. The rapid onset (10-20 sec), short acting (5-15 min.), and the reversible nature of the effects made such a QEEG study feasible. DMT dosage was adjusted to elicit an effective “trip” (ca. 20-30 mg for N,N-DMT; 2-5 mg for 5-MeO-DMT). Healthy volunteers (age 25-60; N=15 men, N=8 women) were tested. A Mitsar 201 amplifier, 10-20 system electrocap, 19 channels referential linked ears montage, 0.5-40 Hz bandwidth was employed. Artifacts raw data was analysed with Neuroguide software (www.appliedneuroscience.com). Protocol consisted of: 5- 10 min. baseline control (resting eyes closed) was first obtained, followed by the DMT test condition, lasting 5-15 min. When subjects recovered, a report of their subjective experience was recorded on video and a post-DMT EEG reading was made at 10-20 min. A statistical comparison (paired t-tests, correlated samples) of absolute power values for all EEG bands between baseline vs. DMT tests and post recovery conditions was achieved for all subjects. The DMT- induced profound alterations in consciousness were tracked with the shifts in the QEEG metrics analysed. The time course and intensity of the subjective experience correlated with the magnitude of the observed QEEG effects. Results. A Statistical comparison of absolute power for all bands (mean +- SEM, P values two-tailed) yielded, for N,N-DMT: Delta (22.19 +-3.46 vs 18.48 +-3.6, N=18, N.S); Theta (17.97 +-3.54 vs 10.06 +-1.05 , P<.018, N=17); Alpha (133.65 +-27.06 vs 17.18 +-4.37, P<.0012, N=17); Beta1 (16.23+-4.16 vs 5.63+-1.9, P<.002, N=17); Beta2 (5.26+-0.66 vs 2.73 +- 0.4, P<.0001, N=16); Beta3 (2.63 +- 0.48 vs 2.21 +- 0.33, P<.013, N=6). For HighBeta increase (2.74+-0.8 vs 4.53+-1.13, P<.05, N=10). The most consistent effect was a robust suppression of Alpha, obtained for both N,N-DMT and 5-MeO-DMT (Alpha decreased ave. 72%, N=6). During recovery, some subjects showed Alpha rebound increased power at 15-25 min. post DMT (ave. 43% incr., P<.0107, N=9) . A DMT induced reversible shift in FFT spectra from Alpha to Theta was recorded in some subjects. Also, very significant hypercoherence in all bands (especially Beta) was measured in most subjects. Gamma power (35-40 Hz) was also increased in some subjects. During post DMT Alpha rebound, subjects reported “being in peace, a calmed state of wellbeing and clarity”. The significance of these findings is discussed with reference to DMT receptor pharmacology mechanisms and other recent psychedelic brain imaging studies.

Fractal Cognitive Triad: A Theoretical Connection between Subjective Experience and Neural Oscillations

Justin Riddle

riddler@berkeley.edu

It has long been appreciated that the brain is oscillatory¹. Early measurements of brain physiology yielded large waveforms which unify portions or even the entirety of the brain under rhythmic entrainment. Neural oscillations as a field is growing to encompass cognitive neuroscience and neuron electrophysiology. The traditional belief that oscillations are epiphenomenal of neuron spiking, which is the true currency of function in the brain, is being challenged by intracellular oscillations and the theoretical backing that oscillatory activity is fundamental to physics. This paper presents a theory of cognitive triadism, meaning there are three dominant modes of cognition: exogenous (awareness), endogenous (attention) and introspective (reasoning). The triad arises from the fractal nature of biological function and the necessary interaction between many scales of magnitude. In other words, the cognitive triad is found extending down into increasingly microscopic scales of biology. This leads to a panpsychist but interactive subjectivity fractal which includes the human mind at a specific oscillatory level.

“Non-Classical” Mind: Does it Exist?

Bob Petr

At the beginning of the modern age, Rene Descartes opened new horizons of the space and time by his discovery that spatial shapes and forms of bodies may be described using language of mathematics and defined “res extensa” as a main characteristic of the external world structured from material bodies. On the other hand he postulated that the human mind is a specific kind of “observing” existence that he called “res cogitans”, the Soul. More than three hundred of years later, Francis Crick described basic rules for the future science of consciousness. According to recent scientific research most likely there is not a specific place for the Soul in the brain and the unified scene of conscious awareness is related to information processing of various modalities and qualities in spatially distant parts of the brain. How these parallel distributed information processes in the brain are put together to create conscious experience is not known, which is called “binding problem” of consciousness. In his proposal, Crick also argued that the traditional “Cartesian” concept of the soul as a non-material being must be replaced by a scientific understanding of how the brain produces mind. On the other hand scientific research provides evidence that the opposite approach is also true and the mind may influence its brain, and produce measurable changes in the brain processes and also brain structural changes. This paradigmatic change suggests that the mind and brain may co-exist in two “distinct” worlds that in usual phenomenal observations cannot be reduced to each other, similarly as Descartes proposed. According to recent scientific evidence, the first world (“res extensa”) is composed from material bodies that create also brain and its structures. The second world (“res cogitans”) is characterized by the “observer” as the

basic existing non-physical entity that according to some interpretations of physical findings may “create” reality through the process of observation. In this process of observation the qualities of material bodies, which in the first world of “res extensa” seem to be stable structures of the space and time (as for example mass, length and time), are relative with respect to a specific state of the observer, whose measurements in different conditions provide different results about these fundamental characteristics of material bodies that are not objective and stable building elements creating the external material reality. Implications of these two scientific descriptions suggest that the universe appears to include paradoxical antinomies of dividedness and unity of the material particles and conscious observers. The first description implicates that the universe is composed from the smallest and objectively existing “indivisible” elementary particles, “basic units” that cannot be divided and create “unity”, even they represent ultimate possibility of dividedness. The second description implicates that there is “the abstract observer” that in its various states related to specific “conscious egos” and conditions during observation process creates multiplicity of “unitary scenes” in individual minds. In the sense as Schrodinger wrote: “Their multiplicity is only apparent, in truth there is only one Mind”.

Experimental Assessment of Telepathic Communication Wave Function Collapse

Karla M. Galdamez

galdamez.k.m@gmail.com

In the present work, John von Neumann's idea of measurement and observation through the problem of the photon-eye interaction is explored. The probability of wave function collapse as the photon enters the eye is investigated via density matrix formalism and non-linear Schrodinger equations. Experimental assessment consists of optical equipment currently built. This optical equipment has been elaborated and tested for the production of close to single photon stimulation per various integration times: 100 milli-second, 10 milli-second and 1 milli-second. Statistical analysis of close to single photon production will be presented with appropriate histogram data corresponding to each integration time along with further in depth analysis of equipment's capability. Reaction time and corresponding visual evoked potential are currently being investigated. However, current trial data shows that auditory responses present as a secondary event to photon production most likely overshadow visual evoked responses. A secondary waveform response to visual stimuli is being searched via frequency decomposition methods. These results will potentially aid ongoing theoretical analysis of the study of collapse associated to a conceptualized localized existence of von Neumann's 'cut'. The experimental equipment built consists of a silicon avalanche photodiode, a high power light emitting diode (LED) source centered at 530 nm, a set of single and multi-mode fibers, and an attenuator. Attenuator is built as an optical lens device containing two convex lenses for improved efficiency of source-to-output via optical fibers, and appropriate density filter for variations of input current. The system is driven by a high power, 1-channel LED driver with pulse modulation device. The desired result is achieved with close to single photon generation within the range of 35 % efficiency of photodiode along with production of pseudo random generation pulse output.

Review of the Compatibility of Physical Assumptions with the Foundations of Mind

Wolfgang Baer

wolf@NascentInc.com

All statements describing physical reality are derived through interpretation of measurement results that requires a theory of the measuring instruments used to make the measurements. The ultimate measuring instrument is our body which displays its measurement results in our mind. Since a physical theory of our mind-body is unknown, the correct interpretation of its measurement results is unknown. Therefore progress toward an acceptable theory of consciousness will depend upon the improved selection of the assumptions governing our body-mind system. The success of the physical sciences has led to a tendency to treat assumption in physics as indisputable facts. This tendency hampers the development of new theories capable of addressing the foundations of mind. I therefore propose set of questions intended to open the discussion designed to review our “truths”.

A) Quantum Mechanics

- 1) Is the particle-wave duality intrinsic to particles such as photons, or is it projected by the discrete states of our detectors?
- 2) Since Bell's theorem cannot be violated by recorded measurement results are such violations partial theoretical scaffolding that must cancel inside the quantum veil before observables are extracted from the theory?
- 3) Does the classic world result from collapse of the Wave function due to gravito-inertial interactions with the rest of the universe?
- 4) Does the Heisenberg uncertainty result from our lack of knowledge regarding the interactions between systems and the rest of the universe?

B) Gravity and Inertia

- 1) Do gravito-inertial influences propagate at the speed of light?
- 2) Do we live inside a black hole?
- 3) Does our universe end at our event horizon (3 degree Black body radiation).
- 4) Does Einstein's Special Relativity analysis imply an absolute background space associated with the mind in which such calculations are visualized?
- 5) Did Einstein take into account the consciousness mechanism of the observer riding along in his measurement frame?

C) Space Time Display

- 1) Is the association of time with a fourth dimension a property of our spatial display of change, or is time what clocks measure i.e. the name of the state of our reference system?
- 2) Is the future determined by the past or do signals propagate forward and backward in time, so that NOW states are determined by equilibrium between future and past influences not by the past alone?
- 3) Is space and time a phenomenological property of our display mechanism?

Agroecology Scaling Up for Food Sovereignty and Resiliency

Miguel A. Altieri

Agroeco3@berkeley.edu

C.I. Nicholls

nicholls@berkeley.edu

The Green Revolution not only failed to ensure safe and abundant food production for all people, but it was launched under the assumptions that abundant water and cheap energy to fuel modern agriculture would always be available and that climate would be stable and not change. In some of the major grain production areas the rate of increase in cereal yields is declining as actual crop yields approach a ceiling for maximal yield potential. Due to lack of ecological regulation mechanisms, monocultures are heavily dependent on pesticides. In the past 50 years the use of pesticides has increased dramatically worldwide and now amounts to some 2.6 million tons of pesticides per year with an annual value in the global market of more than US\$ 25 billion. Today there are about one billion hungry people in the planet, but hunger is caused by poverty and inequality, not scarcity due to lack of production. The world already produces enough food to feed nine to ten billion people, the population peak expected by 2050. There is no doubt that humanity needs an alternative agricultural development paradigm, one that encourages more ecologically, biodiverse, resilient, sustainable and socially just forms of agriculture. The basis for such new systems are the myriad of ecologically based agricultural styles developed by at least 75% of the 1.5 billion smallholders, family farmers and indigenous people on 350 million small farms which account for no less than 50% of the global agricultural output for domestic consumption.

The Systems View of Life: A Unified Conception of Mind, Matter, and Life

Fritjof Capra

www.fritjofcapra.net

Over the last thirty years, a new systemic understanding of life has emerged at the forefront of science. At the core of this new understanding we find a fundamental change of metaphors: from seeing the world as a machine to understanding it as a network. One of the most radical philosophical implications of the systems view of life is a new conception of mind and consciousness which, for the first time, overcomes the Cartesian division between mind and matter. Theories integrated into this new conception and discussed in this paper include those by Ilya Prigogine, Gregory Bateson, Humberto Maturana, Francisco Varela, and Antonio Damasio.

Original Thinking: Recovering the Full Continuum of Consciousness

Glenn Aparicio Parry

gparry@originalthinking.us

In many languages, the origin of thinking is thanking. Why is that? What is the nature of the relationship between thanking and thinking—and what would change if we were to think from a place of deep gratitude? Would all our thoughts then be prayers? Can we

relearn how to think—not from fear or lack—but from blessing and wholeness? Can we learn to think not only with our head, but with our heart? If so, we may remember what we once knew—how to be a human in connection with the whole of life. In this session, Parry introduces an alternative view of the origin of consciousness, as well as an alternative view of time and what it means to be human. He outlines why Western society shifted from a worldview of integral connection to one of imagined transcendence from nature, and why we are now returning to the view held by the ancient ones. Moreover, he shows how we can keep the best of modern rationality through revitalizing its living roots. The goal is to relearn how to think in both a wider and wiser consciousness.

Streams Touching Consciousness

Katja Pettinen, Mount Royal University
katja.pettinen@gmail.com

Myrdene Anderson, Purdue University
myanders@purdue.edu

In English, a prominent index of "consciousness" refers to it as the "quality of being aware". While earlier scholarly accounts of consciousness were centered upon an awareness of a self, such formulations turned out problematic, troubled in part by echoes of an homunculus, as well as distinct forms of Christian-based anthropocentrism. A contemporary approach to consciousness positions it toward more ecologically grounded processes emerging between an organism and the "significant surround" suturing it within an environment. This suggests the over-arching question about how organisms in general occupy their lifeworlds, or *Umwelten* following Jacob Von Uexküll, centering on what (and how and why) they are able to sense, perceive, even cognize in the case of our species, about such a world, inclusive aspects of the somatic self. The processes of sense-perception and cognition, amplified by emotion and memory, are somewhat distinct aspects (when so labeled, as in English) of the more general level phenomenon of consciousness. In this paper, we explore various tensions across neurological, evolutionary, and semiotic accounts of consciousness. Cognitive science has taken an increasingly neurological turn with newer technologies in the service of pinpointing processes in/of the brain/mind. These technologies, for instance ubiquitous brain-scanning techniques, even when layered or sequenced, can not be expected to discern all significant processes, and even could they, the concluding models would tend to localize presumed functions, ascertain sequence to impute causality, and reduce the fascinating, open, and expanding questions around consciousness to simpler, essentially non-problematic material processes with intended closures. A semiotic perspective can elucidate the inherently immaterial patterns evidencing consciousness. Semiotic and semiotic explorations of consciousness can relate the state/process to other labeled corporeal faculties such as senses, emotions, and also languaging, even when foregrounding the conventional human actor. More importantly, all these faculties, consciousness included, no longer appear to be fixed in either brain or body, but rather to self-organize within, between, and across brains and bodies, even when these are not conspecifics. Consciousness as an emergent phenomenal property of engagements about and without the body may not locate so neatly within the body, let alone the brain. Some

insights to such hypotheses arise from anomalies in contemporary brain-scans themselves, when these indicate brain processes *preceding* cognized decisions, on the one hand, and processes *lagging behind* externally visible evidence of emotions, on the other.

Humanity's Capacity to Share a Commonsense

Sperry Andrews

sperry@connectioninstitute.org

The following questions are only meant to suggest possible talking points: 1) Nature has not only invented us, it sustains and informs us. Some treat nature as if it were ignorant and unconscious, as if we alone are capable of understanding it. Perhaps we've been designed by nature to understand everything, including our "selves" and each other. Has nature designed us to survive the inherent insecurities of our ignorance and our hubris by sharing what has been called commonsense? And if so, how can we "awaken" as a species to cultivate a commonly-sensed consciousness? 2) For instance, can our decisions and actions cohere, and co-create, a world which works for everyone? 3) Are we each to en soul the universe? Is it enough to be individually conscious? Or, are we meant to develop a tele-somatic intelligence. 4) If we are to be conscious of being consciousness together, how many of us must understand this challenge and be motivated to respond to it? 5) If we can "wake up" via a more organized way of paying attention, as a collective, and access our combined intelligence, is it possible to look into the "mirror of our awareness," and find in our selves the receptivity and reflections, which may be "destined" to free us from this ignorance? 6) Are we interested, able both to ask and answer these questions, each in our own way, given our differing personal and cultural backgrounds? 7) Are we each uniquely called to his communion, to collaborate on bridging "the gaps" in our collective attention that separate us now?

And Now for Your Moment of Zen

Rodney Ferguson

rodthetrel@yahoo.com

This talk will explain the connection between Being and Happiness. It is my contention that the two are in fact one in the same. Being I define as all of existence as we know it and happiness is more than just the human emotion of feeling good; it is our knowing, in the deepest of senses, that we are connected with the universe. To put it more concisely, happiness is our connection with the universe. The big question is: Why is there something rather than nothing. My short answer is ... happiness. I think most would agree that some form of existence is better, for us, than nonexistence. Existence, or Being, may not make us happier, but I would argue that Being makes us happier than nonbeing. Happiness is more than just a human emotion. Happiness is the ultimate reason for everything we do. It ties us to the universe. When Hamlet asks, "To be or not to be," he is really asking whether or not he would be happier living or not. "Nobler in the mind"

means the better thing to do, not objectively, for there perhaps no such thing, but subjectively because that's the only thing we have access to. Happiness and Being have a profound philosophical, psychological and scientific connection; so much so, that one conflates into the other. The ultimate constituent of this universe is energy, from the Big Bang to the present. Happiness is the teleological reason for existence from the inescapable (for us) human perspective. From the detritus of the Big Bang life arose. According to Terrance Deacon, by recasting emergence theory in dynamical terms and focusing on the role of constraint in explaining ascending levels of causal relationships,...challenges as explaining the origins of life, the nature of information, and the dynamics of mental function need to be rethought. Though relying heavily on complex systems approaches, [he argues] that a higher order emergent dynamical approach is necessary, which he calls teleodynamics, "a form of dynamical organization exhibiting end-directedness and consequence-organized features that is constituted by the co-creation, complementary constraint, and reciprocal synergy of two or more strongly couple self-organizing processes." This "end-directedness" is, for me, happiness. I will discuss how we can, and to a large degree, some elite athletes can use this to their advantage.

Transcultural Perspective on Consciousness: a bridge between Anthropology, Medicine and Physics

Tania Re

tania.re77@gmail.com

The last 5-10 years have witnessed huge steps and the vast mobilization of multidisciplinary competences "toward a Science of Consciousness", as clearly illustrated in the recent international conference on that topic held in Stockholm under the patronage of the Center for Consciousness Studies of the University of Arizona and of the Perffjell Foundation, with the collaboration of the postdocs of the Karolinska Institute. At the same time that Science, and especially Medical Anthropology, Neuroscience and the Physics of Consciousness progresses, tools and new understanding have been developed that will allow for the transfer of much of that basic Science into clinical practice. This transfer doesn't only concern the clinical practice exclusively with mental disease but also the regular clinical practice where a person or a patient, using his, or her mind, can influence the progression of disease, becoming what one could rightly call a therapeutic partner. This is an old issue in different cultures that uses different "states of consciousness" to foster the healing process. The need to establish connections between Medicine, especially in the therapeutic aspect (healing), and all the information already obtained from the mind-matter phenomenology has led to much experimentation and theorizing in this border and transcultural area. During the symposium an interdisciplinary and international group formed by anthropologist who have studied altered states of consciousness in different cultures, medical doctors who uses states of consciousness to treat patients with the support of quantum physics and molecular biologists will try to define a transcultural perspective on consciousness merging anthropology, medicine and physics.