

Fourth Biennial SSE European Meeting

NH Hotel Center, Valencia, Spain

October 9-11, 1998

Program (Abstracts - see below)

Friday, October 9th

09:15 Announcements and Welcome

09:30 Christen A. Blom-Dahl: Precognitive Remote Perception and The Third Source Paradigm

10:20 Marco Bischof: The Fate and Future of Field Concepts: From Metaphysical Origins to Holistic Understanding in the Bio-Sciences

11:10 Break

11:45 Erling Strand: Project Hessdalen Automatic Measurement Station: The First Days of Running

12:20 Andrei Apostol: A Geophysical Anomaly: The Claim to Predict the Place and Time for a Great Earthquake

12:55 Adjourn (Lunch, 13:30, Work Meal, Nh Hotel)

15:00 Marcel Odier: Psycho-Physics: New Developments and New Links with Science

15:50 Bernhard Haisch: Manipulating The Vacuum to Modify Inertia and Gravity

16:25 Break

17:00 John Gruzelier: A Working Model of the Neurophysiology of Hypnosis

17:50 Naoko Maeda: Invitation to Precognitive Dreaming

18:25 Adjourn

19:00 Young Investigators Seminar

Saturday, October 10th

09:15 Dieter Vaitl: Anomalous Effects During Richard Wagner's Operas

10:05 Robert G. Jahn and Brenda J. Dunne: Two Decades of PEAR

10:40 Fotini Pallikari and Emil Boller: The Fractal Character of Pk-Rng Data

11:15 Break

11:45 Dick Bierman: Anomalous Aspects of Intuition

12:35 Deborah L. Delanoy: Anomalous Interpersonal Interactions: Intentionality and Psychophysiology

13:25 Adjourn (Lunch, 13:30, Work Meal, Nh Hotel)

15:00 Anne Dambricourt Malasse: New Views of Hominization

15:50 Christine Hardy: Semantic Fields and Mental Processes

16:25 Break

17:00 David Lorimer: Scientific Orthodoxy and the Challenge of Revolutionary Ideas

17:50 Ezio M. Insinna: Catalytic Signaling in Proteins: Ultimate Particles of Consciousness?

18:20 Adjourn

Sunday, October 11th

09:15 Harald C. Gaier: Sustainable Empirical Medicine within the European Union

10:05 Harald Walach: Magic Of Signs: A Nonlocal Interpretation of Homeopathy

10:55 Break

11:25 Vicente-Juan Ballester Olmos: (1) UFO Declassification: The Spanish Model (2) The Anomaly Foundation: A Novel Initiative for UFO Research

12:10 V. Milian, R. Ranchis, G. Verdu, J.L. Munoz-Cobo, G. Baeza, P. Kot: Anomalies In Radioactive Decay Rates and Temperature Measurements Inside A Modified Faraday Cage

12:45 Peter Fenwick: The Interconnectedness of Mind

13:35 Adjourn for travel to La Albufera,

14:30 Banquet

SSE Business Meeting: Scheduled as Needed.

Society for Scientific Exploration 4th Annual European Meeting Abstracts

Precognitive Remote Perception and The Third Source Paradigm

**Christen A. Blom-Dahl
Valencia, Spain**

I have mainly concentrated my research on the Swedish 18th century citizen, Emanuel Swedenborg, whose brilliant scientific career came to a sudden halt when a peculiar crisis turned him into a prophet and spirit-seer in 1744. Attempts have been made at defining his case as an instance of paranoia, paraphrenia, left hemisphere focal epilepsy, and so on. This was a line of diagnosis I fully shared until a startling discovery made me realize, in the spring of 1973, that the "wisdom from heaven" he had thenceforth penned down is, at any rate, TRUE wisdom however debatable its origin might be.

Ample and solid proof has been obtained, showing that whilst his scientific pre-crisis theories are trivial or erroneous, their post-crisis counterparts coincide prodigiously with present day's standards of knowledge. On closer examination of the ways and means through which he anticipated discoveries that were to take place two centuries later, the existence of a Source endowed with the sharpest rational powers has become a major corollary of my research. This is in crass confrontation with general observations so far, where the prevalence of ambience factors, aesthetic or non-analytical details, impressionistic material, and so on; or in other words, a greater involvement of the brain's limbic system rather than of its rational or cortical capacities, is generally being reported in modern precognitive perception experiments.

Just as the difference of 43 arcseconds perihelion precession of Mercury's orbit in relation to Newtonian mechanics turned out to be a cornerstone of the theory of general relativity, the rational element in Swedenborg's case may point towards some paradigm shift in current anomalous phenomena research, and suggest new ways of conducting experiments in this field.

The Fate and Future of Field Concepts: From Metaphysical Origins To Holistic Understanding In The Biosciences

Marco Bischof
International Institute of Biophysics, Neuss, Germany

Field and continuum theories probably are much older and have been more widespread in human history than particle / discrete theories. This is even more so, if we not only include theories of physical reality, but also field theories of consciousness and human constitution. A short outline will be given of how physical field theories, like all concepts of physics, have their origin in metaphysical concepts referring not only to physical reality separated from consciousness, but to a unified reality with multiple levels. Field and particle theories are rooted in complementary modes of human self- and world-experience, the latter in the compact and dense condition typical of modern Western man. In the present situation, the field approach certainly is more useful and necessary, as a complementary, unifying concept for the integration of our fragmented world-view and knowledge. In physics, the field concept has dominated many of the developments of this century, although it seems this has had a limited impact on other scientific disciplines and on general consciousness. In biology, field theories have played a central role up to the 1950's when they were eclipsed by the molecular approach still prevailing. Today, we observe a renewed interest in the field aspect of reality, not only in biology, but in many other fields. The development of electromagnetic theory and technology allows now to more clearly see the role e.m. fields play in living systems. Recent discoveries of field

effects in human interaction not ascribable to any of the known physical fields have raised the question if there may not be more fundamental fields of non-electromagnetic nature. Together with many other developments, this suggests the formulation of a unified field theory of consciousness, psychological states, and social interaction in terms of the human interaction with a fundamental, all-pervading field, which is here outlined. This field may not be observable itself, but various known and measurable effects may turn out to be manifestations of it. Such a theory may, more easily than conventional ones, bridge the present gap between physical/biological descriptions and psychological-subjective descriptions.

Project Hessdalen Automatic Measurement Station: The First Days of Running

Erling Strand
Oestfold College, Sharpsburg, Norway

The Hessdalen valley in Norway is a place with numerous UFO sightings. The biggest UFO-flap in that region lasted from the end of 1981 to 1984, with several sightings a week. Today there is on the order of 20 sightings a year. (JSE Vol.12 No.2 pp 193-195)

Project Hessdalen started in 1983 and two periods of field investigation were run, one in 1983 and one in 1984. The results from these were presented at the Second European SSE Meeting in Glasgow 1994, and can be found at: <http://www.hiof.no/crulp/prosjekter/hessdalen/html/engelsk/hrapp.html>

The Project Hessdalen team at Oestfold College in Norway have now developed an automatic measurement station. This station was described at the workshop at Pocantico Conference Center last autumn, and it was installed in Hessdalen the first week of August.

This first version of an automatic field station for detecting and recording UFO-phenomena consist of: One wide angle black and white CCD camera, which is connected to a video-recorder and a Silicon Graphics computer. This computer starts (and stops) a video-recorder whenever there is "something" in the view of the camera. The picture which triggers the event is also sent to Project Hessdalen website at once. The computer analyzes pictures continuously with approximately 1 second between each. The station has also an 3-axis flux-gate magnetometer connected to another computer. These data is also sent to the website.

The presentation will describe how the station works and discuss the problems and possible improvement of the station.

A Geophysical Anomaly: The Claim to Predict the Place and Time for A Great Earthquake

Andrei Apostol
Geophysicist Consultant, Elmhurst NY, USA

Great earthquakes are regarded as events larger than Richter magnitude of 7.75. They occur about every 1-3 years some place along the seismically active areas of the planet. The geophysical community today regards a deterministic earthquake prediction as an illusion. This is in part because deterministic predictions of great earthquakes have been performed in the past, but without practical success. The idea of a deterministic prediction is based on empirical observations that at a certain time a certain area is already "locked in" for failure. There exist data that will be presented indicating that such a "locked in" area is situated in Chile at latitude 31.5 south and longitude 71.3 west and the time for failure is November 1998-February 1999.

Psycho-Physics: New Developments and New Links with Science

Marcel Odier
Fondation Odier de Psycho-physique, Geneva, Switzerland

The Odier Foundation for Psycho-physics was set up in 1992 by Marcel and Monique Odier. Marcel Odier, who has a degree in physics and a Ph.D. in mathematics, did not believe much in parapsychology, whereas Monique Odier, who was a natural-science teacher and had spent 30 years in black Africa, had a more realistic approach to so-called supernatural phenomena. It was then decided to use modern technology, i.e. computers, to study this area which is contested by most scientists.

Our first experiments involved telepathy and clairvoyance. Two computers linked by a cable or telephone line recorded the results. Random numbers between 1 and 5 appeared on the screen of the main computer, and the percipient had to perceive the correct numbers and enter them on his computer. Over 26,000 telepathy and clairvoyance tests were carried out with a particularly gifted subject, Saha Ali Akbari. The results leave no doubt about the existence of these phenomena. But the surprising conclusion was that successful perception depended greatly on distance. This is the opposite to what most researchers have found. Meta-analysis shows that the results reflected mainly the percipient's confidence in his ability. In clairvoyance, many tests were carried out with the

main monitor turned off. The percipient had to guess numbers simply chosen at random by the computer. The results, which varied but were often significant, seem to indicate that clairvoyance may not imply viewing.

Dr. Peoc'h carried out numerous experiments for the Foundation with a TychoScope (a robot whose movements are determined by an RNG. He showed that animals can influence the TychoScope's movements. The results were published in full detail in Bulletins 2 and 3 of the Foundation. We then moved to plants, to test their possible ability to influence an RNG. The RNG regulated the frequency and amount of light the plants received. Out of around 60 experiments, 4 showed a very significant decline in the amount of light during flowering. In no case was there a substantial increase. A professor in plant biology informed us that flowering transforms plants and speeds up their aging process. Are plants trying, like human beings, to live longer?

At present, we have interesting contacts with some university departments. The Applied Physics Department in Geneva University is preparing an experiment thought up by our physicist colleague Dr. Suarez, in order to test some interpretations of quantum theory. This experiment could perhaps determine whether or not the transmission of information requires a form of energy, an area of particular interest to us. Furthermore, we have an agreement with the Lausanne University Hospital, which has a new 64-sensor Neuroscan , to examine the functioning of ESP subjects' brains. If the results show a distinctive functioning for these subjects, and the first ones are encouraging, it would provide additional proof that phenomena rejected by science at present do exist.

Manipulating The Vacuum To Modify Inertia and Gravity

Bernhard Haisch
Solar and Astrophysics Laboratory
Lockheed Martin, Palo Alto CA, USA

Among future possibilities discussed at two recent NASA advanced concept workshops were: energy extraction from the vacuum, force generation from the zero-point field as a basis for propulsion, and inertia and gravity modification. How solid is the basis for such ideas? A new theory has been published showing that Newton's equation of motion, $F=ma$ (or its four-vector covariant equivalent), heretofore regarded as an axiom of physics, can be derived from Maxwell's equations as applied to the zero-point field of the quantum vacuum. If correct, the inertia of matter is an electromagnetic phenomenon implying that it may be susceptible to manipulation and modification. The principle of equivalence implies that gravitation would then have a similar electromagnetic basis, an idea implicit in a 1968 conjecture by Sakharov. Some seemingly impossible concepts are beginning to

look theoretically possible at least in principle.

A Working Model of The Neurophysiology of Hypnosis

John Gruzelier

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Imperial College School of Medicine, London, UK**

Neuropsychophysiological evidence is reviewed testing a three-stage, top down working model of the traditional hypnotic relaxation induction involving: 1) a thalamocortical attentional network engaging a left frontolimbic focussed attention control system underpinning sensory fixation and concentration on the induction; 2) instatement of frontolimbic inhibitory systems through suggestions of tiredness at fixation and relaxation whereby anterior executive functions are suspended and directed by the induction; 3) engagement of right-sided temporoposterior functions through passive imagery and dreaming. A selectivity of action in high susceptibles was a hallmark of the studies. Increased Stroop interference coincided with maintenance of error detection and abolition of error evaluation potentials, interpreted as dissociation of cognitive and affective executive systems of the anterior cingulate. Verbal, category and design fluency tasks were dissociated with hypnosis centering on left anterior processes as seen in left lateral and medial reduced EEG connectivity. Limbic modulated electrodermal orienting responses and frontal modulated mismatch negativity waves were inhibited. Asymmetries in electrodermal and electrocortical responses to tones shifted to favour the right hemisphere, an asymmetry also seen in visual sensitivity. Haptic processing and visual sensitivity disclosed more distributed changes in medium susceptibles, while low susceptibles were characterized by poorer attentional functions at baseline and improvements through the induction.

Invitation to Precognitive Dreaming

**Naoko Maeda
Tokyo, Japan**

Accounts of acquiring knowledge of future events through dreams are found in religious traditions, legends, and folk tales as well as in contemporary dream literature. In 1995, I had my first precognitive dream, and it has led me to the study of dreams and anomalous cognition. My research and experience suggest that precognitive and other psychic dreams are not so rare and can be experienced if one is willing to pay more attention to dreams

and subsequent waking events. Although the frequency and clarity of precognitive dreams may not be great enough to convince the skeptic dreamer, identifying the signs and traces in a dream of a future waking experience will, in my opinion, provide a first step for "non-psychoic" individuals towards sensing a greater Universe not readily accessible through conventional human perception and available scientific instrumentation.

This paper will also outline my suggested instructions for inducing precognitive dreams. A comparison is made between precognitive dreams and remote perception.

Anomalous Effects During Richard Wagner's Operas

Dieter Vaitl

**Department of Clinical and Physiological Psychology
University of Giessen, Giessen, Germany**

Music evokes strong and subtle emotions in man. This is especially true for Richard Wagner's operas which are composed in a sophisticated way (tonal associative network or the "magic of relations") that fits uniquely the duration and the pattern of human responding to emotional material, as has been shown in previous psycho-physiological recordings during his operas in the festival theater at Bayreuth. The annual Wagner festival can also be viewed as a group ritual at a "sacred site" since it constitutes a pilgrimage by devotees to the "Festspielhaus", a theater designed by the composer for optimal resonance with his work. The exploratory Field REG applications reported here were designed to learn more about the circumstances that favor anomalous deviations of a random event generator (REG), as described by the PEAR group in numerous scientific publications. In 1996, 1997, and 1998 data were taken with the Field REG during the first cycle of the following Wagner operas performed at the Bayreuth festival theater: "Fliegender Hollaender", "Tristan & Isolde", "Meistersinger von Nuernberg", "Rheingold", "Walkuere", "Siegfried", Goetterdaemmerung", and "Parsifal". The features of the first cycle that foster a quasi-experimental repeated measurement design are the identity of time and place, of conductors and singers, and last but not least, of the majority of listeners, who are Wagner experts rather than novices. The separate acts of the operas were designated as the temporal segments for the experiment. The results reveal a marginally significant effect for the operas in 1996 (Chi-square 13.70, 7 df, P-value 0.057) and 1997 (Chi-square 27.88, 19 df, P-value 0.086). In 1998 the outcome was Chi-square 19.91, 16 df, P-value 0.224. Because the trends are consistent, a formal analysis combining data for 1996, 1997, and 1998, shows a significant effect (Chi-square 61.5, 42 df) with P-value 0.026.

The Bayreuth datasets are compared with Field REG applications by members of the

PEAR group during eight other operas and shows in New York City: "Brigadoon", "Seven Deadly Sins", "Carmina Burana", "Haensel and Gretel", "I Puritani", "Faust", "Hoffmanns Erzählungen", and "Russalka", revealing a non-significant overall effect (Chi-square 16.063, 16 df) with P-value 0.653.

An act-wise inspection of the Bayreuth datasets with the largest contributions to the Field REG deviations reveal a common feature indicating that resonance phenomena (e.g. during choir parts) and highly emotion-arousing scenes might have played a role. Although it seems premature, at present, to delineate an explanatory model from these data or to infer meaning from the direction of deviations, the results suggest, in a pragmatic sense, that the repeated application of the Field REG methodology under nearly identical circumstances, such as in operas, will allow the collection of data which may reveal, in the near future, components involved in man/machine interaction.

Two Decades of PEAR

Robert G. Jahn and Brenda J. Dunne Princeton Engineering Anomalies Research Princeton University, Princeton, NJ, USA

The Princeton Engineering Anomalies Research laboratory was established in 1979 to pursue critical study of the interaction of human consciousness with certain physical systems and processes related to contemporary information processing technologies, with particular attention to purported anomalies arising in such interactions. Over the ensuing twenty years, much empirical evidence has been accumulated and useful theoretical models have been posed that clarify the existence, character, scale, and salient correlates of these anomalous phenomena. Although the research methods employed have been rigorously scientific and the program agenda has remained focused solely on fundamental aspects, the laboratory staff has comprised an interdisciplinary ensemble of engineers, physicists, psychologists, and humanists, and broad collaborations have been maintained with other scholarly disciplines. While much remains to be learned, a number of essential features of this genre of consciousness-related physical anomalies can now be identified:

1. Anomalies in human/machine interactions can be objectively and replicably demonstrated using a broad range of simple devices that are driven by various random physical processes.
2. The primary evidence appears as shifts of the output distribution means of these devices from their chance expectations, in correlation with the pre-stated intentions of their human operators.
3. While the absolute scale of such effects is only of the order of a few parts in ten thousand, over the huge databases accumulated the departures from chance

expectation exceed seven sigma with a corresponding one-tailed chance probability below 10⁻¹².

4. Many other structural details of the machines' output distributions, such as their sequential patterns, individual count populations, and particular operator signatures, also depart from chance expectations.
5. The scale and character of these effects are remarkably insensitive to such objective physical parameters as the type of device employed, the sample size or rate of data acquisition, or the spatial or temporal separation of the operator from the machine, provided that the physical sources are truly random. Pseudorandom or other deterministic sources show no consciousness-related anomalous behavior.
6. The more significant correlates are found to be more subjective in character, as manifested in the pre-stated operator intentions, operator gender, personality and strategy, serial position effects, and bonded-couple performances.
7. Both experimentally and theoretically, the role of resonance between the operator and the machine appears to be crucial.
8. The validity of the human/machine results is reinforced by a large body of remote perception data showing similar scales and character of anomalous behavior.

Given the primary importance of subjective parameters in the establishment of these objective physical anomalies, along with the demonstrated disrespect of the results for intervening distance and time, it follows that no simple transposition of established physical formalisms will suffice to model the phenomena. Rather a much more sweeping revision of the scientific paradigm to accommodate subjectivity in some disciplined form will be required. Better empirical and theoretical definition of this "Science of the Subjective" is a major goal of the PEAR program for the future, along with several educational enterprises, and a selected spectrum of technical applications.

The Fractal Character of Pk-Rng Data

Fotini Pallikari

Physics Department, Athens University, Athens, Greece

&

Emil Boller

Institut fuer Grenzgebiete der Psychologie, Freiburg, Germany

Time sequences of a wide range of natural phenomena present strong correlations which are maintained even if the distance between events becomes very long. This observation

was the result of a statistical analysis of natural phenomena introduced by H. E. Hurst about fifty years ago. Some twenty years later B. B. Mandelbrot described this behavior of natural phenomena by the model of fractional Brownian motion, (fBm). In this model the correlations were classified into two categories: those of persistent biases and those of anti-persistent biases in the data. The cumulated deviations from the mean were shown in this way to possess a fractal character: the majority of natural phenomena behaved according to the persistent type of fBm.

In any successful PK-RNG experiment, according to the protocol adopted by the PEAR group at Princeton, the displayed cumulated deviation from the mean, exhibits that kind of persistence described by the fBm model. A project was funded by the IGPP Institute in Freiburg, Germany, to investigate the fractal nature of some sets of PK-RNG data, (a small part of a replication scheme of the PEAR experiments) under the Hurst analysis and the fBm model. The result of this analysis will be reported here.

There were 450,000 PK-RNG experimental data, 450,000 control data and 600,000 calibration data analyzed, in the form of numbers distributed about 100 with a standard deviation of about 7.07. The Hurst analysis was carried out on raw experimental, as well as reshuffled data. Additionally, the frequency distributions of sequence lengths of data, on the basis of which the reshuffling was done, were taken into account.

Irregularities and periodicities were found not only in most experimental data, but also in control and a small part of calibration data. An interpretation of the above findings will be attempted. To account for the result an alternative influence mind-machine model to that currently accepted, will be introduced.

Anomalous Aspects of Intuition

Dick Bierman
University of Amsterdam, The Netherlands

In cognitive psychology, intuitive decision processes are generally assumed to be driven by implicit knowledge and highly automatized search procedures. We have found evidence for a second, anomalous, process that may help people to make intuitive decisions.

In a number of double blind experiments we presented several pictures to subjects while measuring their electrodermal activity. The pictures are randomly selected from a pool of pictures with either calm or highly emotional content. The mean electrodermal activity preceding the emotional pictures is higher than the mean value preceding the calm

pictures, leading us to the conclusion that subjects appear to have a pre-sentiment of the future stimulus.

This conclusion is strengthened by secondary effects such as systematic differences in the autonomic response preceding erotic and violent pictures.

There is suggestive evidence that no such pre-sentiment occurs when the subjects do not experience conscious emotions following presentation of the stimulus. This is in line with recent main stream research findings that emotional processes do play a crucial role in intuitive decision making.

The findings are only anomalous if one assumes that the asymmetry in time that we experience in daily life is fundamental. This is not necessarily required in physics. Therefore the current findings may also be interpreted as indications for the fundamental time-symmetry in physics and hence would force us to label normal, asymmetric time flow as anomalous and find an explanation for normal time flow rather than for the 'acausal' presentiment effect.

Anomalous Interpersonal Interactions: Intentionality and Psychophysiology

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University of Edinburgh, Scotland &
Institut für Grenzgebiete der Psychologie und Psychohygiene (IGPP),
Germany

"Anomalous interpersonal interactions" refers to situations where there appear to be exchanges between two (or more) individuals which defy the current scientific understanding of how such acts may occur. Apparent instances of extrasensory perception (ESP), where one individual seems to be gaining information from another person under conditions which would normally preclude such exchanges, are a commonly reported category of anomalous interpersonal interactions. There is a large body of experimental work which supports the reality of ESP, under conditions where one person (a sender or agent) is intentionally attempting to convey information to another, sensorially isolated person (a receiver). One feature of the majority of such ESP work is that the receiver must consciously gain this information and register it under controlled circumstances, e.g., the receiver makes a verbal response, a drawing or some form of conscious choice regarding what the agent is sending to them.

One area of anomalous interpersonal interactions research which does not require a

conscious response on the part of the receiver is referred to as Direct Mental Interactions with Living Systems (DMILS). In DMILS research an agent attempts by means of mental intentionality to interact with a measured behavioral or psychophysiological response of the receiver, thereby circumventing the need for the receiver to cognitively process any information which may be coming from the agent. Professor William Braud and his colleagues at the Mind Science Foundation conducted a highly successful DMILS research program from the late 1970's to the early 1990's, which has set the standard for current DMILS work. This research, and more recent DMILS studies, have largely focused upon the responses of the receiver's electrodermal activity (EDA) to the remote intentions of the agent who is attempting to calm or activate EDA according to a random schedule.

A few parapsychological studies have examined whether anomalous interactions are better detected by autonomic psychophysiological responses or by conscious responses. For example, using DMILS procedures, Delanoy and Sah (1994) found that receivers were unable to consciously detect the remote agents' intentions, but that their EDA responses did so to a significant degree. This and similar studies suggest that psychophysiological responses are better detectors of an agent's intentionality than are conscious responses.

Currently DMILS research is becoming increasingly process-oriented. Recent successful DMILS studies from the University of Edinburgh and the IGPP have explored such issues as: the ability of the receiver to block the agent's intentions; the role of the relationship between the receiver and agent; the role of the agents' and receivers' self-rated volitional competence (i.e., their willpower) in DMILS situations; and exploration of psychophysiological measures other than EDA.

New Views of Hominization

Anne Dambricourt-Malassé
National Museum of Natural History, Paris, France

The origins of Homo sapiens are usually interpreted within the theoretical framework of neo-Darwinism, although the physical processes responsible for the cranio-facial architecture and the skeletal frame of primates are still unknown. The discovery in 1987 of an embryonic foundation for the mechanism inherent in cranial growth shows that the evolutionary process (in the physical sense) over a period of 60 million years is neither neo-Darwinist (random), nor chaotic (increasing unpredictability). The process recalls the dynamics of self-organizing systems but some conceptual difficulties arise during the transition between two embryonic growths. Homo Sapiens' adult architecture in its most sophisticated part shows that the base of the skull (from the bottom of the pharynx to the

face) results from an embryonic process that is observable between the 7th and the 8th week. Its deterministic character originates in neural growth, that is, a coiling of the embryonic brain that modifies the position in space of the supporting tissues. During ontogenesis the angles change in synchronous fashion in the cranial space: the equations describing cranial growth are therefore deterministic. On the threshold of change, the new values depend on previous values. Thus the behavior of the deterministic equations remains deterministic. The system is therefore conservative and not dissipative. On the threshold of stability, the system relapses into the attractor instead of chaotically bifurcating into an unpredictable attractor. This phase space, visible only over long time lapse, has been named a harmonic attractor. Although the hypothesis of self-organizing systems seems a priori to fit nicely to the question, it fails to distinguish between chaotic (dissipative) and harmonic behavior (iterative, integrative). The latter raise some questions as for the level of reality that should be taken into consideration in order to: 1. Know the nature of the process (quantum physics, wave-particle duality) and, 2. Understand its stable behavior over a period of 60 million years.

Semantic Fields and Mental Processes

Christine Hardy

**Laboratoire de Recherche sur les Interactions Psychophysiques
Morsang sur Orge, France**

Semantic Fields theory seeks to explain complex mental processes--such as creativity, free will, intuition and transpersonal phenomena--by viewing the mind as a network-system displaying dynamical properties. The theory is based on a merging of neural nets' capacity for learning, with dynamical systems' self-organization properties. The basic unit of the mind is the Semantic Constellation (SeCo), a network of linked elements ranging from high-level rational processes to low-level neural processes. The cognitive architecture is thus a transversal network-organization of SeCos within SeCos. A low-level connective dynamic, the spontaneous linkage process, creates chain-linkages between elements or SeCos. This induces divergence and bifurcations in the system, while SeCos, behaving as attractors, structure thought, trapping cognitive processes into weighted paths.

A complete cognitive theory, I believe, must also account for unmediated mind-world interactions. Unlike the cognitivist paradigm, that views all mental processes as purely internal operations, in the present theory mind and the world are both sets of complex, mutually influencing dynamical systems. I thus introduce two basic premises: (1) Both subjective and 'objective' reality are pervaded by a semantic dimension. The mind (the noo-field) is an organizing force that generates and influences external systems' eco-fields (their semantic organization); these, in turn, affect perception, hence noo-fields'

organization. (2) The semantic dimension is governed by parameters such as semantic proximity, recurrence and intensity, that are distinct from space-time parameters.

These premises constitute a framework for understanding psi phenomena. First, nonlocal interconnections between minds emerge from interface-SeCos--network-type links between individuals, based on semantic parameters; if reinforced, these SeCos act as bridges for telepathic or telempathic phenomena. Second, the co-creation of meaning within groups produces collective SeCos that link the concerned individuals and allow for nonlocal exchanges between them; an example of this is the occurrence of synchronous discoveries. Finally, insofar as the theory posits a constant interaction between mind and environment through the semantic dimension, matter is continuously organized by the semantic activities of persons' noo-fields. Macro-psychokinesis is thus an unusually strong manifestation of a more constant underlying dynamic. At a more subtle level, event probabilities are slightly but continuously modified by individuals' semantic configurations.

Scientific Orthodoxy and The Challenge of Revolutionary Ideas

David Lorimer
The Scientific & Medical Network
Gibliston Mill, Scotland

Modern science is based on an unacknowledged metaphysic or paradigm consisting of frequently unquestioned assumptions: reductionism (methodological, epistemological and ontological), positivism, value neutrality and philosophical materialism. Definitions of reality, causality and the corresponding validity of explanations rest on such assumptions. These in turn are applied to assess evidence and the plausibility of new theories. The logical corollary of this process is scientism, the conviction that only material world is real and only physical causation is scientifically respectable. Where the anomalies of psi are concerned, scientism deems them a priori impossible: "it can't happen therefore -- it didn't". It hardly needs arguing that such an attitude is dogmatic and unscientific. It is nevertheless understandable when one considers science as a social community and career structure. The emerging science of consciousness, which includes psi research, needs to become more aware of its philosophical presuppositions and these in turn may need to be revised if good evidence suggests that a broader view is necessary. It also includes the subjectivity of the scientist in an unprecedented fashion and leads to an expanded view of the nature of the human being and life itself.

Catalytic Signaling in Proteins: Ultimate Particles of Consciousness?

Ezio M. Insinna
Bioelectronics Research Association
Bussy Saint Georges, France

Consciousness (CS) is a specific attribute of animate matter. In order to understand its emergence in humans, the author proposes to investigate its basic premises at the molecular level and in unicellular organisms. As a matter of fact, understanding of CS cannot occur without a thorough consideration of its evolutionary, corporeal premises (1). The author starts by showing how spontaneous intramolecular oscillations resulting from protein folding at the tridimensional (tertiary) level might be the basic factors responsible for the catalytic properties of membrane transport proteins. He then suggests that similar oscillations propagate in the form of "catalytic" signals along filamentous proteins such as microtubules (MT). These signals are capable of synchronizing dynamic processes in biological cells thus resulting in a coherent behavior of living matter. The author considers this spontaneous catalytic signaling as an until now unrecognized dynamic property in proteins. He thus recants his previous theories involving signal transmission via charge transfer i.e. via energetic processes (2). In fact, these catalytic properties cannot be explained in terms of energy-consuming interactions. Further, he analyzes the molecular mechanism involved in the phototactic behavior of the flagellate Protozoan alga *Euglena gracilis*. In the latter, experiments can evidence the existence and necessity for such a signaling occurring inside its flagellum. The catalytic signaling capabilities of microtubules (MT), the filamentous proteins constituting *Euglena's* flagellum, are responsible for the coherent (intelligent) behavior of this microscopic organism. Modulation of this signaling by internal and external factors might explain the primary sensitive capabilities of living organisms (their ultimate corporeal consciousness). Confirmation of their existence would thus allow a deeper understanding of the evolutionary pathway leading from primitive forms of proprioception and kinesthetics of the animate to higher forms of CS.

Sustainable Empirical Medicine within The European Union

Harald C. Gaier
Director of Medical Research, The Hale Clinic
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Definitions:

[a] EMPIRICAL MEDICINE in this paper refers to the Empirical tradition in medicine. It relies on past experience as a guide to practice or to the therapeutic use of any skill or remedy; and it tries to avoid all extraneous speculation and abstract reasoning. Since its medical reasoning is based on experience, it flows from effects to causes, from practice to laws, etc. This process of "a posteriori" induction inevitably leads to the elevation of PROGNOSIS to the position of the primary determinant of therapeutics. Historically it has always occupied the probabilistic minority counter-position vis-a-vis the Rationalist tradition in medicine. By its adherents it is seen as scientific medicine.

[b] RATIONALIST MEDICINE in this paper refers to the Rationalist tradition in medicine. It derives its models for understanding disease and for determining therapy from systems, disciplines, sciences and paradigms outside of itself, even though these constantly change with time. Historically it has always represented the deterministic mainstream of Orthodox Medicine. Causal assumptions derived from elaborations in other sciences always become the "a priori" basis for the forming of the near-obligatory DIAGNOSIS of mainstream medicine; hence this deductive process, effectively, leads to the determining of its therapeutics. By its adherents this is seen as scientific medicine.

This paper attempts to show that the principal predetermining requirements for a sustainable long-term presence of Empirical Medicine within the EU are the following four:

1. Basic academic education in Empirical Medicine to become co-extensive with that offered for Rationalist Medicine.
2. To reduce disapprobation there needs to be a steadily increasing amount of evidence-based practice of Empirical Medicine, yet at the same time the non-curtailment of the freedom of innovation and experience-based developments that strongly characterize this form of medical practice needs to be assured.
3. The establishment of a statutory framework for full professional self-regulation with accountability to patients, the public, the scientific community, and to Governments is inescapable.
4. Real economic viability must be made a central objective for Empirical Medicine in order to compete with Rationalist Medicine which appears to be heading inexorably towards economic non-sustainability.

Magic of Signs: A Nonlocal Interpretation of Homoeopathy

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At present there is no accepted theory of how homeopathy could work. Some models exist, but they are altogether local in their interpretation of homeopathy. That is, they presuppose a kind of subtle carrier of structure -- water-clusters, changes in O-H-bridges, electromagnetic radiation -- which acts locally in a subtle causal chain. The difference from orthodox pharmacological models is only one of degrees. Instead of molecule-cell interaction, causal models of homeopathy propose an information-carrier-body-interaction, which nonetheless is causal and local. The purpose of this presentation is to present an alternative model, which is acausal and nonlocal, based on the general idea of synchronicity published by C.G. Jung in 1952, and to back it up by recent evidence from quantum mechanics.

There is some evidence which speaks against a causal and local interpretation of homeopathy: Some well conducted recent trials have failed to demonstrate superiority of homeopathy over placebo. Homeopathic remedy conditions generally produce symptoms thought specific for the remedy, also in placebo conditions. A large field experiment is examining the remedy Causticum. Practically no manufacturer produces the original Causticum but something else; yet it usually works well when administered in clinical practice according to homeopathic principles.

In a newly developed model, it is proposed to view homeopathic effects as nonlocal events, which are more akin to synchronistic, acausal effects than to causal ones. Jung's idea of synchronicity entails a nexus of meaning between causally non-related events. We know that quantum mechanics has demonstrated nature to be nonlocal on a very profound endo-level. Usually this nonlocality does not show on the exo-level of experimental observations, unless specific precautions are being taken. It could be the case, however, that under specific preconditions a generalization of Bell's theorem holds, which makes EPR-like entanglement plausible, irrespective of the size of the system involved.

UFO Declassification: The Spanish Model

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During the period from 1992 to 1998, all UFO records owned by the Spanish Air Force which had been withheld from public consultation were declassified. Documents formerly classified as secret are now part of the public domain: 83 files containing 2000 pages of text are available, which describe 122 different UFO events that occurred in the period 1962-1995.

The author's intervention proved instrumental in the generation of this historical

declassification process. A collaboration with the intelligence unit in charge allowed the author to stay close to the development of the process. From this unique position, I was able to (a) confirm that the full contents of the archives were released, (b) accelerate the speed of file processing at various times, (c) achieve the liberation of several confidential papers and protocols related to past military handling of UFO information, and (d) arrange that the Air Force conduct a search for missing UFO data. The latter occurred on three different occasions, giving rise to an improvement in the quantity and quality of the files. After a background introduction, the main highlight dates in the official UFO declassification process are reviewed, and the major achievements from the civilian cooperation are discussed. A basic statistical overview of released UFO sightings is presented.

The Anomaly Foundation: A Novel Initiative for UFO Research

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In January 1997, long-time Spanish UFO researchers associated with the respected journal Cuadernos de Ufologia (Ufology Papers) received approval from the Ministry of Education and Culture for their common UFO project: Fundacion Anomalia (Anomaly Foundation).

This is a not-for-profit organization for scientific scrutiny of UFO phenomena and related anomalies. No special hypotheses are supported; the scientific method, logic, common sense, rationality, and critical analysis are applied to UFO observations.

The Foundation sponsors grants and scholarships for research, and publishes technical reports and books as well as the foundation's journal, CdU. In addition, the Foundation manages and preserves archives, organizes symposia, and seeks to stimulate UFO study in the academic environment. All support comes from private donations by individuals and companies.

Anomalies in Radioactive Decay Rates and Temperature Measurements Inside A Modified Faraday Cage

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Wilhelm Reich developed a special enclosure, similar to a Faraday cage, which was capable of causing anomalies in response patterns of devices such as mercury thermometers and Geiger-Mueller (GM) counters. He concluded that vacuum was pervaded by an energy which could be concentrated by the cage. This energy could be altered with radioactive materials. We have also found anomalies in radioactive decay rates and temperature measurements taken inside a similar cage.

Four platinum electronic sensors (Pt-100), covered with different materials, yielded the same temperature readings outside the cage. But when placed together inside the cage, and after adding a small radioactive source, a difference in readings slowly appeared between them to a maximum of 1 degree C, therefore showing a change in their resistivity. The difference vanished slowly after removing the source. This was repeated three times. We also used two GM counters, GM1 and GM2, the applied tension to the tubes being 600 V. Two radioactive sources, namely Ra-226 (inside GM1) and Cs-137 (inside GM2), showed simultaneous decrease in cps of 1.2%, i.e., $c_1 = 0.44$ cps for radium and $c_2 = 3.35$ cps for cesium when placed inside the cage. Everything happened as if the applied tension had dropped by 30 V. This cannot be explained by the lowering of background counts caused by the metallic shielding of the enclosure walls. This phenomenon took place slowly.

Later, an additional unshielded uranium source was placed inside the enclosure for several days. After removing this last source, cps readings were different, as previously stated. They exceeded 0.7% in the case of radium, and 0.2% for cesium, compared with the values which were reached, slowly, many days later. This was repeated twice, yielding the same results.

The common factor which could justify the observed anomalies is the fluctuation in electrical fields involved in this processes.

The Interconnectedness of Mind

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Approximately 30% of the population has weak mystical experiences, and 10% have deep experiences when they see and feel a transcendent reality. This transcendent view reveals a world which is highly interconnected.

Frequently it is described as "order passing to order, complete and whole". It is not

unusual for the whole structure of the world to appear to be underpinned by love. This world view suggests the presence of a highly interconnected universe. Connectivity as shown by modern quantum mechanics also argues for a highly connected universe.

Recent scientific studies of prayer suggests that praying for others, either close by them, or at a distance, can produce a healing change. The evidence suggests that it is not necessary for the person who is being prayed for to know that this is happening, thus the act of praying accomplishes healing at a distance.

All methods of prayer require an attentional and directed component on the part of the prayer. The evidence suggests that praying in general (that what is best for that person should happen) is more effective than directed prayer (please make that person better). It would seem that the act of directed attention, and some form of emotional interconnectedness is required for prayer to be effective.

In a recent study, we attempted a replication of an experimental protocol which had been suggested by Jackobo Grinberg. In this protocol, it is possible to measure the transfer of auditory evoked response to tone pips from one person to another person in a different room, providing the two people involved in the experiment had come into emotional contact before they carried out the experiment. The replication that we carried out showed a significant evoked potential transfer between those who had been in emotional contact and no transfer potential in those who were strangers.

Recent evidence from France, using some highly innovative experiments, suggests that emotional involvement between animals can also lead to telepathic transfer, and, in special circumstances, psychokinetic effects.

These findings suggest that the world is highly interconnected, and that emotional involvement between people, or between people and things enhances the interconnectedness, and it is in these interconnected circumstances that telepathic communication is most easily seen.