

15th Annual Meeting

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Program (For Abstracts, See Below)

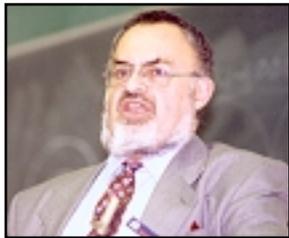
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Gender Differences in Human/Machine Anomalies, Brenda J. Dunne

Information, Consciousness, and Health, Robert G. Jahn

Silent Shockwaves: Evidence for Presentiment of Emotional Futures, Dean I. Radin

Experimenter Expectations and Distant Intentionality on Biological Systems, Marilyn Schlitz and Richard Wiseman

Accusers of Child Sexual Abuse Who Recanted, Harold Lief

Hypnosis and Delayed Recall, Fred H. Frankel

Physiological Parameters of the Relief of Pain with Hypnosis, Brian D. Kiernan, Joseph R. Dane, Lawrence H. Phillips, and Donald D. Price

Testing the Radial Appliance, Douglas Richards, David McMillin, Eric Mein, and Carl Nelson

A Three-Dimensional, Dynamic Geometric Pattern with Possible Psychological, Spiritual and Physical Implications, John L. Petersen

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Terminological Problems Related to Psi Healing, Savely L. Savva

Effects of Sympathetic Magic Healing Techniques on the Physiology of a Remote Person,
Jannine M. Rebman, Dean I. Radin, Russell A. Hapke and Kelly Gaughan

Christian Science — A Very Controversial Religion and Science, H. D. Froning, Jr.

Personality and Abilities of Children Claiming Previous Life Memories, Erlendur
Haraldsson

Is it Possible to Induce Protective Effects with Serial Agitated High Dilutions, Wayne B.
Jonas

Research in Acupuncture, Claire M. Cassidy

Microbial Mysteries: Rethinking Pleomorphism in Biology and Medicine, Beverly Rubik

Information and Sensory Perception, William D. Rowe

Investigation of an Alleged PK Superstar, Stephen E. Braude



Wishing for Good Weather: A Natural Experiment in Group Consciousness,
Roger D. Nelson

**Society for Scientific Exploration
15th Annual Meeting Abstracts**

Milky Way Model for the Nazca Figures

Phyllis Burton Pitluga
The Adler Planetarium, Chicago, IL

New field measurements and computer analysis link the gigantic ground drawings to the Andean tradition of dividing up space and time by cycles of the Milky Way. By including ethnoastronomy in the analysis, these conclusions differ from previous researchers. The first hypothesis tested was that the figures could be considered like labels to the lines. Of the twenty-seven figures, ten are birds, three are whales, and two are seaweed plants. Theodolite measurements revealed a non-random distribution of the directions of lines attached to look-alike figures. The second test showed a physical relationship of present-day Andean plant and animal figures imagined as silhouettes in dark spots along the Milky Way to figure-lines pointing to the rising and/or setting of the same Andean figure 2000 years ago. In the third test, all other lines extending to the desert horizon from a figure center keyed into dark spots and bright stars along the Milky Way at the same Local Sidereal Time in the same year. Finally, the directions of the long axis of each quadrangle related to the same sky in the same year at each site. Linking these findings with what is known about the Nazca culture, an agricultural-ceremonial model is presented describing how this site may have been used.

Do Certain Martian Surface Features Suggest an Extraterrestrial Hypothesis?

Mark J. Carlotto
5 Ryans Place, Beverly, MA 01915

Findings from a series of independent investigations are summarized and presented as evidence in support of the hypothesis that certain features on the Martian surface are artificial in origin. The discussion focuses on the Cydonia region in Mars' northern hemisphere. The features under investigation include a formation approximately 1 x 3 km in area that resembles a humanoid face staring up into space from the surface and a number of nearby objects. One set of objects located about 20 km southwest of the Face which has been termed the "City" contains several unusual structures comparable in size to the Face and a number of smaller structures which together with the larger objects in the

City appear to be arranged in an organized pattern. Several other geologically anomalous features in the area are also examined. Three types of evidence are presented which support the hypothesis that the objects in question are artificial. The first is based on a detailed examination of the objects themselves, the second concerns spatial and angular relationships between certain objects, and the third involves a comparative analysis of the shape and alignment of the Face and several objects in the City. Using a simple probability model and assuming the above sources of evidence are mutually independent we show that a body of evidence exists which supports the hypothesis that these objects are artificial. The alternative hypothesis, the objects are natural geological formations, is also considered. A review of possible geological mechanisms is presented and shown to be inadequate to explain the diversity of forms, patterns of organization, and subtlety in design exhibited by this collection of objects. The presentation concludes with a discussion of possible reasons why this phenomenon was originally overlooked and is apparently not being considered seriously by the planetary science community.

Can Archeological Methodology Apply to Planetary SETI?

James Strange
University of South Florida

No abstract

Anomalous Textual Artifacts in Archeology and Archeo-astronomy

Richard Thompson
Alachua, FL

Ancient artifacts can survive within written texts, as well as within the strata of the earth. An old manuscript or diagram may be datable to a recent historical period, but it may contain material that is much older. One type of textual artifact consists of knowledge that seems too advanced for the historical period of the text. In cases where comparable knowledge was acquired in modern times through extensive scientific efforts, it can be argued that the knowledge may be a remnant from an earlier, advanced civilization that is lost to historical memory.

In this paper, I will discuss three examples of anomalous textual artifacts. They are:

- (1) Accurate values of the diameters of the planets, Mercury, Venus, Mars, Jupiter, and Saturn, are found in the Indian astronomical text, Surya-siddhanta. This information can be found in a manuscript dating to A.D. 1431, long before modern knowledge of planetary distances and diameters was acquired using telescopic observation.
- (2) The cosmological section of the Bhagavata Purana gives distance figures that closely match the distance of the sun from the earth and the minimum and maximum geocentric distances of Mercury, Venus, and Mars. Scholars date the Bhagavata Purana to the 10th century A.D.
- (3) Old Indian astronomical texts, such as Surya-siddhanta, contain star coordinates which correlate strongly with star positions about 50,000 years ago. This can be interpreted as meaning that these coordinates were measured in this remote period.

The patterns of correlation found in (1), (2), and (3) can be shown to be statistically significant. I discuss the statistical analysis of these correlations in relation to the controversial claim that there existed a pre-modern civilization with advanced astronomical knowledge.

Using Anomalies to Teach Science

Michael Epstein, Margaret Bullard, and Brad Buehler

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and

Stephen Braude

**Department of Philosophy, University of Maryland, Baltimore Campus,
Columbia, MD**

The investigation of anomalies has led to many great discoveries in science as well as a number of great embarrassments. A study of the experimental procedures employed in these investigations can be extremely useful in the training of students at the college

undergraduate level. An examination of the scientists' motivation and experimental design can lead students to a better understanding of how to approach a scientific problem in a critical but open-minded manner.

While anomalies have been used in lecture and seminar-style courses to teach critical thinking skills, a much greater impact can be made on student development by incorporating them into the laboratory portion of the curriculum. This paper will report on the results of using anomalies as an educational tool in courses in general and analytical chemistry. While the use in general chemistry consisted only of lecture, discussion, and testing, the use in analytical chemistry was extended to special projects in which students spent several weeks developing experimental procedures to investigate anomalies. The experiments described where include the examination of the 200-year-old claim of biological transmutation of elements by plants and the forensic investigation of foil materialized on the body of a purported medium. The results of the experiments as well as the student's reactions to the projects will be described.

The Mainstream Extraterrestrial Hypothesis: Some Reports Strongly Suggest Alien Visitors

Stanton T. Friedman

79 Pembroke Crescent, Fredericton, New Brunswick, E3B 2V1, Canada John B. Alexander

After 38 years of study and investigation of every aspect of the UFO problem, and having written 2 books and more than 70 papers, and answered at least 30,000 questions after more than 700 lectures ("Flying Saucers ARE Real!") and hundreds of interviews, I have reached 4 major conclusions:

1. The evidence is overwhelming that Planet Earth is being visited by intelligently-controlled ET spacecraft (i.e. SOME UFOs are alien vehicles. Most are not).
2. The subject of flying saucers (All Flying Saucers are UFOs, few UFOs are Flying Saucers) represents a Cosmic Watergate (i.e., some FEW people in government have known since at least July, 1947, when 2 crashed saucers were recovered in New Mexico, that SOME UFOs are alien spacecraft.)
3. None of the anti-ET origin arguments stand up under careful scrutiny, through they sound great until one examines the data.

4. The biggest story of the millennium involves ET visits to Planet Earth and successful cover-up of the best data ... bodies and wreckage, for almost 50 years.

The pro and anti arguments are not symmetric. I refer to evidence such as 5 large scale scientific studies, actual above TOP SECRET government documents, physical trace cases, radar cases, abductions, etc. Fewer than 2% of the people in my audiences have read any major study. The biggest, "Blue Book Special Report 14" covering 3201 sightings with over 240 tables and charts, isn't even mentioned in any of 11 anti books, though all the authors were aware of it. Debunkers and True Believers simply ignore evidence. The debunking rules are:

- Don't bother me with the facts, my mind is made up.
- What the public doesn't know, I won't tell them.
- Don't attack the data, attack the people.
- Do research by proclamation, NOT investigation.

This paper reviews the major sources of solid information and demolishes the anti-arguments (supposed absence of scientific data, impossibility of interstellar travel, secrets can't be kept, they wouldn't act that way, ad nauseam) of the uninformed skeptics.

Theoretical and Practical Issues of Science Faced by the University of Colorado Project to Study Unidentified Flying Objects

Michael D. Swords

Department of Science Studies, Western Michigan University

Upon receiving what became a half-million dollar U.S. Air Force grant to study UFOs in the late 1960's, the UFO-naive University of Colorado staff was faced with the problem of how to proceed with the job. They argued for approximately four months before deciding upon a methodology for their "scientific investigation." The major issues and difficulties confronting them will be presented in their theoretical and practical contexts. An assessment of how well they did in pursuing their program will be made.

Science, Evidence and the Extraterrestrial Hypothesis as Perceived by a

Survey of 650 Scientists

Mark Rodeghier
Center for UFO Studies, Chicago, IL

No abstract.

Acceleration

Bruce Maccabee
Sabillasville, MD

During the past 49 years there have been many reports of UFOs "stopping on a dime", accelerating rapidly, making right angle turns and simply "disappearing." These reports have been treated with some extra skepticism because UFOs "aren't supposed to violate physics as we know it." Now, thanks to some alert videographers, we have quantitative data on UFO speed and acceleration. The ability to create extreme acceleration ... by means that we can only guess at ... could explain the reports such as referred to above.

A Deviance Perspective on Ufology and Normal Science

Charles F. Emmons
Professor Sociology, Gettysburg College, Gettysburg, PA

The purpose of this paper is to explore the extent to which the labeling of ufologists and of UFO experiencers as deviant serves as a social control mechanism for mainstream science. This study is based primarily upon ethnographic interviews with 91 UFO researchers (including 84% with doctorates) in a variety of academic disciplines. Other data come from participant observation at UFO conferences and meetings (1992-1995) in addition to analysis of available literature in ufological journals and books.

Why are UFOs considered an unsuitable research topic in the first place? The Condon Report (1969) represented political and academic institutional power directed toward the definition of UFO involvement as deviant. Currently CSICOP serves as a defender of that

definition in the interests of mainstream science. Most individual astronomers, and other scientists privately think, however, that UFOs are worth studying.

In anticipation of negative social control, 80% of ufologists in government, 57% of those in academe, and 51% of those in business have partly or completely hidden or delayed their involvement. Mass media coverage is especially risky. Some academics have been denied promotion and tenure or have been brought up for special review because of their UFO research and have had to seek legal counsel.

UFO experiencers are typically doubted if not ridiculed. Since their experiences are not officially "normal," any highly strange reports are considered by debunkers as evidence of mental dysfunction.

Within ufology itself there is a conflict between a more "nuts-and-bolts" scientific orientation and a "New Age" or "New Science" orientation. This conflict raises questions not only about the chances of ufology being considered sufficiently objective and becoming legitimated in mainstream normal science, but also about whether understanding UFOs (and other anomalies) requires new ways of knowing that would violate or extend the very notion of science.

A Bayesian approach to Hypothesis Testing

Peter A. Sturrock
Stanford University

Thinking about anomalies and anomalous phenomena requires a careful separation between one's evaluation of the evidence, of relevant models, and of one's prejudices. Realizing also that group pressure plays a significant role, it is convenient to divide all topics into scientific (evidence and theory), meta-scientific (relevant prior beliefs) and non-scientific (sociological and political factors). The scientific and meta-scientific aspects may readily be incorporated into a Bayesian representation of the problem, in the form of probabilities judged on the available information and prior probabilities, respectively. A decision-theory approach suggests a procedure for assigning numerical weights to the non-scientific aspects.

The Bayesian approach also offers an interesting procedure for hypothesis testing, that is

an alternative to the usual p-value approach that is much used in parapsychology and elsewhere. The p-value procedure consists of estimating the probability that, on the so-called "null hypothesis" (that no extraordinary process is going on), the experiment would have yielded the actual result or a more extreme result. Textbooks caution that the p-value does not give the probability that the null hypothesis is true. A recent textbook (J. Utts, *Seeing through Statistics*, Duxbury Press, 1996) adds "Although that might be a more interesting question to answer, there is no way to answer it."

It will be shown in this presentation that a Bayesian approach to this issue allows one to address this more interesting question.

An Experiment to Determine the Scaling of Anomalously-Induced Statistical Bias with the Lability of a Random Process

Michael Ibison

Princeton Engineering Anomalies Research, School of Engineering and Applied Sciences, Princeton University, Princeton, NJ 08544-5263

The scaling laws for the anomalous interaction between humans and random processes are largely unknown. This applies to physical, statistical and psychological parameters. The main reason for this unhappy state of affairs is that the effect-size — measured as a Z-score per sample from the random distribution — is very small. As a consequence, it takes a long time to collect enough data just to verify an effect is present. Therefore, the search continues for an increased Z per unit time through manipulation of the various parameters that are at our disposal and which we think might be relevant. The speed at which data is collected (i.e., the rate at which the random process is sampled), and the data-density (i.e., the number of binary bits comprising a single sample), are two such candidates investigated in the experiment reported here. Additionally, by comparing effect sizes induced on two different data densities, we are able to test the DAT hypothesis of May et al. All this is achieved using a wide bandwidth (70 MHz) noise source, and dedicated special-purpose high-speed data processing equipment.

Alien Abduction and Structurally Determined Reality

Caroline McLeod, Cambridge Hospital, Cambridge, MA

No abstract.

Memory Retrieval and the UFO Abduction Phenomenon

David M. Jacobs, Temple University

Investigating the UFO abduction phenomenon presents unique methodological difficulties. Although hypnosis has been employed as the primary instrument for abduction memory retrieval, few standards exist for its use in this area. The lack of standardized methodology has sometimes caused amateur and inexperienced hypnotists to inadvertently participate in the generation of false memories. This has complicated the ability for researchers to define clearly the abduction phenomenon's parameters.

Degradation of memory, abductee amnesia, abduction-related "inserted" memories, and dissociation, have prevented naive hypnotists from understanding the abduction phenomenon. Some hypnotists' validation questioning has led to fantasies that abductees remember as "fact." Although many researchers have thought that consciously recalled abduction accounts are reliable, they are unaware that these memories can be as unreliable as those recalled with incompetent hypnosis. The resultant erroneous data has caused a fragmentation of opinion about the abduction phenomenon's nature and causes. Some researchers and abductees believe that the abductors are benevolent and spiritually aware. Others have found them to be environmentally concerned. Some abductees have claimed that they were abducted by American military personnel working with aliens. Unsuspecting hypnotists have failed to understand abductee's confusion of abduction events with sexual abuse. Others have allowed abductees to think that they have led past lives.

As a partial result of improper technique, abduction researchers have become vulnerable to charges that abductions are the result of false memory syndrome, and/or hypnotically suggested remembrances. The incompetent hypnotists' erroneous data lends a measure of substance to that charge.

Standardization of research and hypnotic technique is required for reliable data to appear. With competency both in the knowledge of hypnosis and the abduction phenomenon, the

basic patterns central to the abduction phenomenon emerge.

Gender Differences in Human/Machine Anomalies

Brenda J. Dunne

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Assessment of 270 individual databases produced by 135 human operators in five local and four remote human/machine anomalies experiments conducted in the PEAR laboratory between 1979 and 1993 reveals significant gender-related differences in performance. The 140 databases produced by 62 females are much larger on average than the 130 produced by 73 males, but the average male results display significantly stronger correlations with the operators' pre-recorded intentions to shift the output distribution means of a variety of random devices to higher or lower values. Both groups demonstrate greater success in the high-intention efforts than in the low, but whereas a majority of the males succeed in both directions of effort, producing intentional results that are relatively symmetrical in comparison with their empirical baselines, most of the females' low-intention results are opposite to intention and their baselines tend to high values. The female data also frequently display larger score distribution variances. These gender-related patterns are more pronounced in five local experiments than in four remote databases. No gender differences are found in the two experiments that yield null overall results, suggesting that the gender-related patterns observed in the successful experiments are indicative characteristics of the primary human/machine anomalies.

Information, Consciousness, and Health

Robert G. Jahn

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A 16-year empirical assessment of anomalous human/machine interactions provides strong evidence that consciousness can add information to otherwise random digital strings. A parallel program of remote perception studies establishes the inverse process:

the anomalous acquisition of information about distant physical targets. Remarkably, neither of these extraordinary capabilities show any dependence on either the distance or the time separating the participant from the target. The relevance of these consciousness abilities to human health follows from the recognition that physiology entails a myriad of subtle information processes, all of which involve some degree of randomness in their normal functions, and thus may be similarly influenced by conscious or subconscious volition.

Silent Shockwaves: Evidence for Presentiment of Emotional Futures

Dean I. Radin

Consciousness Research Laboratory, University of Nevada, Las Vegas, NV

Roger A. Hart

Is consciousness limited to perception of the sensory present and memory of the past, or does it also have access to future information? In particular, do we sometimes sense emotional shockwaves from our own future? Such feelings or hunches are called presentiment, or pre-feeling.

In an experiment designed to explore presentiment, a computer was used to randomly select and present target photos from a pool of 120 digitized photographs. targets in a "calm" category included landscapes and cheerful people; targets in an "extreme" category included violent and erotic topics.

Heart rate, blood volume, and electrodermal activity were recorded before, during and after presentation of the target photo to see whether the body would differentially respond unconsciously to the two types of future targets. Extreme targets were expected to produce classical orienting responses after the targets were displayed, and the hypothesized shockwaves from the future were expected to cause orienting "pre-sponses" before the pictures were displayed. Calm targets were expected to cause no unusual responses before or after the target was displayed.

A pilot experiment and two replications, involving a total of 27 volunteers and 900 trials, showed the expected orienting response after the target photo was displayed (peak $z = 8.6$, $p < 10^{-15}$), and in accordance with a presentiment hypothesis, also showed an orienting pre-sponse before the target photo was displayed (peak $z = 4.9$, $p = 9.6 \times 10^{-7}$).

Experimenter Expectations and Distant Intentionality on Biological Systems

Marilyn Schlitz
Institute of Noetic Sciences

and

Richard Wiseman
University of Hertfordshire

What role do the beliefs and expectations of researchers play in the outcome of their experiments? In most areas of science, research relies on double-blind, randomly controlled, experimental protocols in order to eliminate the "human factor" physically influencing the results. This procedure is based on a set of assumptions about an "objective" world "out there" than can be controlled and manipulated by detached and impartial scientists. But how much can we really trust this approach to knowledge? What if, even with the precaution of double-blind controls eliminating the possibility of unaccounted-for physical influences, the experimenter's state of mind — beliefs, attitudes, expectations — were demonstrated to be a factor in determining the results? Such a situation would have profound implications for the practice of science and for the nature of scientific knowledge. For one thing, it would mean the intrusion of consciousness as a causal factor in the operations of the physical world.

This paper addresses this fundamental question within the context of a recent study of remote staring conducted by two experimenters (Schlitz and Wiseman) who have had different results in previous studies. In this experiment, the autonomic nervous systems of volunteers were monitored while the people were being stared at via closed-circuit television from another room. The trials were counterbalanced with control periods, in which no remote staring occurred. The research was carefully controlled such that both of the investigators drew from the same group of volunteers, utilized the same randomization procedure, made use of the same equipment, and ran the study in the same laboratory. When the results were tallied, the experiments replicated the respective investigators' initial findings: Schlitz' data produced significant differences in the mean amount of volunteers' autonomic activity during the staring periods as compared to the control periods; Wiseman found no differences in the two conditions.

Accusers of Child Sexual Abuse Who Recanted

**Harold Lief
University of Pennsylvania**

Forty ex-therapy patients who had accused family members of abusing them when they were children, recanted their accusations. This report describes the process of evolution of pseudomemories with the therapeutic relationship seen as the key factor. The nature of the study population, e.g., well educated, relatively affluent Caucasians, and the type of accusations, e.g., satanic ritual abuse murder, child breeding in almost half, the factors that influence the development of the pseudomemories and some common themes in the evolution of pseudomemories are reported. This study will also report important dimensions of treatment such as diagnoses, types of therapy including hypnosis, medications used and abused, frequency of hospitalizations, of attempts at suicide, etc.

The second portion of the paper describes the process of memory devolution in which the patients recognized their memory distortions, that they are getting sicker rather than better, and that the therapist had an inappropriate degree of influence in their lives. Almost half the group actually had been abused as children, had always carried with them the memories of abuse and claimed they can distinguish these memories from those that were allegedly "repressed" and then recovered.

Hypnosis and Delayed Recall

**Fred H. Frankel
Harvard University**

Late twentieth century psychotherapy has its roots in the century-old writings of Freud and Janet, which in turn depended on some of the notions of Mesmer and de Puysegur a century earlier. The concepts of repression and dissociation, traceable to these early works, have dominated the practice of modern psychotherapy. That process is thought to aid in the recovery of painful feelings and memories buried in the unconscious mind. The belief is that unearthing the memories resolves the effect and leads to clinical

improvement.

The veridicality of the memories has generally been of less significance than their narrative value. In the aftermath of the Vietnam war, emotional and physical symptoms in veterans came to be interpreted as derivatives of hidden, real wartime experiences. The focus on combat trauma soon broadened to include all trauma, particularly reports of early childhood sexual and physical abuse, the reality of which had been finally acknowledged by society. The growing suspicion of early abuse has augmented a rigorous search for such a history in individual cases, and even an interpretation of certain symptoms as clear indications of the presence of hidden traumatic memories. Surveys, largely methodologically unconvincing, have been published to buttress this view. In addition, hypnosis and sodium-amytal interviews have frequently been included in the clinical plan, in the belief that those procedures improve accurate recall.

However, a survey of the experimental studies of memory underscores its malleability and thus its undependability. A review of experimental studies involving the use of hypnosis demonstrates that inaccurate "memories" or confabulations are at least as common as is accurate retrieval in hypnosis. These are compelling reasons for caution and modesty in the interpretation of the clinical material.

Suggestion and imagination complicate therapy aimed at recovery of memory. The expectation that hypnosis in the hypnotizable always involves the mechanism of dissociation, and that hypnosis therefore has a place in the reconnection with hidden or dissociated memories, is logically seductive but fraught with risks. Particularly so when methods that lack a formal induction procedure, but nonetheless closely resemble hypnosis, are used to reconnect adults in their 30's and 40's with never before even suspected "childhood abuse." The widespread allegations in families in recent years are not only damaging to those falsely accused, they diminish an appreciation of the horror for those who were genuinely traumatized.

Physiological Parameters of the Relief of Pain with Hypnosis

Brian D. Kiernan, Joseph R. Dane, Lawrence H. Phillips, and Donald D. Price
University of Virginia

Mechanisms of hypnotic analgesia were investigated by examining changes in the R-III, a

nociceptive spinal reflex, during hypnotic reduction of pain sensation and unpleasantness. The R-III was measured in 15 healthy volunteers who gave VAS-sensory and VAS-affective ratings of an electrical stimulus during conditions of resting wakefulness, suggestions for hypnotic analgesia, and attempted suppression of the reflex during non-hypnotic conditions. Hypnotic sensory analgesia was related to reduction in the R-III ($R^2 = .51$, $p < .003$), suggesting that hypnotic sensory analgesia is at least in part mediated by descending anti-nociceptive mechanisms that exert control at spinal levels in response to hypnotic suggestion. Hypnotic affective analgesia was not quite significantly related to reduction in R-III ($p = .053$). Reduction in R-III was 67% as great as, and accounted for 5% of the variance in reduction of pain sensation. In turn, reduction in pain sensation was 75% as great as, and accounted for 77% of the variance in reduction of unpleasantness. The results suggest three general mechanisms may be involved in hypnotic analgesia: The first, implicated by reductions in R-III, is related to spinal cord anti-nociceptive mechanisms; the second, implicated by reductions in pain sensation over and beyond reductions in R-III, may be related to brain mechanisms that serve to prevent awareness of pain once nociception has reached higher centers, as suggested by Hilgard; the third, implicated by reductions in unpleasantness over and beyond reductions in pain sensation, may be related to selective reduction in the affective dimension, possibly as a consequence of reinterpretation of meanings associated with the painful sensation.

Testing the Radial Appliance

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23454

We report here a double-blind study of the effects of an energy device known as the radial appliance, developed by Edgar Cayce in the 1920s. Cayce claimed that the device would improve circulation in the extremities. Our study included 30 subjects; half were in a placebo group with unconnected appliances. Subjects were instructed to use the appliances for 16 sessions. We measured hand and foot temperatures before and during the 1st, 4th and 16th sessions. There was a significant difference between the experimental and control groups in the hand/foot temperature difference (5.1 degrees, $t = 2.49$, $p = .02$) between the 1st and 4th sessions. The difference between the 1st and 16th sessions was not significant. However, for the experimental group, there was a suggestive correlation ($r = -.56$, $p = .07$) of hand temperature with the number of days it took to complete the 16

sessions. That is, subjects who completed their sessions on consecutive days had a greater effect than those with gaps between sessions. Thus consistency of use may have contributed to the magnitude of the effect. There was no significant correlation for the control group ($r = .07$, $p = .83$), suggesting that the placebo effect is not responsible.

A Three-Dimensional, Dynamic Geometric Pattern with Possible Psychological, Spiritual and Physical Implications

John L. Petersen
The Arlington Institute, Arlington, VA

During the process of two dramatic Near-Death-Experiences, Lynnclaire Dennis, a woman with no previous scientific background, was given distinct information about a unique three-dimensional pattern which she was told had profound implications for humanity, both in psychological and physical terms. Both the Dalai Lama and Sri Sathya Sai Baba confirmed the importance of the pattern and strongly urged her to obtain broad exposure to it.

Viewed from different perspectives, the single pattern produced images of the symbols of mathematics as well as major religions of the world. In psychological terms at least, it has had a very powerful effect on some people. Some young children immediately say they recognize it. Upon seeing it, some adults break down and say that it provided the answer to life that they had been pursuing. Others say that it has been the catalyst for changing their lives.

Ms. Dennis was told that the pattern was the pattern of love and that it held the key to energy and other scientific revolutions. Photographs of the pattern will be shown as well as a video presentation produced by the Electronic Visualization Laboratory of the University of Illinois at Chicago.

The Powerful Intangible Effect of Person

Stewart G. Wolf
Totts Gap Institute, Totts Gap, PA

A falling apple is said to have triggered Isaac Newton's discovery of gravity. It was a dog's heart rate that made Horsely Gantt aware of the effect of person. Both forces, although intangible, powerfully affect behavior, one of inanimate, the other of animate bodies. No one has yet discovered the mechanism responsible for either of these forces.

The Effect of Person is evident in the overpowering influence of certain political leaders throughout history. It is also evident among musicians, lecturers, salesmen and con men. It is also highly relevant in the realm of health and disease. Biology and medicine have self consciously avoided studying intangible forces whiles physicists have focused on intangibles for some of their most formidable contributions.

I will present experimental data illustrating the effect of intangibles on the tangible structures of the body in health and disease and in relation to sudden death.

A Controlled Study of Paranormal Healing

Bruce Greyson
University of Virginia Medical School

A variety of studies have suggested that psychic healing can augment the therapeutic effects of traditional medical treatments. A particular meditation technique developed by Lawrence LeShan, Ph.D., as a teachable skill has been used for 27 years as an adjunct to traditional medical treatment of a variety of pathological conditions, and can be performed either at a distance or in the presence of the patient. Anecdotal observations suggest that this noninvasive technique appears to stimulate a patient's natural capacity for self-healing, enhancing the positive effects of medical technologies and interventions.

This investigation used a randomized, double-blind, prospective experimental protocol to study the therapeutic effect of distance healing on patients with major depression receiving traditional treatment with antidepressant medication and psychotherapy. Adult patients (N=40) admitted to an inpatient psychiatric unit for major depression, aged 19-81 years, were randomly assigned to either an experimental or control group. All subjects received standard treatment for depression; in addition, experimental group subjects received distance healing daily for 6 weeks by volunteers trained in LeShan's meditation techniques. Outcome was measured weekly for 6 weeks and then biweekly for 6 more

weeks, using the Hamilton Rating Scale for Depression, Brief Psychiatric Rating Scale, Global Assessment of Function, and visual analog scale for depression. Results indicated a nonsignificant trend for experimental subjects to show greater improvement than control subjects in depression, general psychopathology, and overall subjective distress. Among experimental subjects, favorable outcomes were significantly correlated with number of healing sessions received and with healers' ratings of the "strength" of the healing sessions.

Terminological Problems Related to Psi Healing

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The widely used term "energy healing" as well as the related descriptions of prana, Qi, etc. as vital energy seem to be inappropriate. The accepted definition of energy in physics is the ability to produce work or heat. The latter can be described in an invariant form: $W = F \times dC$, where W is work, F is a generic force and C is a generic coordinate (for instance, $p \times dV$, $F \times dl$, $T \times ds$, $e \times dV$, etc.). Although common languages use the word energy metaphorically as the ability to produce physical or mental work (in humans, particularly), the source of such work seems to come only from food through metabolic processes. A healing communication produced by a healer (through his/her intent) and manifested in 'energizing' or restoring the physiological function of a recipient is most likely a transfer of information rather than energy. The energy required for such a transfer of information may come from the healer's metabolic processes.

A problem presents the seeming independence of the effect of the communication from distance, as many studies indicate. In order to solve this problem further development is needed of previously proposed concepts of implicative connections and/or of the nonlocality phenomenon found in quantum mechanics. Less known in the U.S. but an interesting approach was proposed by Professor A., Denisov who suggested that a unit of information is the fundamental unit of matter. In his concept the transfer of telepathic or healing information occurs through excitation of the fundamental information field, not as a transfer process. In order to avoid confusion, it is preferable to use more general terms such as Yhealing or psychic healing with a reference to a particular technique used or a tradition.

Effects of Sympathetic Magic Healing Techniques on the Physiology of a Remote Person

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In studies examining the effects of mental attention on remote human physiology, one person (the healer) is asked to mentally cause another, remote person (the patient) to become either calm or activated at randomly assigned periods. To help the healer focus on the patient, two forms of feedback are typically employed: the real-time physiology of the patient, or a real-time video image of the patient. The present study examined whether results could be obtained with real-time feedback by concentrating on a likeness of the patient.

The patient was asked to create a doll in his or her likeness, and to include momentos, pictures and an autobiographical sketch in a kit designed to represent them. The healer used the materials in this kit to make a sympathetic connection with the patient. During the experiment, there were no other links, real-time or otherwise, between the healer and the patient.

Results of the experiment, which involved three people who alternately played the roles of healer, patient, and experimenter, significantly replicated earlier studies suggesting that mental attention can influence remote human physiology. This study also indicated that physiology can be affected even without feedback.

Christian Science - A Very Controversial Religion and Science

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Approximately 125 years ago a woman, Mary Baker Eddy: experienced a miraculous healing from a serious injury, diagnosed as fatal by her doctors; spent years of almost full-time prayer, meditation and bible study to learn how she was healed; and founded an extremely controversial religious movement called "Christian Science". Christian Science

(CS) emphasized restoration of physical and mental health by purely spiritual means and received instant resistance because some of its ideas were contrary to doctrines of certain Christian sects, and orthodox medicine and science. Nevertheless, it was Christian in that it was based upon Christianity and science in that its hypotheses were testable by practical application to the healing of physical discords and deformities and by ability to obtain reasonable repeatable results. And CS healing is still being practiced today.

The paper summarizes the epistemology of CS, contrasting its required leaps of faith, and conceptual problems with those of atheistic and Judeo-Christian world views; the explosive initial growth of CS and its enormous numbers (many thousands) of authenticated and well-documented healings of maladies such as heart disease, polio, cancer, tuberculosis, lupus, cataracts, in latter stages; and medical resistance which has included prosecution of CS parents in the criminal court system — in several instances when CS could not heal their children.

The radical reliance of CS on mind rather than medicine for healing has prevented its acceptance by most of society. However, its strict emphasis on controlling and correcting mental states -- rather than focusing upon perceived states of matter — provides an interesting perspective on many topics of interest to SSE membership. Thus, the CS perspective on SSE topics such as subtle energies, mind-matter interactions, and consciousness, are briefly mentioned.

Personality and Abilities of Children Claiming Previous Life Memories

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Young children who claim memories of a previous life can be found in many countries, particularly in Asia. The child frequently states where he/she lived previously, often claims violent death in the previous life and shows phobia/philiias, and sometimes has birthmarks or deformities that he/she associates with the previous life. The Gudjonsson Suggestibility Scale, Raven Progressive Matrices, Peabody Picture Vocabulary Test, and the Child Behavior Checklist were administered to 30 children in Sri Lanka who, mostly at an earlier age, had consistently been claiming memories of a previous life. They had greater verbal skills and better memory than their peers, performed much better in school, and were more socially active, but were not more suggestible. As judged by their parents,

they had a higher Child Behavior Checklist Problem Score than their peers, but not according to their teachers.

Is it Possible to Induce Protective Effects with Serial Agitated High Dilutions

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No abstract.

Research in Acupuncture

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The study of alternative medicine demands attention to a fundamental methodological question: "How can we accurately study systems whose explanatory models lack the paradigm characteristics that gave rise to western science?" Normal — or "modern" — bioscience functions within a metaparadigm that seeks a singular reality and uses a logic based in oppositional duality, reductionism, and materialism. In the post-Flexner era, Biomedicine accepted this form of science and increasingly measured efficacy from its perspective. The limits of this approach have become increasingly visible; they are yet more apparent when studying healthcare systems that posit mechanisms of actions that do not 'make sense' within the materialistic metaparadigm. The concept of 'chi' in Acupuncture is one of these, with its associated meridional anatomy. To adequately study Acupuncture, we must account for its explanatory model in research design, and this demands the application of a postmodern approach to science. This point is developed within a four-question framework for medical research. Each question provides pivotal data, yet each also requires a different form of research. Methodological issues associated with each questions are discussed with examples from Acupuncture research. The paper ends of emphasizing the need to stop studying Acupuncture as if it were an odd form of Biomedicine, and to begin studying it in terms of itself.

Microbial Mysteries: Rethinking Pleomorphism in Biology and Medicine

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Pleomorphism is an old concept in biology that refers to the multiplicity of forms of microorganisms. Microbial life appears to be infinitely creative in varying its cellular forms and functions in relation to its environment. Moreover, certain pleomorphs known as cell wall-deficient microbes can penetrate host eukaryotic cells such as human cells and become internal parasites, producing cryptic infections. Microbial life in the natural world is in the habitat of human and animal cells, not synthetic media as is used in conventional microbiology. Unfortunately, the latter has focused on microbes grown in such media, in which only "classical" forms appear. Conventional microbiologists chose to ignore the huge variation in microbial forms in delineating species. Given the variety of such forms, the concept of distinct microbial species based on morphology, staining properties, etc., becomes questionable. In addition, pleomorphism may be an important but neglected factor in the origin and evolution of life.

Cryptic forms of microbes are found in the blood and other tissues of normal people, and different forms are seen in the blood of those suffering from infections or chronic degenerative disease. However, these are dismissed by mainstream medicine as artifacts. Evidence for microbial pleomorphism and its relation to health and healing has a long history involving the research of mavericks such as Reich, Rife, Enderlein, and Livingston-Wheeler. Moreover, today, it has emerged again in the etiology of certain old and "new" diseases, including cancer, AIDS, tuberculosis and even the black plague of the Middle Ages that has once again resurged. There is also the advent of "mad cow disease", believed to be caused by cryptic, pleomorphic microbes called prions.

Today we must reconsider the nature of an infection by a bacteria or virus. The "opportunistic infection" in AIDS admits that the natural flora of the body has turned virulent, but why and how? In relation to this, it is estimated that we are made up of 10 times more microbial cells than human cells that live in harmony most of the time. The concept of pleomorphism offers us new insights into the etiology of disease, stresses the importance of the bodily "terrain" in health and healing, and of symbiotic relationships of microbial and human cells. These considerations may lead to breakthroughs in understanding various diseases and their treatments.

Information and Sensory Perception

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An organism, human awareness of the external, physical world is through information supplied by one's senses, subject to their limitations and subjective interpretations. There are five conscious senses, and at least two other senses that become conscious when significantly challenged, exclusive of the homeostatic processes of the body. Each of these senses have unique characteristics, limitations, and in some cases mechanical means of amplification. The input, information transfer capability of these senses are evaluated from a measurement theory perspective. There may be other such senses. If so, how do we detect, evaluate, and verify their nature?

When we try to gain information in the other direction, namely what goes on internal to the organism, the processes are quite different. We can measure physical and biological aspects of the organism, but the internal aspects of consciousness and the psyche are only measured through communication from one human to another via verbal, graphic, textual, and aural processes. What is the information capacity of these channels? How are they processed? Are there other means of communication not fully identified?

This paper presents an initial attempt to structure what we do know about sensory perception, both outward and inward, as a means to address less obvious sensory channels in a more rigorous manner. Verifiable, repeatable measurements are the only way of establishing the existence and capacity of sensory and communication channels. If the underlying processes are changing, or are intermittent, or the signal is weak in a field of high noise, or our detection capability is deficient, and all combinations of these, such measurement is difficult. anecdotal data cannot provide verifiable data, but can point to testable, falsifiable hypotheses for which suitable measurements may be made. An organized structure of what we do know about sensory perception and communication and an understanding of uncertainties inherent in the detection and measurement may provide insight into approaches for better identification, detection and measurement of sensory processes, known and unknown.

Investigation of an Alleged PK Superstar

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For the past several years, enthusiastic claims have circulated about Joe Nuzum, an alleged PK superstar who reportedly produces a variety of observable psychokinetic effects. In November, 1995, I supervised two sessions in New York with Joe, the aim of which was to obtain high resolution video of Joe's phenomena under well-controlled conditions. But Joe claimed to find the environment for the first night's session inhospitable, and the next night's session was accordingly held in the more comfortable, but uncontrolled, setting of Joe's suite. Although some phenomena were taped that night, it was impossible to determine, under the unsatisfactory conditions that prevailed, whether they were due to psi or chicanery.

As a result, a second series of sittings was scheduled again in New York for March, 1996, in order to see if similar or better phenomena could be elicited under more satisfactory conditions. But Joe did not adhere to the conditions specified in advance, and when I tried to inspect the props he brought with him, he became defensive and hostile, and claimed that my skepticism undermined his ability to do a demonstration that evening. The next day Joe announced that if I were present for the evenings session no phenomena would occur. As a result, I agreed not to participate. At the informal session held in my absence, nothing of interest occurred.

One could reasonably conclude at this point that Joe is a fraud who tries consistently to subvert or circumvent reasonable controls. If Joe is a genuine psychic, as his supporters continue to maintain, he at least seems to be of no value as a subject.

Wishing for Good Weather: A Natural Experiment in Group Consciousness

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It is common to hear remarks about how surprisingly often the weather is good and the rain holds off, during the four-day celebrations of Alumni Reunions and various

Commencement activities at Princeton University. This suggested a "natural" experiment addressing the effects of group consciousness on the environment. Historical records for Princeton's graduations, and national weather service records for Princeton and six surrounding communities were used to create epochs, relative to Princeton's Commencement, of mean precipitation levels. When compared, three of the four days showed moderate to impressive differences, with Princeton recording less rainfall than the surrounding weather stations. The three days, which are those with the main activities planned for the outdoors, show a significant composite difference. Comparisons made for other days with less communally shared interest in good weather show no indication of differences. The analysis provides an equivocal, but interesting case for a natural, efficacious interaction of consciousness with the physical world.