

# Zetetic scholar

An Independent Scientific Review of Claims of Anomalies and the Paranormal

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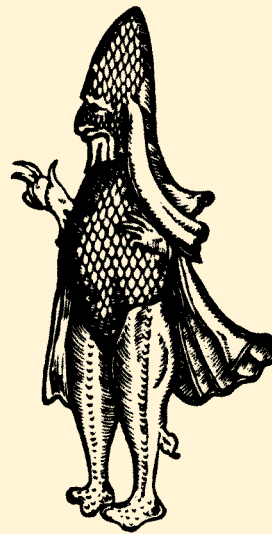
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AN INDEPENDENT SCIENTIFIC REVIEW OF  
CLAIMS OF ANOMALIES AND THE PARANORMAL



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# Editorial

The response to ZS has been very gratifying, and it looks like it will be a going concern. Though the vast majority of letters were positive in their endorsements, some raised criticisms of interest. Thus, several parapsychologists complained about the emphasis in the first issue on debunking bibliographies while several critics of the paranormal complained that ZS was too conciliatory and soft in its approach to extraordinary claims. Since our purpose is to strike some balance between camps with our only commitment to science and its proper degree of skepticism, criticism from both sides will probably continue and may really indicate that our purpose is being served reasonable well. This is not to say that all the criticisms have been unwarranted. For example, it was pointed out that we sometimes need to speak not only of "alleged phenomena" but also need to point out that some critical works are merely "attempted debunkings." Putting out this journal has proven a consciousness raising experience on many such subtle points of language, and future issues should reflect greater discernment by your editor.

Sadly, differences over what is appropriate for discussion in ZS has led to the resignation by Martin Gardner from our Board of Consulting Editors. His objection concerned the reasonableness of your editor's giving further serious scientific consideration -- in a future issue of ZS -- to the conjectures of Immanuel Velikovsky, theories which Mr. Gardner believes no longer can be taken seriously by scientists in light of the critical attention already given by respected physicists and astronomers almost all of whom have rejected these theories as preposterous. That is, Gardner views the scientific argument over Velikovsky now a closed matter that deserves no further legitimation by ZS as a scientifically credible debate. Though this editor is not a supporter of Dr. Velikovsky, he does not see the matter as closed because of reasonable criticism of the critics of Velikovsky that continues to be offered by his advocates. We will seriously miss Martin Gardner's valuable support of ZS and hope the future may find him willing to rejoin us. This may be a good place to again remind our readers that the editorial judgments found in ZS do not necessarily reflect the views of any of its consulting editors; in fact, such agreement would almost be impossible since they were selected because they differed on most of the issues about which ZS will be concerned.

## A WORD ON TERMINOLOGY

It may be helpful to readers of ZS for us to explicate the meaning of some of the terminology we will regularly use in talking about extraordinary claims. To untangle some of the broadly divergent terminology, we suggest the following for consistent reference in ZS.

In general, extraordinary events are of two varieties: empirical and non-empirical. An example of the former might be a unicorn, while of the latter might be a mystical state. Such extraordinary events may be explained, respectively, by a set of empirical



(scientific) or non-empirical (metaphysical) theories. For example, a unicorn might be explained as an unusual mutation of a horse. A mystical state may be the result of divine intervention. This leads to the following typology:

Typology of Extraordinary Events

		Explained	Unexplained
Type of theory appropriate for the event	Empirical (scientific)	abnormal	paranormal
	Non-empirical (metaphysical)	supernatural	preternatural

Thus, an abnormal event is an extraordinary event explained by an empirical theory. A paranormal event is an extraordinary event not yet explained by an empirical theory. (In general, scientists seek to transform extraordinary events from paranormal to merely abnormal ones.) The explanation of an extraordinary event by means of a non-empirical theory is what we usually term supernatural. (Supernatural phenomena, as their proponents usually speak of them, do have explanations, but these are usually in terms of metaphysical causes like "the will of the gods" rather than any scientific causes.) Finally, there may be extraordinary events that seem to have not even any non-empirical explanation, and are seemingly beyond any explanation," and this is the meaning of the term preternatural, a term rarely used today but once quite popular.

In practice, this analytic typology may become quite complicated because it is not uncommon for an empirical event (e.g., the winning of a battle) to be explained (at least by priests) as the result of a non-empirical intervention of the gods. Thus, there may be supernatural explanations for what others see as merely abnormal events. Similar combinations of mixing explanations and events are possible in other cases. Thus, one can have a supernatural event perceived as merely paranormal by someone who does not accept the non-empirical explanation. In general, science seeks to convert preternatural and supernatural events into merely paranormal events in the hope of eventually explaining them through an empirical theory that will make them merely abnormal. This typology has imperfections but brings some consistency (and, I hope, clarity) to a hodge-podge of current usages.

A REMINDER

If you like ZETETIC SCHOLAR, please help us get new subscribers so that we may eventually become self-sustaining. We particularly urge you to get your libraries to subscribe. Your help, suggestions and financial support are both needed and welcome.



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## CORRECTION FOR ZS, I, #1



- p. 36: Krupp, E. C., In Search of Ancient Astronauts should properly have been listed as In Search of Ancient Astronomies.

## LETTERS & COMMUNICATIONS

Congress of Astrological Organizations continues to invite you, your committee [Ed.: refers to the Committee for the Scientific Investigation of Claims of the Paranormal with which I was associated at the time of the CAO's first invitation], your readers, any responsible group of scientists, to sit down with our Research Committee to design an experiment or study which would satisfy both scientific and astrological criteria.

Our scores of organizations total thousands of astrologers and comprise a majority of the organized astrological community.

We ask you to print this letter in your very next issue.

-- Al H. Morrison  
Executive Secretary, CAO

An Announcement from PROJECT GRENDEL: We are a proto-scientific group, and according to Editor Truzzi, we could also be classified as a crypto-scientific group. As such, we are dealing in hidden, secret (crypto) information, and seeking, as a budding proto-science, to get such information and our science, accepted as a normal science, i.e., an aspect of primatology, anthropology and zoology, for we are studying the alleged large unknown primates known to many as sasquatches in the Pacific northwest. Since, again by Truzzi's reasoning, the actual discovery of a large primate up here would not upset any scientific laws, our claims to the paranormal may not be as bizarre as some other claims by other groups, such as those who claim to bend spoons. For this reason, sasquatch studies have not come under the same attack by debunkers here and there as do more exotic claims.

However, we would like you to know that we are here and engaged in field work designed to produce evidence satisfactory to the scientific community that such a species of primate does indeed exist on this continent. The primary goal of this field work is therefore to locate physical remains, such as skeletal remains, for we are well aware, and are constantly reminded, that only skeletal remains will satisfy the demand for "extraordinary evidence" to satisfy our "extraordinary claims." A secondary goal is to perform an ecological and behavioral study of the sasquatches at certain forested sites that we have located as prime areas. As it is working out, the secondary goal is being achieved before the primary goal, which is difficult for us, for how can one explain and have accepted the ecology and behavior of an officially

non-existent primate species? Hopefully, our "Hotline" system will result in citizen input that will produce those skeletal remains, and possibly the field studies will encounter the remains we need in the course of the live studies.

We encourage correspondence, and interested persons who wish to learn more about our field studies and search for physical evidence may join the 25 scientists and 37 laymen who are members of Project Grendel by becoming Corresponding Members at \$11/yr. which includes a subscription to our quarterly newsletter, the Gigantopithecus Gazette. Write to Project Grendel, Box 444 Northgate station, Seattle, Washington 98125/telephone 206-782-1264.

In the current issue, we discuss the matching and correlation of four sets of unknown primate hairs and one set of primate blood, as analyzed by recognized experts.

-- Jon Beckjord  
Director, Project Grendel

Welcome to the Zetetic Scholar and herewith are some questions which I should like to see discussed:

When radioactivity was discovered, did it "contradict a well established theoretical principle" (See ZS, 1, #1 p.5)? Was it an "anomaly"? Were the physicists who studied radioactivity before any explanation was found parapsychicists?

Until 1900, did or did not the ultra-violet collapse in the black body contradict "well established theory" of then existent physics? If yes, was it an "anomaly"?

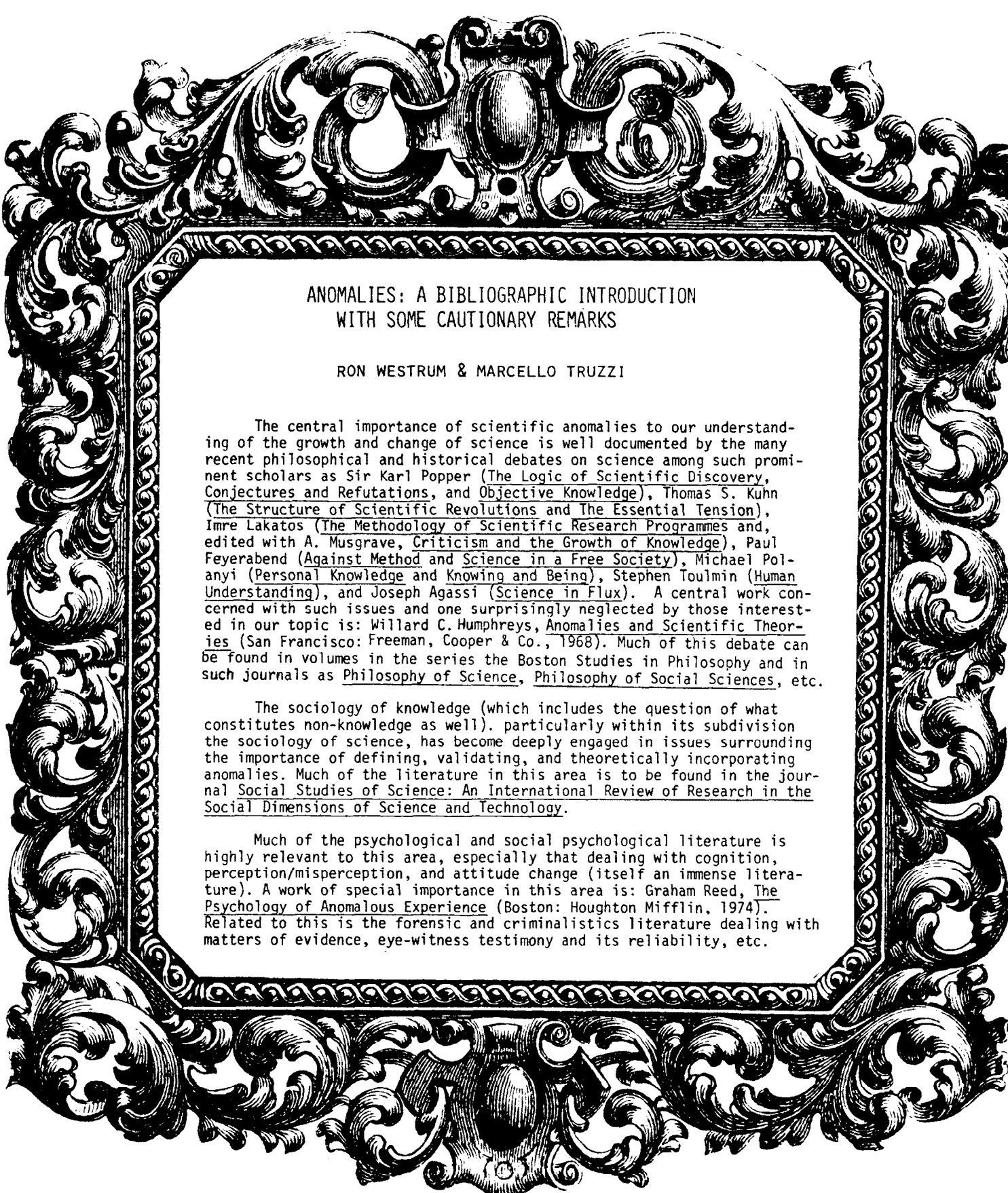
Are now quasars "anomalies"? If not, is Nessie one? Why?

Are there tests, or theoretical means, or whatever means, available in order to clearly distinguish between things that are not yet explainable and that "contradict well established principles" but will give birth later to outstanding advances in science, and "anomalies"?

According to most physicists [for an analysis, see C. S.J. Clarke, "The Hinterland Between Large and Small" in Duncan and Weston-Smith's The Encyclopedia of Ignorance (NY: Pergamon Press, 1977), p. 111], relativity and quanta are mutually contradictory. Is physics a parascience? Is the Hume Rule a scientific rule or a psychological observation?

--Aimé Michel  
St. Vincent-Les-Forts, France





ANOMALIES: A BIBLIOGRAPHIC INTRODUCTION  
WITH SOME CAUTIONARY REMARKS

RON WESTRUM & MARCELLO TRUZZI

The central importance of scientific anomalies to our understanding of the growth and change of science is well documented by the many recent philosophical and historical debates on science among such prominent scholars as Sir Karl Popper (The Logic of Scientific Discovery, Conjectures and Refutations, and Objective Knowledge), Thomas S. Kuhn (The Structure of Scientific Revolutions and The Essential Tension), Imre Lakatos (The Methodology of Scientific Research Programmes and, edited with A. Musgrave, Criticism and the Growth of Knowledge), Paul Feyerabend (Against Method and Science in a Free Society), Michael Polanyi (Personal Knowledge and Knowing and Being), Stephen Toulmin (Human Understanding), and Joseph Agassi (Science in Flux). A central work concerned with such issues and one surprisingly neglected by those interested in our topic is: Willard C. Humphreys, Anomalies and Scientific Theories (San Francisco: Freeman, Cooper & Co., 1968). Much of this debate can be found in volumes in the series the Boston Studies in Philosophy and in such journals as Philosophy of Science, Philosophy of Social Sciences, etc.

The sociology of knowledge (which includes the question of what constitutes non-knowledge as well), particularly within its subdivision the sociology of science, has become deeply engaged in issues surrounding the importance of defining, validating, and theoretically incorporating anomalies. Much of the literature in this area is to be found in the journal Social Studies of Science: An International Review of Research in the Social Dimensions of Science and Technology.

Much of the psychological and social psychological literature is highly relevant to this area, especially that dealing with cognition, perception/misperception, and attitude change (itself an immense literature). A work of special importance in this area is: Graham Reed, The Psychology of Anomalous Experience (Boston: Houghton Mifflin, 1974). Related to this is the forensic and criminalistics literature dealing with matters of evidence, eye-witness testimony and its reliability, etc.

## THE NATURE OF AN ANOMALY

The definition of an anomaly as found in Webster's dictionary is merely "deviation from the common rule" or "something that deviates in excess of normal variation." This is somewhat vague and makes an anomaly synonymous with words like "abnormality" or "irregularity." As the term is used by us and in the literature related to strange phenomena generally, its meaning centers on that which is unexplained, that which is not only unusual but which seems to defy our understandings about the way things normally operate in the world. As such--and philosophers like W. Humphreys have noted this in their discussions--the notion of an anomaly is a relative term, relative to some pre-existing sorts of explanations. An anomaly, then, is something that does not "fit" into some scheme of things. This is very important because the history of science has shown phenomena that were viewed by some science as explained while some other science considered it anomalous. For example, an anthropologist who saw a native holding a coelacanth would merely have perceived him as holding a fish, and that could adequately be understood in terms of the anthropologist's theories about the native culture. But an ichthyologist would have been astounded to discover such a fish long thought to be extinct still alive today.

There are at least three basic types of anomalies of scientific interest. First, there are the accepted anomalies present in every science. As Thomas Kuhn and many others have noted, there are always phenomena that scientists consider legitimate puzzles that need to be solved, pieces that don't fit and are recognized as constituting important problems. Second, there are validated anomalies, those that are unexplained phenomena which may be given rather low priority as problems; these may be seen as scientific curiosities but are not of pressing concern. Finally, there are alleged anomalies, curious phenomena that people claim exist but which have not yet been thoroughly documented or considered validated by the appropriate scientific community. Much of the material collected by anomaly hunters--we will call these anomalists for want of a better term--consists of this type (particularly much of the material collected by Fortean, to be discussed below). Some of the best known anomalies (UFOs, psi phenomena, sasquatches, etc.) are alleged phenomena because most scientists doubt the very existence of the events being claimed.

As one examines the use of the term anomaly in the literature, it soon becomes apparent that the term is not only a relative one but is multidimensional in its meanings; and we would suggest that the term might better be treated as a constructed type, or what has recently been termed a fuzzy set, since the various definitions of anomaly overlap in ways that preclude rigid definition. In its purest--

extreme--form, an anomaly is something that (a) actually occurs (is both perceived and validated), (b) is not explained by an accepted scientific theory, (c) is perceived as something demanding an explanation, and (d) contradicts what one might expect from accepted scientific theory. But most anomalies do not fulfill all these requirements. Instead, anomalies can vary along numerous dimensions including the following: (1) An anomaly may be merely alleged and not validated. (2) An anomaly may be either a variable (a "thing" like a unicorn or a lost continent) or a relationship between variables (a "process" like psi, an astrological force, or a hex). [For explication of these dimensions re crypto and para sciences, see: M. Truzzi, "Dimensions of the Paranormal," The Zetetic (now The Skeptical Inquirer), 1, #2 (1977), 4-8.] (3) An anomaly may merely be strange or astonishing, that is, psychologically surprising, but still explainable by existing accepted theory (e.g., statistically rare but normal events like a solar eclipse or red coming up 28 times in a row at Monte Carlo). (4) An anomaly may have no explanation, that is, fits into no accepted theories, but otherwise causes no special interest since its presence does not contradict any expectations we may have. In addition, anomalies may vary in terms of other dimensions including: (5) being rare versus frequent, (6) being widely versus infrequently seen (e.g., an asteroid may constantly be there but is not frequently seen except by some astronomers with telescopes), (7) being perceived as a natural versus supernatural event, and (8) the degree to which they provoke our astonishment or seem bizarre.

## THE RELIABILITY OF ANOMALY LITERATURE

Anomaly literature has two major problems of which the reader should be aware from the start. The first is essentially literary and is a question of proper writing. The second is more basic and relates to the psychology of anomalous experience. Together they make the journey through the literature on anomalies especially perilous. These problems are (1) the use of sources of information on anomalies and (2) problems with human testimony about strange events. We will deal with each of them in turn.

### The Use of Sources

Many anomaly writers have yet to learn three basic lessons of good historical scholarship: the study of original sources, correct citation, and proper reference to materials used [To affirm our identification with other anomaly researchers, we have violated the third principle in this paper, by abbreviating the citations in our bibliography]. These practices have led to a situation which

often confronted the scholars of the Renaissance in regard to their own anomaly literature: there was an excess of citation compared to real research. It is not unusual to find seventh- or eighth-hand references in books on anomalies. What is worse, the citations will often be incorrect and the sources unidentified. This can and does mean that much of the material that is printed in books on anomalies is worthless.

One example of such a wrong fact is the "Salzburg Steel Cube," supposedly found in a block of coal in Austria in 1885. If, in fact, a carefully machined cube had been found in a piece of coal, its implication of a vanished civilization would be stupendous. The story of this cube, which has probably appeared in dozens of books on anomalies, is, however, wrong. It is not steel, and it is not a cube, nor would it have claimed to be either if the anomalists who wrote about this object bothered either to study the object themselves or to correctly cite the original report, which itself contained enough errors. In spite of the article that has put this myth to rest, we have no doubt that writers of books on anomalies are still churning out nonsense about how such a thing could have been found in a block of coal [Hubert Malthaner, "Not the Salzburg Steel Cube, But an Iron Object from Wolfsegg," Pursuit, 6, #4 October 1973), pp. 90-93]. The reason for such carelessness is simple: it is easier to cite someone else's report, perhaps embellish it, than it is to do original research. One can further speculate that the effect that the current market for anomaly literature is having will be to increase such behavior [Other examples of careless citation are pointed out by Samuel Rosenberg, "UFOs in History," in University of Colorado, Scientific Study of Unidentified Flying Objects (New York: Bantam, 1969), pp. 481-502. Although one may disagree with the validity of the author's conclusions about historical UFOs, this does not affect his observations about the anomaly literature.]

Anomaly authors cannot even be expected to cite correctly from their own works. Ivan Sanderson, in one of his later books [Invisible Residents (New York: World, 1970) at 169] suggests that his own river dredging in Africa turned up a sting ray that the local inhabitants knew nothing about. On the other hand, if one goes back to the work (written by Sanderson) which he cites [Animal Treasure (New York: Viking, 1937) at 250], one finds that it was the local inhabitants who brought the ray to Sanderson; and there is no indication that they had no previous knowledge of it. This, admittedly, is a minor matter, but it shows the danger of depending on memory, as opposed to a careful re-reading of the original sources, even if one has written them.

Lack of proper citation also helps to create mysteries where there are none. As in the case of the "steel cube," inadequate exposition of the original facts creates a greater need for explanation than in fact exists. One example is found in Erich von Daeniken's Chariots of the Gods? [New York: Bantam, 1971, pp. 90-92] where he discusses the large statues found on Eastern Island. Von Daeniken cannot understand how the small population of the island would have been sufficient



to raise the statues or cut them from their original quarries. However, Thor Heyerdahl in his book Aku-Aku [New York: Pocket Books, 1960]-- which von Daeniken cites--had already showed how both operations had been done. In fact, there were still natives on the island who were familiar with both processes! But somehow von Daeniken did not see fit to mention this: an inexcusable mystification [Von Daeniken has been justly (but insufficiently) chastised in a collective work edited by Barry Thiering and Edgar Castle, Some Trust in Chariots (New York: Popular Library, 1972)]. Such ignoring of relevant recent findings is unfortunately all too typical of this literature.

One of the favorite ploys of some anomalists is to write without footnotes. This lowers printing costs, saves time, and drives serious scholars crazy. Its effect is to make it impossible to confirm or disconfirm "facts" which are alleged in the text. It allows serious inaccuracies to go uncorrected, and facts which would often be useful to follow up remain untraceable to scholars who are specialists in the area! One of the worst offenders in this respect is Pauwels and Bergier's The Morning of the Magicians, which achieved a success abroad comparable to Chariots of the Gods here [Louis Pauwels and Jacques Bergier, The Morning of the Magicians (New York: Avon, 1968); first published in Paris in 1960. None of the original errors have been corrected, in spite of the appearance of a book by Union Rationaliste entitled "The Twilight of the Magicians" (Le Crépuscule des Magiciens: Le Réalisme Fantastique Contre la Culture. Paris: Editions Rationalistes, 1965)]. Probably other compilations of the incredible have borrowed considerably from it, as it has borrowed from others.

Another favorite device is the exciting and mysterious generalization which appears without reference to any of the evidence on which it has been based. John Keel is a master of this technique, which robs many of his works of a scholarly interest that they otherwise might merit. For instance, in The Eighth Tower [New York: Dutton, 1975, pp. 95-96], he states, "...witnesses, particularly monster witnesses, often die within six months to two years....Unfortunately I have never had the time to properly catalog such cases and prepare the necessary statistical breakdowns to confirm or deny this speculation." A stunning finding if it is true, but how can one know? Unfortunately, it is all too common that anomaly writers do not take the time to do statistical compilations, background research, or checking of the original sources.

One very useful check against the excesses of anomaly writers stems from the "dirty linen principle." Contrary to what one might expect, a good deal of anomaly periodical literature is concerned with criticism of the writings of others. Frequently one finds that writer X is criticised by writer Y in journal Z, while the reverse is performed by X in journal A. The information that emerges from such public washing of dirty linen is often of considerable value, particularly in the revelation of missing information and hoaxes. The reader with an interest in a certain book is well-advised to check reviews of that book in anomaly periodicals which are not edited by the writers friends. Critical insiders can thus provide insights which may not be available to those who are not actively involved in anomaly research.

Degrees and academic credentials should also be treated with

caution. In the first place, it is well to remember that some academic degrees come from Harvard and Berkeley and some come from mail-order universities. A Ph.D. is not a fixed quantity. Even in the case of persons with valid scientific credentials, however, one must be wary. There is still the question of bearing of the person's academic training on the subject-matter at hand.

In one of his books the late George Sarton observed that scientists, in writing about the history of science, often fail to observe the same standards of rigor in their historical work which they consistently apply to their scientific work. The same is often true about highly-credentialed academics in relation to doing anomaly research. The work is frequently simply not taken seriously but is regarded as a diversion or hobby. It has already been noted [R. Westrum, "Scientists as Experts: Observations on 'Objections to Astrology,'" The Zetetic, 1, #1 (1976), 34-46.] that many of the 186 scientific experts who signed the "Objections to Astrology" statement did not do their homework before affixing their names. Many of them were probably unaware of the large body of empirical studies in astrology on which their statement bore [see this issue of ZS for a bibliography], and probably many would not feel that this work merited their attention even if they did know. This kind of casual attitude is inimical to good scholarship. It is generally true that those with higher credentials tend to write better books about anomalies, but one should always ask one's self two questions about the writings of the trained scholar: (1) Has the writer done his homework? and (2) Are the same standards of rigor which pertain to the person's academic work applied to his work on anomalies?

### The Psychology of Anomalous Experience

In the previous section we dealt with problems in writing about anomalies. But it must also be evident that a basic problem exists regarding the persons who report anomalies. Most anomaly reports come from persons who do not have extensive scientific training, but even if they did there would still remain the basic problem of forensic psychology: To what degree can human testimony be relied upon? This basic question breaks down into three smaller ones which relate to who can be relied upon, under what conditions they can be relied upon, and what aspects of their testimony one should trust. We will not attempt to answer any of these questions here, but we do wish to indicate some literature which has a bearing on this basic concern.

To begin with, there are the basic works on forensic psychology. The early (1915) work by Hugo Muensterberg On the Witness Stand is still worth consulting. Far more scholarly are two works by French authors, Julien Varendonck La Psychologie du Témoignage (1914) and the classic La Critique du Témoignage by Francois Gorphe (1934). The most useful recent work is Arne Trankell, The Reliability of Evidence (1972). Some other sources include: Fabian Rouke, "Psychological Research on Problems of Testimony," Journal of Social Issues 13 #2 (1957), 50-59; James Marshall, Law and Psychology in Conflict (1969); Robert Buckhout, "Eyewitness Testimony," Scientific American, 231 #6 (December 1974), 23-31; and F.C. Bartlett, Remembering (1932).

There are also works which relate more specifically to the problem of anomaly observation. We have already mentioned Graham Reed's The Psychology of Anomalous Experience which bears a tantalizing title but deals largely with the problems of hallucination; one looks in vain for a discussion of how people perceive real anomalous objects. Since anomalous experiences tend to be both unexpected and transient, they share some common characteristics with observations of air crashes and meteors. On observations of air crashes, see Stephen Barlay, Aircrash Detective, (1969), particularly the chapter entitled "What They Thought They Saw." On meteor observations, see the following: H.H. Nininger, "What Constitutes Reliable Data Regarding Meteors and Fireballs?" Popular Astronomy 41, 367-370; the same author's Find a Falling Star (1972), pp. 76 & 190; C.C. Wylie, "Psychological Errors in Meteor Work," Popular Astronomy 47, 206-209; and William Hartmann, "Processes of Perception, Conception, and Reporting," in University of Colorado, Scientific Study of Unidentified Flying Objects (1968). Also see this last paper for additional references.

Related problems are discussed in Jerome Bruner, "On Perceptual Readiness," (Psychological Review, 64, 123-152) and Hadley Cantril's Invasion From Mars (1966); in the latter, see his discussion of "critical ability in various places." A discussion of UFO experiences is contained in R. Westrum, "Science and Social Intelligence About Anomalies: The Case of UFOs," Social Studies of Science, 7, #3 (1977), 271-302; and a similar discussion of sea-serpent sightings can be found in his "Knowledge About Sea-Serpents," in Roy Wallis, editor, Rejected Knowledge, a special issue of Sociological Review Monographs (forthcoming). A much more extensive treatment of the issues involved in perception of UFOs will be contained in articles by Westrum and Roger Shepard in the forthcoming volume edited by Richard Haines, UFOs and the Behavioral Scientist. See also: Richard Haines, A.P.R.O. Bulletin: July/August 1974, pp. 7-8; November/December 1974, pp. 7-9; May 1975, pp. 4-6; October 1975, p. 6; and April 1975, pp. 5-6. This series of articles concerns various optical aspects of UFO sightings. Similarly, see R. Westrum, "Eyewitness Testimony and Its Problems in UFO Investigation," A.P.R.O. Bulletin, August 1977, pp. 6-8.

Finally, two papers on the problem of communicating unusual experiences should be mentioned: Leonard Schatzman and Anselm Strauss, "Social Class and Modes of Communication," American Journal of Sociology, 60 (1954), 329-338; and Jeff Coulter, "Perceptual Accounts and Interpretive Asymmetries," Sociology 9 #3 (1975), 385-396.

#### A BASIC BIBLIOGRAPHY ON ANOMALIES

The literature on anomalies is vast, and it would be impossible to give a reasonably comprehensive bibliography without writing a long monograph. Our attempt here will be to treat those works which offer either a synoptic treatment of whole fields or whose importance is such that they cannot be omitted. We will begin by introducing four writers who have done the most to publicize anomaly research. We will then

proceed to a consider the general sources on anomalies.

Reasons of time have made this bibliography shorter than it would otherwise have been. we have given generally only the first publication date of each work, and have left off the place and agent of publication. Very often more recent editions are available, and the person interested in purchase should consult the American and British versions of Books in Print to find who the current publishers are. Where a book was privately published, we have tried to indicate from whom it may be obtained. We have tried to include all the critical works in the area, but omissions are inevitable, and should not necessarily be taken as prejudicial.

#### Four Major Anomalists

(1) Charles Hoy Fort (1874-1932), an independently wealthy writer, essentially created the foundation on which modern anomaly research rests. Culling from magazines, newspapers, and above all scientific journals, Fort collected and categorized a mass of narratives of incredible events. He published this collection in four books, The Book of the Damned (1919), New Lands (1923), Lo! (1931), and Wild Talents (1932). These four works were united in a book edited by Tiffany Thayer, The Books of Charles Fort (1941). Fort accompanied his compilations with theories that were as bizarre as the events he reported. An excellent biography is Damon Knight's Charles Fort: Prophet of the Unexplained (1970) which includes some interesting analysis of Fort's data as well. An interesting critical essay on Fort is Sam Moskowitz's "Lo! The Poor Fortean," reprinted in his book Strange Horizons (1976). For a recent computer analysis of Fortean data including that from Fort's books as well as other sources, see: Michael A. Persinger and Gyslaine F. Lafreniere, Space-Time Transients and Unusual Events (1977) reviewed in this issue of ZS.

(2) Rupert Thomas Gould (1890-1948), after his retirement from active duty in the British Navy, wrote a series of books of excellent quality, some of them dealing with anomalies. His vast knowledge, scholarly precision, and concise style make his works easily the most readable in this area. He wrote three collections, Oddities (1928), Enigmas (1929), and The Stargazer Talks (1944), all of which have recently been reprinted. His The Case for the Sea-Serpent (1930) and the Loch Ness Monster (1934) are both classics for their respective subjects even though more complete works now exist.

(3) Ivan Terrence Sanderson (1911-1973) was a maverick naturalist and writer, who turned increasingly toward research on anomalies toward the end of his life. Of his two dozen books, many deal with anomalies. Most important of these is Abominable Snowmen: Legend Come to Life (1961), which early called attention to hypothetical hominids. Though Sanderson too frequently succumbed to the temptation to mystify or sensationalize, all of his books make interesting reading. His two books on UFOs, Uninvited Visitors (1967) and Invisible Residents (1970) and his three collections, Things (1967), More Things (1969), and Investigating the Unexplained (1972) remain provocative. He also edited the Fortean journal Pursuit for many years (described below).



(4) Bernard Heuvelmans (1916- ), who has a doctorate in zoology, has been an author and translator on many scientific subjects. His book, Sur la Piste des Bêtes Ignorées (1955) [translated in 1959 as On the Track of Unknown Animals (1959)], was a survey of diverse creatures whose existence is still controversial. This was quickly followed by a work on giant cephalopods (Dans le Sillage des Monstres Marins I: Le Kraken et le Poulpe Colossal, 1958) and the sea-serpent (Le Grand Serpent-de-Mer, 1965). Some of the former and most of the latter were translated as In the Wake of the Sea-Serpents (1968), and a new French edition of the sea-serpent book appeared in 1975. In addition to being the definitive work on the subject, Heuvelmans' book on the sea-serpent is a work of enormous erudition, containing in the American edition a bibliography of thirty pages in small print. Heuvelmans' scholarship is excellent, and his work is especially commendable in that he tends to correct errors made in earlier editions in later ones, as well as adding new data to later editions. His most recent work is a joint publication with Boris Porchnev on anomalous hominids, and particularly on a purported "abominable snowman" enclosed in a block of ice, which Heuvelmans argues to be the carcass of a Neanderthal man (L'Homme de Neanderthal Est Toujours Vivant, 1974). He is currently producing a multiple volume series on anomalous animals the first volume of which will be The Last Dragons of Africa.

#### General Works on Anomalies

The most interesting development in recent years is the compilation by William Corliss of his Source-books on various anomalous subjects. Several loose-leaf notebook volumes have already appeared on Strange Phenomena (both 1974), Strange Artifacts (1974 & 1976), Strange Universe (1975 & 1977), Strange Planet (1975 & 1978), Strange Life (1976) and Strange Minds (1976). In addition, Corliss has also issued the first two in a series of hardbound volumes: Handbook of Unusual Natural Phenomena (1977) and Ancient Man: A Handbook of Puzzling Artifacts (1978). Largely compiled from scientific journals, these writings are invaluable to anomalists in their respective areas. (Corliss' address: Box 107; Glen Arm, Maryland 21057).

An older book that recommends itself to the student of anomalies is Charles Gould, Mythical Monsters (1886); its introduction contains some very interesting remarks about belief and non-belief in anomalous events. Willy Ley's Exotic Zoology (1959), a re-edited version of three earlier books, is excellent; it covers much of the same ground as Heuvelmans, but has considerable supplementary information. Finally, some of the monsters literature is reviewed in: R. Westrum, "A Note on Monsters," Journal of Popular Culture, 8, #6 (1975), 862-870.

There are dozens of specialized journals on specific anomalies such as UFOs, standing stones, antiquities, etc., simply too numerous for us to list here. But attention should be called to a number of journals and newsletters featuring articles and book reviews on general anomalies:

- (1) Pursuit: The Journal of the Society for the Investigation of the Unexplained, a quarterly founded by Ivan T. Sanderson and now headed by Robert C. Warth. (Address: R.F.D. 5; Gales Ferry, CT 06335).
- (2) INFO Journal, a quarterly published by the International Fortean Society, today edited by Richard Hall. (Address: 7317 Baltimore Ave.; College Park, MD 20740).
- (3) Fortean Times, a quarterly affiliated with the above societies but an independent quarterly edited by Robert J.M. Rickard. (Address: Box 152; London N10 1EP, England)
- (4) Chaos: The Review of the Damned, eight issues per annum published by the Res Bureaux and produced by Mr. X (his legal name). (Address: Box 1598; Kingston, Ontario K7L 5C8, Canada)
- (5) ARB (Anomaly Research Bulletin), a quarterly produced by David Fiedeler. (Address: 7098 Edinburg; Lambertville, MI 48144)
- (6) Res Bureaux Bulletin, issued triweekly by Mr. X. (Same address as Chaos above).
- (7) Watsup Journal, published by the Wessex Association for the Study of Unexplained Phenomena and edited by Nick Maloret. (Address: 180 Locksway Road, Milton, Portsmouth, England).
- (8) Vestigia Newsletter, published by Vestigia and edited by Gary Szełc. (Address: R.D. 2 Brookwood Road; Stanhope, NJ 07874)
- (9) Lantern, published quarterly by the Borderline Science Investigation Group and edited by I. Bunn. (Address: 3 Dunwich Way; Coulton Broad Lowestoft; Suffolk NR 32 4RZ, England).
- (10) Mpossibilities, irregularly published newsletter of the Fortean Mysteries SIG of Mensa, Ltd., and edited by Michael Hal, (Address: 620 9th Ave. N.; Apt. 12; Fargo, ND 58102)
- (11) Forteana, a Danish newspaper published in Danish by the Scandinavian Fortean Organization (SCANFO) and edited by Peter J. Svendsen. (Address: Classensgade 8; DK-2100 København Ø, Denmark)

The above sources contain not only data and articles but frequently include references and bibliography for special topics and usually list new anomaly publications as they emerge. Finally, for bibliographies on specific anomaly topics, see this and future issues of the Zetetic Scholar.



SCIENTIFIC STUDIES OF CLASSICAL ASTROLOGY  
COMPILED BY MARCELLO TRUZZI

*"Those who wish to believe in astrology should realize that there is no scientific foundation for its tenets...It is simply a mistake to imagine that the forces exerted by stars and planets at the moments of birth can in any way shape our future...[T]here is no verified scientific basis for their beliefs, and indeed...there is strong evidence to the contrary."*

--"Objections to Astrology: A Statement by 186 Leading Scientists," The Humanist, Sept./Oct. 1975.

*"I find myself unable to endorse the 'Objections to Astrology' statement--not because I feel that astrology has any validity whatever, but because I felt and still feel that the tone of the statement is authoritarian...Statements contradicting borderline folly or pseudoscience that appear to have an authoritarian tone can do more damage than good. They never convince those who are flirting with pseudoscience but merely seem to confirm their impression that scientists are rigid and closed-minded. In my view there is no way to approach such subjects except substantively."*

--Carl Sagan, "Letter," The Humanist, Jan./Feb. 1976.

A WORD OF EXPLANATION

The scientific (and protoscientific) literature on astrology is unfortunately scattered widely, and most studies claiming positive results can only be found in difficult to obtain astrological periodicals unavailable through most libraries. Beginning with a preliminary bibliography, I sent my lists to 20 specialists (both proponents and critics) to help me enlarge and correct it. I received much cooperation and would particularly like to acknowledge the help of Malcolm Dean, Francis Fullam, Curtis Fuller, Michel Gauquelin, Joyce Greer, Charles Jayne, J. Gordon Melton, & Al H. Morrison. Other studies were suggested for inclusion which, in my judgement, were not truly relevant to classical astrology but were more related to neo-astrology, sometimes called astrobiology, cosmobiology or cosmoeology. I hope to include these and other such items in a separate bibliography now being prepared for a future issue of ZETETIC SCHOLAR. I have tried to concentrate on strictly scientific and science-relevant articles and have thus excluded a vast literature on the history of astrology, bibliographies of which are readily available elsewhere. Some of my choices for inclusion are debatable, and the listing is not exhaustive. The scientific

quality of the items is also very uneven, but I thought it best to let the reader decide those questions at this early point in any evaluation of the literature.

After this project was initiated, I was made aware of the recently published critical analysis of empirical studies of astrology by Geoffrey Dean and Arthur Mather in their book Recent Advances in Natal Astrology: A Critical Review 1900-1976. This remarkable volume will be the subject of a special review symposium scheduled for the next issue of ZETETIC SCHOLAR.

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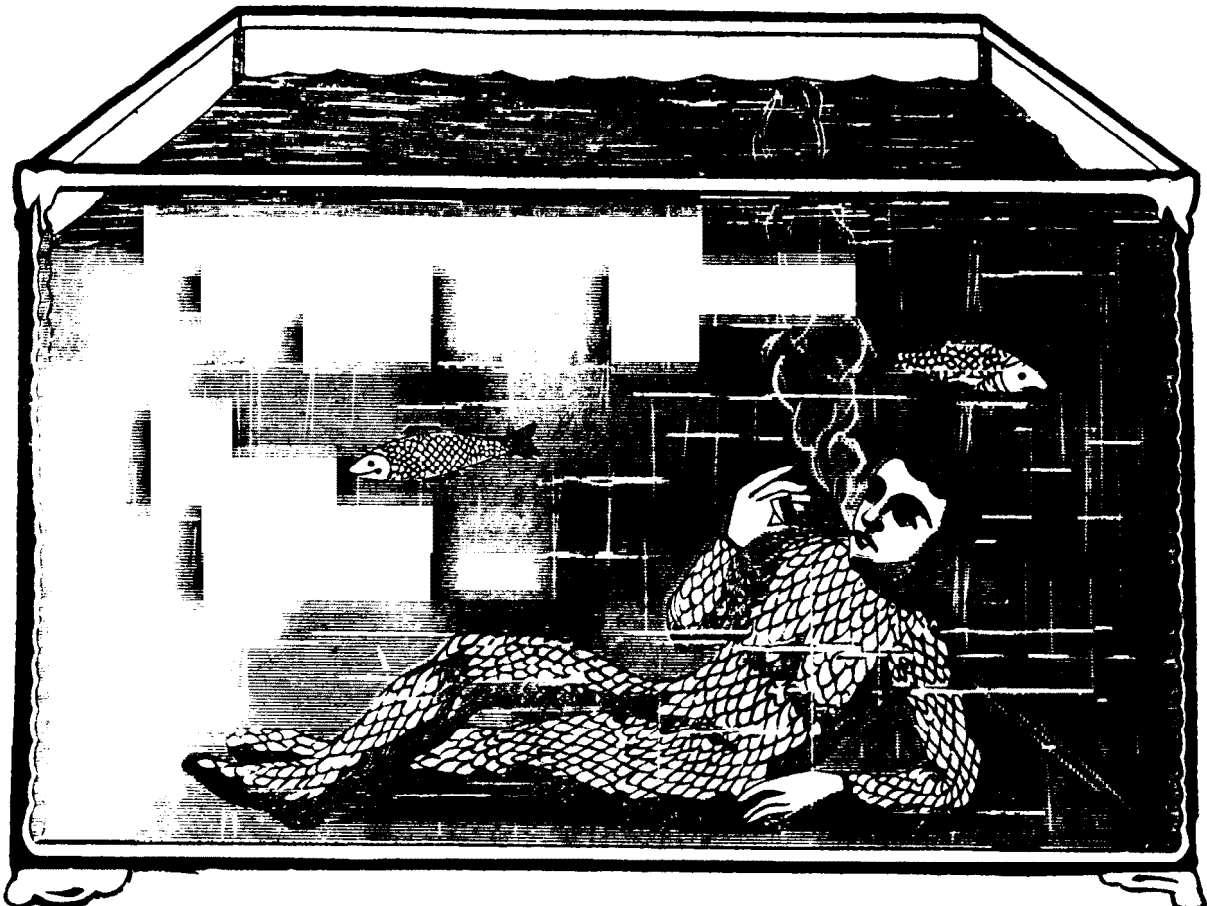
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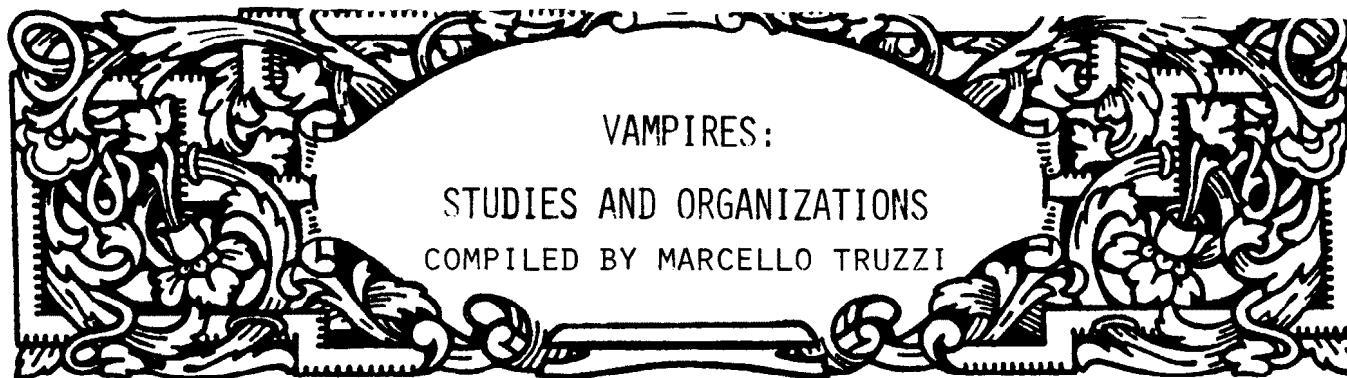


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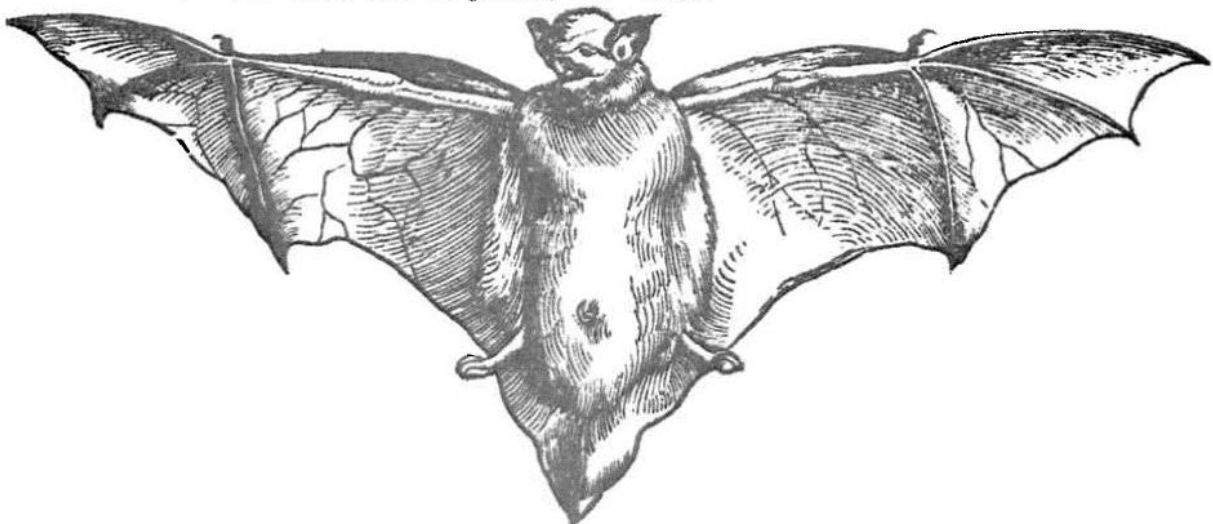
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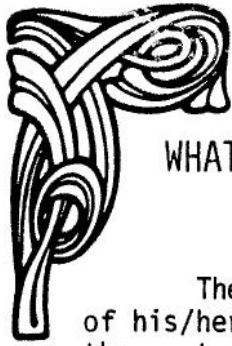
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#### ORGANIZATIONS:

1. The Vampire Studies Society. Publishes the quarterly Journal of Vampirism, edited by Martin V. Riccardo. Address: P.O. Box 205; Oak Lawn, IL 60454. Highly recommended for serious students of the vampire legend, its literature, psychology, etc.
2. Vampire Research Center of America. Director: Stephen Kaplan. Address: 76-03 445th Ave.; Elmhurst, Queens, NY 11373.
3. The Dracula Society. Founded by Bernard Davies and Bruce Wrightman, this organization memorializes Bram Stoker and his creation and maintains a Dracula Archives. Address: 31 Cambridge Gardens; London W10, England.
4. The Count Dracula Society. Founded by Donald S. Reed, this organization is primarily devoted to horror films and Gothic literature. Presents the Mrs. Ann Radcliffe Awards annually. Address: 334 West 54th St.; Los Angeles, CA 90037





## WHAT FACTORS CAN ACCOUNT FOR UFO EXPERIENCES?

MICHAEL A. PERSINGER

The proficient scientist attempts to recognize the limitations of his/her measurement devices and attempts to obviate or attenuate the contribution of measurement artifacts. The behavioral scientists' primary measure of many environmental events is some aspect of human verbal behavior, including the display of private responses traditionally called "thoughts" or "experiences" (1). Verbal behaviors appear relatively reliable in situations that are frequent or well defined; these responses can be verified independently or repeated under controlled conditions. On the other hand, behavioral scientists have learned to suspect verbal behaviors about unusual or strange experiences associated with novel, death-related, unexpected or infrequent events. Following these situations, human measurements, such as "memory" become markedly inaccurate.

Perhaps one of the most common forms of verbal reports concerning unusual experiences involves ostensible column-like or spheroid-like luminous displays that appear to employ mechanisms not known to date (2). Such luminous displays have been reported by many cultures in time and space; many individuals from these cultures have reported the bizarre consequences of close proximity to these phenomena. However, due to culture-specific language and perceptual transform differences, many detailed similarities among the reports may have been masked. Whereas one culture may label the phenomenon a "dragon," another may identify it as a religious event while still another might call it a "flying saucer."

The recall of such events by individuals who have approached very close to these phenomena would be contaminated by at least two factors: (a) the implicit chains associated with the verbal label used to describe the events, and (b) the direct physical effect of the event upon the human organism. Thus in the first instance, the pairing of the verbal label "UFO" with the initially neutral observation of a round light stimulus could result in the recall of the event confounded by other previous associations, such as "extraterrestrial aliens," paired with that label. These associations could be acquired through incidental learning over various news media or simply by the repeated use of the words "UFO," "aliens" and "flying saucer" within the same news articles.

Since memory is the primary measurement by which human beings measure their behavior and the environment, changes in memory due to these implicit chains may not be detected directly by the person (especially if he/she is the only reference). He/she actually may not realize that the "memory" of the initial event's details has been changing over time as a function of the new information paired with the label "UFO" since the event (3). The person might report "suddenly remembering new facts previously forgotten" as a consequence but rationalize their occurrence as the result of less repression, for example.

A more cumbersome methodological problem would involve a factor that directly influenced the primary correlate of "thinking" behaviors: the nervous system. Within the nervous system, such a stimulus could produce alterations that would appear odd, bizarre, and unusual but nonetheless real to the person. Since the stimulus would have altered the actual evaluation/labelling processes, neither regression hypnosis, nor polygraphic measures, nor sincere testimonials could adequately retrieve the actual sequence of events.

Considering the historical and global nature of luminous displays and the odd human behaviors following close proximity to these displays, such a stimulus should involve some fundamental and common process. In context of the general progression in the history of science to establish infrequent and unpredictable (and hence anxiety-provoking) events as manifestations of natural processes (e.g., St. Elmos' fire or ball lightning), such a stimulus would be a phenomenon involving known or derivable physical principles. Its unusual nature would be a consequence of the context in which it is perceived and the unusual geometric form in which it is displayed.

Our interpretation of available data indicates that there exists and has existed an infrequent, natural phenomenon that appears correlated with geophysical processes involved with tectonic strain and strain release. Behavioral scientists often forget or do not realize that the human species exists upon an extremely thin semi-stable surface beneath which mammoth reactions and processes are constantly in progress. While some of these forces are relatively homogeneous over large areas and for long durations of time, such as the geomagnetic field, some are manifested upon the surface for brief, violent periods, such as earthquakes.

The phenomenon in question, which can be conceptualized for simplicity as an electromagnetic column, appears to be an extremely localized (within 100 m) and very short-lived (a few minutes/episode) surface manifestation of tectonic pressures. These columns, whose shape, size and direction would be determined by subsurface tectonic architecture and dynamics, would display markedly enhanced electromagnetic characteristics. Conceptually, the idea of enormously enhanced physical properties in highly localized geometries within a much larger volume is not new; one example is the hydrophobic pockets in an apparently homogeneous glass of protein-water (4). In principle, the electromagnetic columns would be little different from the myriad of displays labelled "luminous masses," "pillars of fire," "luminous wheels," "trumpet-shaped glows," or "chains of glowing spheroids" that have been reported before or during some earthquakes for centuries (2,4). In particular, the columns would be consequences of tectonic pressures in prone areas that reach sufficient levels to produce the phenomena but without blatant seismic occurrences.

The properties of these columns would be predictable from known principles of physics. Since tectonic pressures are considered the primary contributor to the formation and the localized geometries of the column, one would expect a high correlation between reports of luminous displays and the seismic history of the area, if analysis intervals are taken, for example, over decades. Locally, the lu-

minosity should follow pathways of normal stress release, such as fault lines and their correlations, e.g., river beds. Manifestations of the luminosities should appear on the edges or tops of buildings, hills, and cliffs. The complex movement of the luminosities should be determined by the vectorial changes in the three dimensional subsurface pressures of strain release. Changes in or failures of radio transmission, electrical appliances and compasses should be reported proximal to the phenomenon. Other predictions have been discussed in length elsewhere (4,5).

The human being is a biological system characterized by a complex of weak electric and magnetic fields. Consequently, the approach of a highly intense electromagnetic field column would have both direct and indirect effects. Indirect influence would involve primarily visual and emotional features. For example, as the field values fell beneath luminogenic potentials, the "UFO" might "suddenly disappear" only to "reappear" somewhere else once the field potentials again achieved criterion levels. The effects of such unusual stimuli upon emotional behavior would be significant. No doubt the kinetics of the phenomenon would be interpreted within an anthropomorphic format. Approach of the luminosity might be interpreted as "attack" while stable discharge over a given area might be described as "surveillance activity."

Direct effects could be more severe. Close proximity ("encounters") to the field could evoke "tingling sensations," "apprehension," piloerection, and other unusual subjective behaviors associated with high intensity electrostatic columns. Movement of the field towards the observer or of the human observer towards the column could induce currents sufficient to produce paralysis or unconsciousness; such experiences have been reported in the laboratory situation with direct current induction. The stimulation of the electrically unstable portions of the brain, such as the hippocampal formation, could allow the person access to rich imagery of epileptic, aura-like form. Such imagery could be intense and indistinguishable from "reality." Amnesia following the electric shock-induced alteration in consciousness could allow confabulation characterized by the person's beliefs and fantasies.

Direct exposure to more intense ionizing radiation associated with the luminogenic potentials should be followed hours to days later by symptoms of erythema, edema, temporary blindness, nausea, malaise, sleep difficulties and endocrine disturbances. Since ordinary electromagnetic processes are involved, the occasional death following too extreme an encounter with the phenomenon should occur. The symptoms peripherally would be similar to electrocution from a lightning strike.

At present, this explanation of the stimulus source for at least some close encounter cases may not appear credible. However in the history of science, many odd and infrequent (and hence difficult to systematically measure) natural phenomena have been grossly misinterpreted by the labels and beliefs of the day. At one time, ball lightning was considered the occurrence of disembodied spirits and solar eclipse were described as the consequences of angry gods.

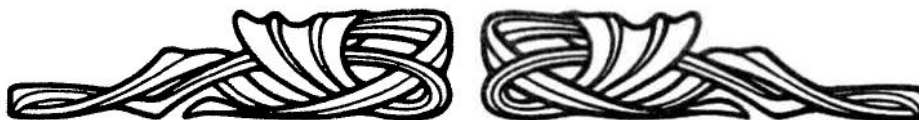


Within the comfortable framework of an ad hoc perspective, these explanations seem absurd, now.

Suppose, two thousand years ago, before the nature of lightning was understood, a man saw a dark cloud appear above the top of a high hill and ran up to greet it. Upon reaching the top, he was struck down and when he awoke reported the beliefs of the day - that he had been lifted in a dream-like, floating manner to Mt. Olympus. You apply your techniques of cross-examination, autonomic measurement and hypnosis but the person's story remains unchanged; he appears to be telling "the truth". Would you conclude that this man had been to Mt. Olympus and that what he said was veridical because he was not "lying"? Or would you conclude that this man, an organic semi-conductor, foolishly moved to the apex of the hill and precipitated the discharge between the cloud and the hill. This discharge was electroconvulsive-like in nature and depolarized large areas of his brain. When he awoke a few minutes later, stiff and burned, the memory of the event was confounded by confabulation and fantasy. Which mechanism would you pursue?

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## PRESCRIPTIVE EPISTEMIC ETHICS

W. TEED ROCKWELL

This paper is an attempt to define, and explain, the necessity for Prescriptive Epistemic Ethics. By Epistemic Ethics, I mean a set of maxims which purport to give knowledge to whomever follows them. (To those who are not philosophically trained: "epistemic" is the adjective used by philosophers to refer to anything that relates to knowledge or the enterprise of obtaining knowledge.) There is a set of maxims accepted as epistemic ethics by those of us who have faith in Science's ability to give knowledge: this set of maxims is called the Scientific Method. Examples of such maxims are: "conclusions should be based on statistically significant data," and "experimenter influence should be minimized through double-blind procedures."

A man who calls himself a scientist has, I believe, a moral obligation to adhere to the Scientific Method as closely as he possibly can, or he is guilty of a kind of fraud. Similarly, a man who calls himself a baker has a moral obligation, not only to refrain from cheating his customers, but also to make the best bread it is in his power to make. Formulated as a generality: Each person has a moral obligation to do whatever he has decided to do as conscientiously as he possibly can. I offer no defense for my claim that this is a moral principle, but it strikes me deeply as being true; and I think it likely that if my readers ponder this claim for a while, it will also strike many of them as being true. (I do not believe that it is possible to formulate ethical principles that will be acceptable to all rational beings. Many of my readers will probably disagree with me on this point, and I can't help pointing out that the fact that we are in disagreement strengthens my case and weakens theirs.)

It is because I think that a person who has decided to be a scientist has a moral obligation to follow the Scientific Method that I use the term "Epistemic Ethics" to describe that set of maxims which a scientist must follow if he is to be scientific (or, perhaps more accurately: which a person must follow if he is to be a scientist).

Although this name for them may be new, questions of epistemic ethics are not new to the philosophy of science. But in all cases that I am familiar with, philosophers of science have limited themselves to doing descriptive epistemic ethics, i.e., they have claimed to be merely describing the maxims that scientists actually follow. What I am advocating in this paper is the need for prescriptive epistemic ethics, i.e., proposals that prescribe the maxims that scientists ought to follow.

It is not difficult to see why modern philosophers have shied away from prescriptive philosophy of any sort and instead have stuck exclusively with descriptive philosophy. Descriptive philosophy always has a body of facts that it must unify: principles of descriptive ethics must be able to explain why we in fact judge certain actions to be immoral; principles of descriptive philosophy of science must be able to

explain why scientists in fact behave the way they do. This gives descriptive philosophy the same basic criterion as that of the sciences for determining whether it is doing its job properly. This criterion is: Can it unify the facts? The only difference between science and philosophy on this point is the slippery and ambiguous nature of the facts that philosophy must unify.

Science has had more success than any other enterprise in human history in providing consistent and precise explanations for why the world behaves the way it does. It is understandable that philosophy would try to approximate the methods of science as closely as the slippery nature of its subject matter would permit.

Prescriptive philosophy, however, is not concerned with explaining and unifying what is in fact the case. Its job is to discover what ought to be the case. Prescriptive epistemic ethics would not try to explain what scientific method scientists in fact use, but rather what method they ought to use. And if this is your subject matter, it does you no good to attempt to approximate the methods of science, for science can only study what is, not what ought to be. Our methods for discovering what ought to be are very different from the Scientific Method, and far less reliable. One way to be sure that an "ought" will be accepted with the kind of unanimity granted to a scientific fact is to walk down from Mt. Sinai with the "ought" engraved on a stone tablet of some sort. The only other alternative is to appeal to your listener's intuitions -- to his sense of "right and wrong" or "scientific and unscientific." This, however, always leads us into a swamp of subjectivity and conflict, from which there is never any real escape.

Descriptive epistemic ethics avoids this problem by basing its maxims entirely on how scientists do in fact behave. In other words, it derives an "ought" from an "is" by assuming that the way science is behaving is the way it ought to behave. But this assumption produces results only if all scientists are in agreement as to who is behaving scientifically and who isn't. When the scientific community is embroiled in a controversy over this very issue, that controversy cannot be resolved descriptively. Descriptive methods are useless when the question at issue is "Whose behavior can be described as epistemically ethical?" If we all agree on who can be described as a good scientist, then we can formulate a concept of good science by purely descriptive means. The behavior of good scientists would provide us with a body of facts which it would be our task to unify. We could remain comfortably in the world of the factual, and avoid the messy, ambiguous world of the evaluative. But if we cannot agree on whose behavior can be described as epistemically ethical, we must settle our disagreement by prescriptions which evaluate scientific behavior and prescribe new maxims to improve it.

I think that the scientific community is in deep disagreement on questions of epistemic ethics, and I think this disagreement can be legitimately labeled a crisis. I am now going to try to describe this crisis a bit more specifically. I will formulate two different descriptions of this crisis which are designed to capture the flavor of the rhetoric which is used by the two opposing sides. This crisis is

most frequently described as either:

1. The recent discovery of large numbers of facts, many of which are scrupulously researched and documented, which are being ignored (and sometimes repressed) by the Scientific Establishment.

or:

2. The recent upsurge of large numbers of kooks and pseudoscientists, who are making extravagant and impossible claims which are being believed by the general public despite the disapproval of all qualified scientists.

I have no intention of naming any specific facts or kooks in these descriptions because I do not want to give anyone the impression that this paper is either defending or attacking any particular scientific movement or body of research. I am merely claiming that all who agree that either of these descriptions is fairly accurate will have to agree that Science is in a crisis of some sort, although they will probably not agree on anything else. And the fact that they don't agree on how to characterize the researchers and the research which are the subject of this controversy shows that the crisis is basically a dispute over epistemic ethics. The heart of the controversy is: are these researchers scientists or only would-be scientists? Are they doing what they ought to to justify their claim to being scientific? And conversely: is it scientific to deny the admission of these newcomers to the scientific Pantheon? By doing so, are the established scientists preserving the purity of science, or are they hindering its growth? If we were to answer these questions purely descriptively, we would have to say: "The established scientists are scientists by definition, and they are behaving this way. Therefore, such behavior must be scientific. Conversely, the newcomers are not scientists, so their behavior must be unscientific." But surely even the most hidebound establishmentarian can see that this answer begs the question.

So describing is not enough; we must prescribe, and base our prescriptions on our intuitions of what it means to be scientific. Of course, we do not rely merely on mystical flashes of insight. Our intuitions of what it means to be scientific do not derive from some mysterious "inner light"; they are based on our knowledge of the great science of the past and present. Any prescriptive epistemic ethics will have to argue its case by making reference to already existing science and showing what scientific work best exemplifies its principles. But it will not be concerned with developing principles that explain the behavior of all scientists; nor will it be a legitimate objection to any proposed principles to point out cases where scientists did not follow them. Epistemic ethics explains how scientists ought to behave, and scientists, like all men, do not always behave as they ought. When we choose which examples of scientific work do exemplify the principles of good science, and when we try to articulate how and why they exemplify those principles, we can rely only on our own intuitions and the intuitions of those thinkers whom we engage in dialogue.

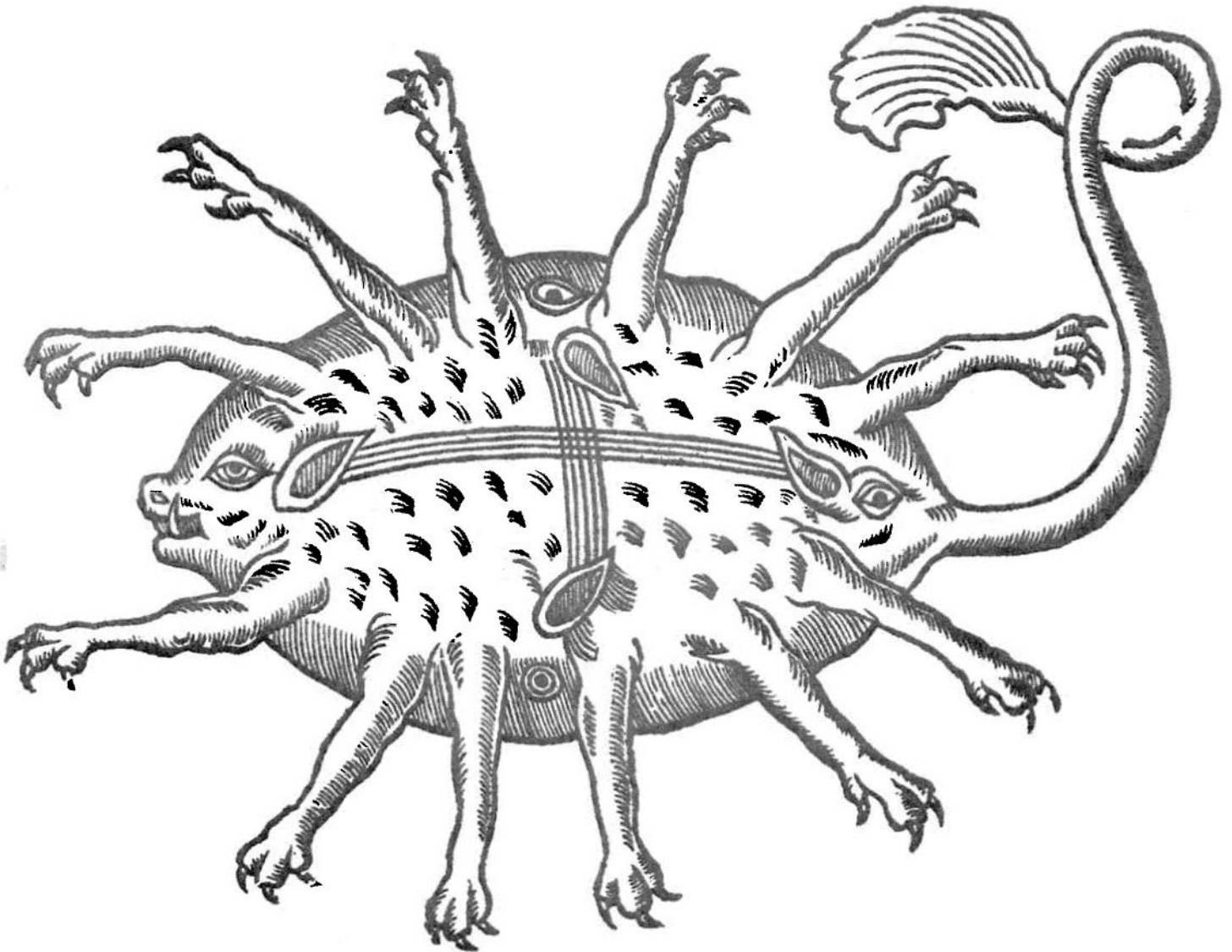
This paper might seem to be the opening gambit of such a

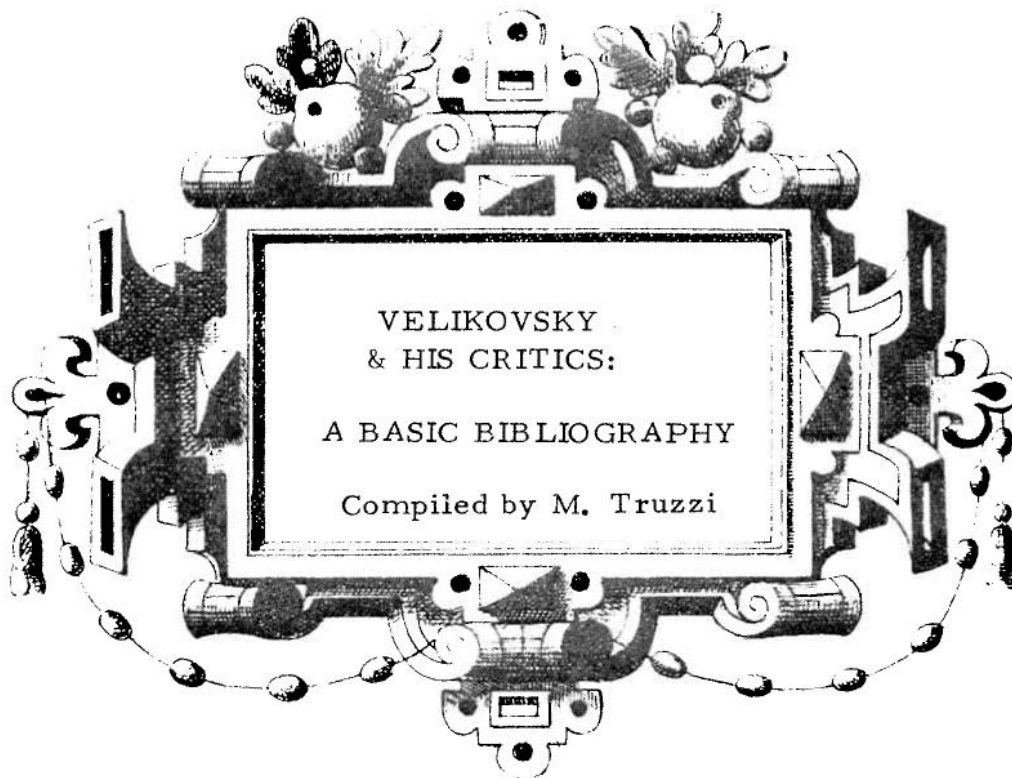
dialogue. But for the moment, I have no intention of arguing with anyone over what constitutes good science and what doesn't. I would prefer to see this article not as the first punch but as a starting bell (although it has been rung well after the fighting has commenced). The ringing of such a bell may seem to be an empty ritual, but it does at least announce the claim that this is a conflict that must be settled by rules that have been articulated and justified in some way. The institutions which bestow legitimacy on working scientists (i.e., the technical journals, the universities, and the foundations) have so far not set forth a precisely articulated criterion that the accused pseudoscientists could strive to meet. They have instead assumed that any qualified scientist has an intuitive grasp of what it means to be scientific and that the work of these newcomers is so self-evidently pseudoscience that it would be an insult to the collective intelligence of the scientific community to explain why this work is pseudoscience.

There may have been a time in the history of science when all qualified scientists did share the same intuitions as to what sort of thing science is. In such a time, scientists would have no trouble deciding who is behaving scientifically and who isn't, and there would be no need to articulate a precise code of scientific behavior. Ethical codes, epistemic and otherwise, arise only when people are unsure of how they ought to behave and feel the need to have a definition of proper behavior "spelled out" for them. Anyone who recognizes the existence of the previously mentioned crisis in science (regardless of which of the two descriptions he prefers) surely must admit that such a spelling out has been made necessary by that crisis. This is the only way the crisis can be genuinely resolved, rather than merely hushed up.

The dangers of neglecting to spell out our epistemic ethics are considerable. If we do not understand the principles which underlie our intuitions, it becomes very difficult to distinguish our scientific intuitions from our personal prejudices. As a result, many established scientists tend to lump all new research that rubs them the wrong way into a vast undifferentiated "irrationalist conspiracy." If a closer inspection were made, it would be discovered that many of the members of this "conspiracy" think of themselves as legitimate scientists but see their "fellow conspirators" not as allies but as pseudoscientists and kooks. They claim that they are grouped together with the kooks for trivial and irrational reasons, i.e., they use technical terminology with its roots in Sanskrit instead of Latin, or somebody wrote a book about them once and appeared on a talk show to sell it. They are surely being mistreated if these are the only reasons that universities and foundations are refusing them funding, established journals are refusing to publish their work, and opponents are openly asserting that all rational men should believe they are lying, rather than accept their findings at face value. If there are other reasons why these researchers are being treated this way -- if there is a standard of scientific excellence which they are failing to live up to -- then the scientific community has an obligation (to itself as well as to the newcomers) to articulate this standard in as precise and accurate a way as possible and to indicate the ways in which each of the accused pseudoscientists is failing to live up to that standard.

We must not think, however, that if the scientific community were to hold some sort of council, at which a code of epistemic ethics were spelled out, that we could thus restore the old intuitive methodological harmony of Science's confident adolescence. Scientists could not then say, "Well, we've settled that problem, now let's forget about philosophy and go back to doing science." If such a code could be agreed upon, it would almost certainly be a jury-rigged tangle of compromises that required constant revisions to account for both new thought and new data. For better or for worse, it seems that scientists are now permanently saddled with the obligation to ask themselves not only "What is true?" but also "What is truth?" (a question which has never managed to find an uncontroversial answer).

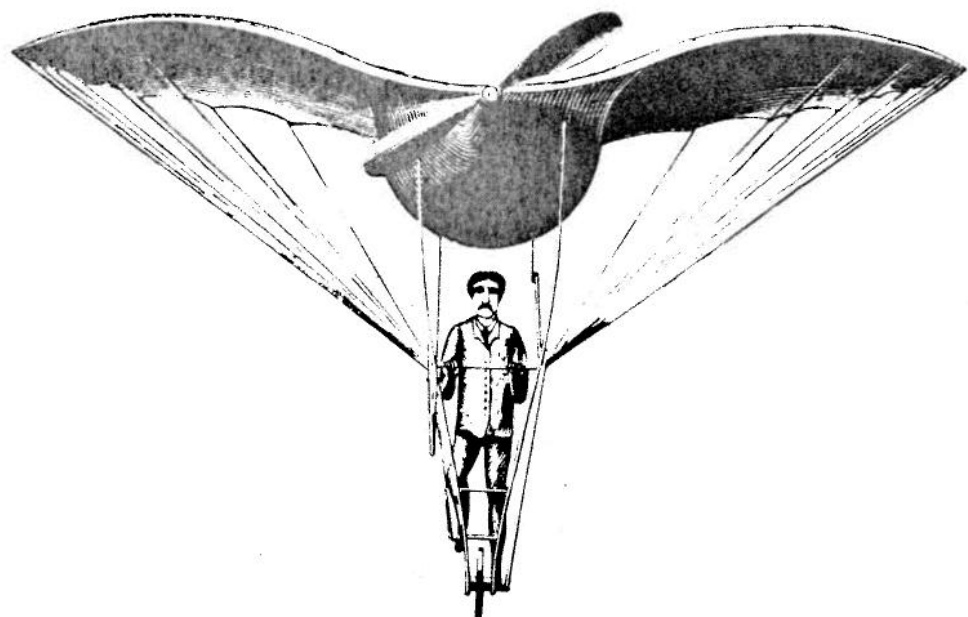




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Editor's Comment: These random bibliographies are primarily intended to call attention to articles in the places more likely to be overlooked by researchers. Thus, in general, the standard resources such as the Journal of the American Society for Psychical Research, the Journal of Parapsychology, Parapsychology Review, the Journal of Occult Studies, Pursuit, Info, The Skeptical Inquirer, etc., all of which contain articles of worth and relevance, are not listed here. It is presumed that serious researchers would routinely check these journals. The exceptional listing from these journals here would result from their carrying an article of unusual or special interest, such as an article on astrology in a parapsychology journal. This selective process of inclusion tends to bias the listings in a negative direction since positive studies are usually found in the unlisted journals mentioned above. This is a bias that does not represent any prejudgement by the Zetetic Scholar but is simply a result of my seeking to bring to your attention studies from less visible places, particularly the non-paranormal oriented professional and academic journals.

# Dialogues

## COMMENTS ON MARCELLO TRUZZI'S PAPER

BY LAURENT A. BEAUREGARD

It is claimed that the burden of proof accruing to paranormal claims is heavy. Extraordinary claims require extraordinary proof. The purpose of the opening papers of Volume 1, Number 1 of Zetetic Scholar was to clarify and defend this claim as a principle of scientific method. In my own paper, I tried to defend a skeptical "Humean" bias toward the paranormal in terms of a Bayesian conception of scientific confirmation. I argued that this bias, which is a reflection of the above-stated "burden-of-proof principle", is entirely reasonable and may even be required for scientific rationality.

There is a danger, however, of lapsing into a dogmatic kind of skepticism which would inhibit the growth of knowledge. As pointed out previously, there are forms of the Humean bias which are "so strong as to preclude a priori the possibility of confirming a paranormal claim." But the Bayesian schema shows how it is possible to be skeptical toward paranormal claims without being dogmatically negative about them. In practice, however, skeptical writings on psychic phenomena often come across as being invincibly negative. Thus Marcello Truzzi notes that "the critic sometimes requires evidence of such extraordinary character as to make the proponent of the paranormal believe that nothing would ever convince so extreme a skeptic."

Truzzi and I agree that skepticism can be carried too far. But how can we know when a skeptic is being unreasonable in this way? There are signs to watch for, Truzzi says. And one of them is "when a critic suggests experimenter fraud as an explanation even though there may be no direct evidence of fraud, merely a possibility of fraud." C.E.M. Hansel, whose 1966 book claims to provide a scientific evaluation of ESP, is supposed to be just such an extreme skeptic.

Such skeptics are anathema to parapsychologists who say that "the presumption of fraud without any evidence (for it) is a non-falsifiable claim that has no place in science." Now this sounds very reasonable, so reasonable that Truzzi says that he has to agree with it. But the quoted statement is, in fact, perniciously misleading. Let me show how and why.

Take Hansel and ask: what is this critic really doing? Is he ascribing zero prior probability to paranormal occurrences? If so, then we can all agree that his skepticism would be too extreme. But there is a more charitable (and, I think, truer) interpretation of what Hansel was up to in his 1966 book. Perhaps he attributed only a very low, non-zero, prior probability to paranormal hypotheses. If so, then Hansel's "a priori" skeptical, or "Humean", bias was--so far--entirely reasonable.

But Hansel in fact upheld the burden-of-proof principle in yet another, logically independent, way. The idea was that if ESP is to be

established scientifically by means of experiments, then the likelihood of alternative (non-paranormal) explanations for the results of those experiments should be extremely small. In other words, an ESP experiment is of scientific value if, and only if, that experiment is set up in such a way that fraud and/or self-deceit is not humanly possible. This was Hansel's methodological position.

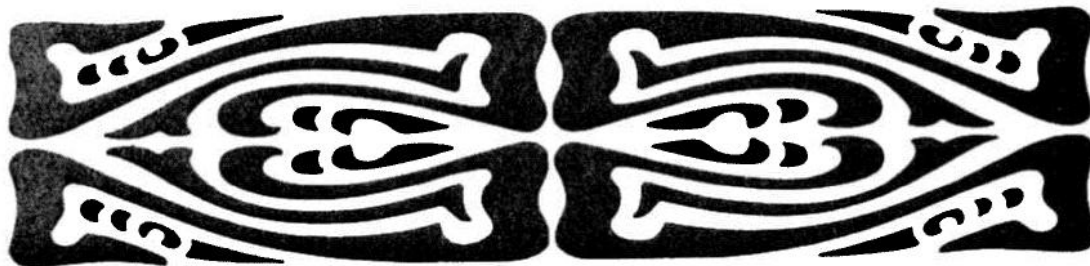
Now consider what Hansel actually did with regard to the classic ESP experiments he investigated. He showed, through painstaking research, that there was, in each case, "merely" the possibility of fraud. And he showed this in such a way that it became clear just how this or that "possibility of fraud" could have been eliminated if only the experimenters had taken appropriate precautions.

Two points need to be made about Hansel's skepticism. First, it exemplifies each of the two logically independent (as per the Bayesian schema) aspects of the "burden-of-proof principle" which reasonable people assume with regard to paranormal claims. Secondly, the "presumption of fraud without any evidence for it" which emerges from Hansel's investigations cannot be regarded as "a non-falsifiable claim that has no place in science." Hansel finds defects in scientific protocol in the ESP experiments. Presumably if those defects had been absent to begin with, then Hansel would have to accept "the ESP evidence" as strongly confirming a paranormal hypothesis.

If extraordinary claims require extraordinary confirmation, then we cannot tolerate the defects which Hansel has uncovered.

One final point. Was Hansel out to give us a direct disproof of the reality of ESP? Or was he aiming only to show that ESP is not (yet?) scientifically established? If Hansel's program was the latter, then is it not evident that all he had to show with regard to the choice ESP experiments was that fraud was possible? Is it not evident that it was not Hansel's burden to show exactly how the trick was turned?

The believer offers evidence that is insubstantial for the skeptic, while the skeptic gives inadequate indication of what it would take to force the skeptic to accept the evidence. I think that anyone who adheres to the burden-of-proof principle will agree that the burden of the believer in the paranormal is rightly heavier than the burden of the skeptic to explain just how the trick was turned.



## COMMENTS ON LAURENT BEAUREGARD'S PAPER

BY JOHN PALMER

I would like to comment on Laurent Beauregard's article, "Skepticism, Science, and the Paranormal," which appeared in the first issue of Zetetic Scholar. I should preface my remarks by saying that I am a psychologist who has been actively engaged in parapsychological research for the past eight years. I would probably be classified as a "believer" on Dr. Beauregard's continuum, although I find such labels overly simplistic. Nonetheless, they are useful if not taken too literally or globally.

I find myself in strong agreement with the general approach that Dr. Beauregard takes in his article. It is indeed refreshing to find someone from the "skeptics" camp who realizes that conclusions about the validity of the paranormal need not be restricted to conclusive proof and total rejection. The expression of conclusions in terms of a continuum of probability statements is a procedure that scholars on both sides of the fence would do well to emulate. In a more general vein, I think Dr. Beauregard has done a brilliant job in putting his finger on the underlying and often unrecognized assumptions that separate "believers" and "skeptics."

Among the most perceptive of Dr. Beauregard's comments is his statement that "The believer may wish to view this currently accepted background knowledge as neutral with respect to a given paranormal hypothesis." (p.7). Dr. Beauregard is referring here, I presume, to the knowledge derived from normal science in the Kuhnian sense. This statement is certainly true for me, and I suspect for many other "believers" as well. However, I would not assent to what Dr. Beauregard seems to attribute to "believers" in the immediately preceding sentence, namely that "all currently accepted 'background knowledge' is to be held only tentatively"; at least I would not assent to it in the strong sense which I suspect he intends. Moreover, I do not think this statement follows logically from the statement regarding neutrality which I do accept.

My apparent disagreement with Dr. Beauregard on this point derives from a more fundamental and clearcut disagreement I have with him concerning his definition of a paranormal event. On p. 5, he states that, "A paranormal event will then be, by definition, any event which seems to contradict some well-established theoretical principle or fundamental law of nature." My issue is with the word "contradict."

I contend that paranormal events do not contradict the theories and laws of normal science, but that they fall outside the domain of these theories and laws. Let us assume (for the sake of argument) that nonartifactual paranormal events occur. What I mean by "nonartifactual" is that we agree such events cannot be adequately explained by normal physical principles. (Note that this does not necessarily mean that we have some other explanation of these events that is adequate; I am talking about events, not theories.) It is obvious that such events were not among those that the theories of normal science were invented to explain. What happened was that scientists sought to account for other events with which they were more interested and the occurrence of which was less controversial. In the course of doing so, they invented powerful theories which explained these events and predicted other events within the "physical" domain.

So far, this is all well and good. However, scientists are always looking for the single theory that will adequately account for everything in nature. This creates a powerful temptation to infer that theories which account for all events within a certain domain also account for all events, period: i.e., that there can be no events for which the theory cannot account. This sort of inferential leap is comforting but hardly justified from a logical point of view.

Paranormal events, if they exist, fall outside the domain of normal science. They do not contradict normal science, they merely redefine its boundaries or range of applicability.

This point of view is not as heretical as it might seem on the surface. Physicists, for example, have had to cope with data suggesting that light sometimes behaves as a particle and sometimes as a wave. Thus they had to simultaneously accept two theories of light that appeared to be fundamentally incompatible with each other. Physicists did not respond to this state of affairs by saying that either theory had been contradicted or refuted; they simply noted that each theory had a limited range of applicability. Thus we had a situation where two incompatible theories were both accepted as valid for their respective domains. Some theorists now believe that quantum mechanics can account for both sets of data, but this conclusion is still controversial. The point, however, is that data incompatible with a supposedly universal theory were granted evidential status without being interpreted as refuting the theory.

Likewise, I am able to accept paranormal events, which will require for their explanation theoretical principles incompatible with normal science, and at the same



time accept, as confidently as any "skeptic," the principles of normal science for the range of events to which they are relevant. It would be much different, for example, if I were to claim some paranormal explanation (e.g., "ESP") for why you are (hopefully) able to comprehend the printing on this page. Here we are dealing with an event within the domain of normal science that can readily be explained by principles of optics, physiology, etc. I can readily understand why scientists would be up in arms about this type of claim. But this is not the kind of thing that parapsychologists, at least, are claiming!

This brings us to Dr. Beauregard's application of his "PAL" simplification of Bayes' Theorem to the controversy over claims of the paranormal. I am in agreement with his analysis, except for one point. I must take exception to his statement, on p. 8, that "the believer's position, according to the foregoing analysis, would construe paranormal hypotheses as irrefutable or unfalsifiable." This statement can readily be shown to represent a logical error.

Dr. Beauregard begins by assuming the "believer" would assign to "A," the antecedent probability of the paranormal hypothesis, a value of  $\frac{1}{2}$ . This is quite fair, based on the assumption that evidence within the domain of normal science is irrelevant to the paranormal hypothesis. It is also true, given this assumption, that "P" could not possibly take a value lower than  $\frac{1}{2}$ .

The problem is that any reasonable construction of what "believers" are claiming must grant that acceptance of the paranormal hypothesis requires some positive evidence in its support. It would be absurd to suggest that even the most fanatical believer would argue that we should believe in paranormal events solely because they are not ruled out by normal science. Thus the paranormal hypothesis is really  $P > \frac{1}{2}$ . Since  $P = \frac{1}{2}$  is logically contradictory to  $P > \frac{1}{2}$ , it follows that a conclusion of  $P = \frac{1}{2}$  refutes the paranormal hypothesis.

Of course, this whole analysis represents a kind of oversimplification. For example, if we calculated  $P = .51$  we might be reluctant to accept the paranormal hypothesis, even though  $P > \frac{1}{2}$ . The problem, it seems to me, is that by introducing the concept of refutability at all in this context, Dr. Beauregard has reverted to the very same dichotomous, "prove" or "reject" decision strategy from which he had just rescued us with his Baysean application. Why not simply say that the plausibility, convincingness, or probable validity of the paranormal hypothesis increases as  $P \rightarrow 1$ , and leave it at that?

One final point on this topic. When I said earlier

that it is fair to assign "A": the value of  $\frac{1}{2}$ , I should have qualified that by saying that this is only true when the event to be explained by the paranormal hypothesis falls outside the domain of normal science. To return to my previous example, if the paranormal hypothesis were that you are reading this paper by ESP, I would assign to "A" a value very much lower than  $\frac{1}{2}$ . It follows that evidence for this type of hypothesis must be stronger than evidence for most paranormal hypotheses entertained by parapsychologists before a given level of "convincingness" can be reached. I bring this up partly to illustrate that the "believer" can find a use for the whole range of Dr. Beauregard's scale.

To sum up, I believe, for reasons outlined at the beginning of this letter, that the value of "A" Dr. Beauregard attributes to the "believer" in his example is more reasonable and defensible than the value of "A" he attributes to the "skeptic." I think it is fair to say that this is part of the reason why I am a "believer," and insofar as this is true of many other "believers" (as I think it is), we all owe Dr. Beauregard a debt of gratitude for bringing these issues to the surface.

I will close by commenting briefly on Dr. Beauregard's apologia for "emotional prejudice" in the scientific evaluation of paranormal claims. I am not sure that I grasp his point in this section, but I sense a confusion between process and outcome. The fact that skeptical conclusions might follow from proper logical analysis (a point I am accepting only for the present argument) does not justify the use of arational or irrational processes in science, even if those processes lead to the same conclusion as the logical processes. I might stumble upon a valid scientific conclusion by playing with a ouija board, but that does not mean I am doing science. Emotional tirades, ridicule, clever but vacuous witicisms, ad hominem attacks, and the like, when cloaked in the robes of scientific objectivity, must be explicitly and forcefully condemned for what they are: a degradation of science.



## BELIEVERS VERSUS SKEPTICS: COMMENTS ON LAURENT BEAUREGARD'S PAPER

BY RAY HYMAN

As I see it, Laurent Beauregard had two key objectives in writing his provocative paper. First, he wanted to logically analyze the controversy between the believers and the skeptics on matters paranormal. For this purpose he employed Bayes' Theorem as an abstract schemata of the debate. In this way he pinpoints specific focii of disagreement. And, second, he wanted to argue that it was "reasonable" for scientists to be skeptical about claims of the paranormal. Again, Bayes' Theorem is the device with which Beauregard feels he can demonstrate that one can be biased against such claims and still be rational and objective.

Without question Beauregard has advanced the cause of "reason" by trying to capture the underlying logic of both the believers and the skeptics. Within the framework of Reverend Bayes' formula, he tries to show that both sides can be shown to have rational bases for their positions. I feel he is somewhat more successful in his first objective of conceptually analyzing the elements of the debate. I feel that he has not succeeded at all on the second objective of justifying the negative bias of the skeptics.

In what follows, I will simply bring up some informal reasons for questioning how well Beauregard has accomplished both his objectives. These reasons are merely a number of questions or confusions I have with respect to the specific way in which Bayes' Theorem is adapted and interpreted. In addition, I find it all too easy to generate what seem like very strong counter-examples to Beauregard's key conclusions.

The trouble begins when Beauregard makes the traditional distinction between the "paranormal" and the "abnormal." Presumably, no matter how unlikely it is that a famous scientist is deluded or mistaken or lying in what he reports, such an "abnormal" happening is still many times more likely than the "paranormal" event he may be reporting (that he saw Uri Geller bend a key without touching it). The ensuing algebra and specialized versions of Bayes' Theorem simply formalize the claim that the skeptic, no matter how low he assesses the probability that the individual making the claim is deluded, makes a rational decision against the claim because, for him, the probability of the claim being true is even less probable.

One confusion for me at this point is that Beauregard seems to contradict himself. He gives us Broad's formulation of the Humean Bias in these words: ".no matter how strong the special evidence may be for an alleged paranormal event, and no matter how little evidence there may exist for incompetence or fraud, it is always more reasonable to postulate human error than to admit that a genuinely paranormal event has actually occurred." Broad, himself, rejected this formulation. And Beauregard rejects it because "We don't want the Humean bias to be so strong as to preclude a priori the possibility of confirming a paranormal claim. For...the argument, if valid, would constitute an a priori disproof of any fundamental discovery that threatened previously established scientific systems."

He brings to bear his version of Bayes' Theorem to get around this problem of not allowing any new evidence to change a priori beliefs. But look at his Skeptic's PAL (the Bayesian version for the assumed skeptic)! It turns out that the skeptic's prior belief is practically unaffected by any evidence brought to bear on the proposition by the believer. Indeed, a strict interpretation of the formula Beauregard develops for the skeptic is that his current belief in the paranormal claim is entirely a function of his antecedent probability that the paranormal hypothesis is true. I'm sure Beauregard did not intend it to be so interpreted, but one can take the formula for the skeptic and show that, taken literally, it implies that his degree of belief becomes less and less with each successive iteration regardless of what is going on in the real world. Instead, I think Beauregard wants to derive a variation that leaves P and A identical in the face of new data.

Regardless, something is drastically wrong here. Bayes' Theorem, as used by statisticians and decision makers, is a normative rule which is employed as a model of how a "rational" person should revise his prior beliefs about some hypothesis on the basis of new data. The Theorem allows believers and skeptics to end up with differing degrees of belief on the basis of the same data. But this is only so because the two start from different places. Let's assume that the results of a card guessing experiment are such that the odds are twice as high that they were produced by paranormal means than by chance guessing. Now take a skeptic who, prior to seeing these results, believed that the odds are 9 to 1 against ESP being true. After he is exposed to the experimental data, according to Bayes' Theorem, he should revise his previous odds and now believe that the odds are 4 1/2 to 1 against the ESP hypothesis. Notice that he still has not been converted to the believing side, but the positive results have moved him somewhat nearer to that position.

Now consider a believer who, prior to seeing the same experimental results, believed that the odds were 9 to 1 in favor of the ESP theory. On seeing the findings, the Theorem says that the believer should now revise his odds to become 18 to 1 in favor of the ESP hypothesis. What is important, within this framework, is that "rational" men are supposed to move in the same direction in the face of the same evidence. The reason that the believer and skeptic still differ in their willingness to endorse ESP is simply because they started out with widely differing initial beliefs. After repeated exposures to the same series of data, however, the theorem asserts that rational beings will quickly converge onto identical odds about the hypothesis.

Of course, such a definition of rationality assumes that both the believer and the skeptic evaluate the probability of the evidence having a normal source as the same. And it is here that Beauregard departs from the normal use of Bayes' Theorem by assuming that the believer and skeptic differ not only on their prior assessments of the probability of the paranormal hypothesis, but also differ markedly on their assessments of the probability that the asserted evidence has a normal cause. This additional discrepancy between the two sides complicates the picture. It certainly gives more "degrees of freedom" (or more different ways) for the believer and skeptic to maintain or even strengthen their respective positions when confronted with the "same" evidence. But, even granting this, it is difficult to believe that either Beauregard's SKEPTIC'S PAL or his BELIEVER'S PAL are rational beings in any meaningful sense intended by current usage of Bayes' Theorem.

Any system that maintains its belief unchanged regardless of any new evidence cannot be considered "rational." Yet, this is just what Beauregard's Skeptic does. And any system that can only strengthen its convictions when confronted with new evidence, but can never have it weakened, as is true of Beauregard's Believer, is certainly not rational by any conventional standards. So, starting with the promise of showing us how both parties (or at the very least, the skeptic) can react differently and yet rationally to the same evidence, Beauregard, in fact, has created two monsters each of which is completely irrational in its own way.

But my puzzlement goes beyond these ideosyncratic applications of Bayes' Theorem. I get the feeling that Beauregard has confused different things in trying to employ a single formula to capture his dichotomy between believer and skeptic. The formula as he employs it deals with how the belief in a given paranormal hypothesis (h) changes when the individual is confronted with special

evidence (e) relevant to h. The degree of belief in h is indexed by a probability P that can range from 0 to 1. Probabilities also index the degree to which such evidence e is likely under two conditions: 1) when the paranormal hypothesis is true ( $P(e, h \& k)$ ) and 2) when it is false ( $P(e, h' \& k)$ ). In Beauregard's formulation, the difference between the believer and the skeptic resides in the probability that each assigns to this last event. (He assumes that both agree that the probability is one that we would get such evidence if h were true. I strongly disagree with this. It is obvious, for example, that parapsychologists consider successful telepathic outcomes rare even in gifted psychics. But this disagreement is irrelevant to the considerations I deal with).

But this just does not square either with intuition or with known facts. Take as e, for example, the following assertion: Uri Geller caused a key to bend without touching it and while under close laboratory supervision. I think that both believers and skeptics will assign a very, very low probability of such evidence occurring under a normal or non-paranormal situation. It is just because both the skeptic and the believer realize that such a happening is likely to occur only under paranormal conditions that controversy exists! So, in this case, at least, the skeptic and believer can be expected to have very similar assessments of the odds that such an outcome favors a paranormal explanation.

Notice that the argument between believer and skeptic will not be over what the evidence means, but whether it actually occurred as reported! What we are dealing with, then, is different assessments of the reliability of the report. If the evidence is as reported, skeptic and believer tend to agree that it was unlikely to have occurred according to normal causes. Beauregard seems to be aware of this in his verbal account, but confounds this sort of disagreement with an alleged disagreement over the implications of the evidence.

What he needs is another formulation of a Bayes' type formula which focusses on the probability of the evidence being as stated, given the specific report and our knowledge of human limitations. Within this application of Bayes' Theorem, we would then have a component in the denominator that involves getting such a report even when the true situation did enable Uri to secretly get his rather strong hands upon the spoon.

Beauregard's troubles, I believe, come about from trying too hard to fit the entire argument into a single-level, one-shot version of Bayes' Theorem. We have to take into account separately the probability that the report is trustworthy, in addition to considerations about what the

evidence implies, if, indeed, it is as reported. This oversimplification in terms of levels is in addition to problems created by oversimplification due to treating the problem as a dichotomy between two hypotheses and a polarization between two types of individuals. Unfortunately, there is a spectrum of different hypotheses and huge differences within the categories labeled "believer" and "skeptic."

Beauregard's characterization between "believer" and "skeptic," in fact, can better be applied to two types of individuals within the "believer" camp. Among parapsychologists and "believers" some have strong prior beliefs in the likelihood of paranormal hypotheses, while others have very strong beliefs that all the currently unexplained findings will eventually be explained in terms of "normal" hypotheses. John Taylor, in his Superminds, explicitly commits himself to finding an account of Geller's ability to bend spoons that will square with currently accepted scientific knowledge about known forces and their energy transformations. Indeed, he apparently rejects some of the claims for Geller on the grounds that they would violate his calculations about what is theoretically permissible (I understand that Taylor will soon have an article in Nature in which he now disavows the Geller Effect on the grounds that his revised calculations show it to be inconsistent with known laws). On the other hand, it is easy to find strong supporters of Geller who see his metal-bending as being inconsistent with any normal explanation. Throughout psychical research we find such strong polarizations within the camp of "believers." Zoellner and Richet both insisted that they were looking for naturalistic explanations of the spiritualistic phenomena they endorse. Such fellow-travelers in psychic endorsement as Alfred Russel Wallace and Sir Oliver Lodge, for example, insisted just as strongly that only a paranormal hypothesis could account for the same facts.

What kept, and keeps, such different sorts of believers together in their defense against the skeptics was their common belief that the phenomena occurred as reported. Ironically, most of the skeptics were more in agreement with some of the believers that if the data were as reported, then a miracle had occurred. The acrimony and disagreements were precisely over this issue of the trustworthiness of such evidence.

Beauregard's second objective was to show how skeptics could reject the paranormal claim and still be rational and objective. After consideration of what Beauregard has written, I conclude that I do not know what he is writing about. For example, I could have an a priori bias against the paranormal hypothesis because of my beliefs about the implications of current scientific theories and my knowledge about the fallibility of human testimony. This

could justify my attaching a very low probability to the existence of paranormal determinants. Now, when I am exposed to evidence D that favors the paranormal hypothesis over the normal one, I may still end up with a bias against the paranormal hypothesis. But if I am rational, the new evidence D should have lessened somewhat the degree of my belief against the paranormal hypothesis. It is in this sort of example that the essence of "rationality" in the Bayesian Method is found. My bias is still rational as long as it is responsive to alterations in strength or weakness in the face of positive and negative evidence.

If, on the other hand, my bias is impervious to evidence, or it can only be strengthened by evidence, there is no way within a Bayesian framework to justify this as rational. Beauregard seems to be especially ambiguous and vague at this point. One can get the impression that he is suggesting that we can "reject" the paranormal claim without considering the evidence put forth. I would disagree that such a position can ever be dignified with the words "objective" or "rational." On the other hand, his treatment of the terms in the Bayesian formula imply that he is considering it rational to dismiss the evidence on the basis that observers, no matter how qualified, can sometimes goof. Here the evidence is given some degree of consideration but is dismissed on the grounds that it is more likely to be the result of abnormal observational processes than of paranormal occurrences. Again, we have a problem of what is "rational" behavior in this circumstance.

In part, the problem resides in what Beauregard intends by rational "rejection." It is one thing to choose to ignore the claims put forth by the parapsychologists because one's a priori beliefs and one's weighing of the relative probabilities of abnormal and paranormal happenings leads one to be skeptical. It is another thing, however, to openly attack the claims and to go on record against them on this basis. In the latter case, I think the skeptic should be obligated to know what he or she is talking about. This involves a very careful consideration of the available evidence. Perhaps, it calls, in some cases, for the skeptic to generate some first hand data as well.

As I see it, then, there can be rational and irrational skeptics. It may be rational to ignore or set low priorities to paranormal claims on the basis of one's prior beliefs. This, of course, depends upon definitions of rationality and what the underlying basis of the decision-making process is. It may also be rational to openly reject claims put forth for the paranormal on the basis of evidence D. But such a rationality surely demands a careful consideration of D in terms of its possible causes



as well as the reliability of the source. Again, it will depend crucially upon how the rejection is done.

Beauregard and Truzzi are both attempting in their ways to provide us with new and more helpful ways of understanding what underlies the often emotional disagreements between two artificially constructed camps of "believers" and "skeptics." Hopefully both of these well-intentioned scholars will continue to develop and refine a logical framework that will better enable us to pinpoint just what the disagreements are. One benefit for me in trying to think about the sorts of matters that Beauregard and Truzzi are trying to more faithfully characterize is the discovery that I share more beliefs about the nature of science, the assessment of evidence, and the difficulties of psychical research with many of the "believers" than I do with many of my fellow "skeptics." The situation is multidimensional. The "believer"- "skeptic" dichotomy tends to overshadow the fact that there are important overlappings of common interests and goals that cut across this dichotomy.



# SOME FACETS OF THE PARANORMAL GAME: COMMENTS ON THE TRUZZI AND BEAUREGARD PAPERS

BY W.E. DANFORTH

The phrase "claim of the paranormal" inevitably has polemic flavor. Both words carry fringe implications of lining up to do battle!

Players in the game are primarily of only two "denominations," claimants and critics.

Were the motives of the players entirely unemotional, each episode would be carried to scientific conclusion by both parties acting in accordance with categories of reason and with the accepted rules of empirical determination. There would continue to be only two kinds of players: claimants and critics.

In the real game, however, there are (as set forth below) five kinds of players! Each of the primary denominations comprises a number of subgroups and each of these is characterized by a certain emotional tenor. However, in each primary denomination there is, of course, one subgroup which may be characterized as rational, i.e., whose affective motives are wholly subordinate. The nature of the subgroups is discussed later on. An understanding of that interpersonal phenomenon generated by the interactions of these subgroups is essential to creative pursuit of the "game."

Before taking up the different kinds of claimants and critics I will present certain background matters having to do with the circumstances under which the game is played. Prominent among these will of course be what we mean when we use the word "scientific."

## THE SCIENTIFIC COMMUNITY AND ITS SUBDIVISIONS

What we are dealing with here is something called "science" and now and then we will refer to a section of mankind known as "the scientific community."

This scientific community (college graduates, - mostly Ph.D.'s) occupies the stands on one side of the field; on the other side are people who have strong interests which overlap those of the scientists, who may or (sometimes) may not be college graduates, who for the most part do not aspire to publish in the journals of the scientific establishment, and have neither the "intellectual hang-ups" of which they accuse the scientists, nor have they, perhaps, a real appreciation of

the beauty and power of science.

Actually this football field analogy isn't worth much. For one thing there is no such thing as a team (from either side) trotting out on the field as a unit, to applause from the bleachers!

Confining my remarks here to the scientific side, we must take Stefan Strasser seriously when he points out in his Phenomenology and the Human Sciences that the scientific community necessarily and properly has had to divide up into groups, each with a language mildly mystifying to some of the other groups and each (to some degree) with its own paradigms of "good science." Strasser calls these divisions "research societies."

ACCEPTANCE BY THE SCIENTIFIC COMMUNITY MEANS ACCEPTANCE BY ONE OF THESE COMPONENT RESEARCH SOCIETIES.

What actually happens is that a candidate for "acceptance by the scientific community" gets brought to the attention of members of an appropriate research society, possibly by more than one. If that society rejects it, it is, generally speaking regarded as rejected by the scientific community. If that society gives it some approval the matter is on its way to acceptance by the whole community. Members of other research societies don't give it much thought unless, and here is sometimes the rub, acceptance by society A would inject (in the eyes of society B) a logical difficulty in the latter's theorizing. (empirical acceptance of PK by parapsychologists causing theoretical shuddering by physicists!)

HOW ABOUT HONEST REPORTS FROM INDIVIDUAL HUMAN BEINGS?

I would suggest that much of the confusion in the Paranormal Game arises because people do not really follow through with the fact that science is essentially social.

This is not to say that a report of an extraordinary event by an individual human being cannot be true, that indeed it may not later on turn out to be scientifically true. It's just that a report of a new event, reported as an experience of a single individual, and by him alone, is not what we mean by science, and we had better save our breath rather than argue whether it is scientifically true.

TO BE A SCIENTIFIC FACT, THE MATTER MUST BE STATABLE IN PRESENT TENSE.

This is closely related to the foregoing: When someone says "Peter saw a toad with five legs," it is not science no matter how massive Peter's reputation as a scientist might be. If Peter were a world renowned symphony conductor no one would disagree that no science has been involved, even though Peter were a man of impeccable honesty; members of the appropriate research society would say: "Peter said he saw a toad with five legs. Since it was Peter who said it, it might be true, but we had better take a look ourselves."

If, however, Peter were an eminent zoologist, people would regard the report as scientific fact from the start. But now, hold it a moment! Actually, in making that judgement people would not really be basing it on the report of a single man. Instead they would, immediately and inevitably, be saying to themselves: "If Peter saw that, other members of the society certainly will too." Their acceptance would be based upon an assumed but non-existent consensus of the society for which Peter was a symbol.

So, in principle we can enormously (though controversially!) simplify matters by "officially" (!) excluding from the science ball park (though not necessarily from the realm of truth) all statements such as "highly qualified people have reported that - - -."

The only claim of the paranormal that should really be considered as a candidate (rather than as a worthy postulant) for the laying-on of scientific hands is one which can be phrased in the form:

When circumstances are arranged to be thus-and-so, such and such a phenomenon occurs.

The question "Did Uri Geller really bend spoons by thinking?" is not strictly a scientific question. It is, however, pre-scientific, in that it paves the way to a truly scientific (present tense) question: "Under what circumstances is a solid physical object bent by pure thought."

Note that the above does not exclude as a conceivable answer: "When Uri Geller thinks about it." All it needs is an empirical consensus of a reputable parapsychology society.

THE EMPIRICAL MUST DOMINATE THE THEORETICAL,

Whenever an extraordinary event is proposed as a candidate for scientific fact two kinds of questions must be clearly (and vigorously!) distinguished: (1) Questions regarding possible conceptual difficulties

(i.e. "theoretical"); and (2) Questions regarding that experiential process which has led to the claim (validity of experimental observations).

I now find myself compelled to go way out on a limb! Most philosophers, other than the most radical empiricists, would disagree, but I have to say the following: Conceivably, one must allow the possibility that an utterly new fact may be reported by several research societies (and subsequently agreed to by others), a fact which is seriously disharmonious with all existing "scientific" idea-patterns.

When chips are down the court of last resort is experimental fact, even though the foundations of all of humanity's precious idea patterns be shaken.

A claim of the paranormal must have better proof than would an ordinary claim. Truzzi formulates this by saying "An extraordinary claim requires extraordinary proof," (ZS,I,#1,p.11); and immediately one hears a roar of protest from the stands! The umpire seems to be handing out decision after decision in favor of the scientists!

Beauregard agrees with Truzzi (p5 same issue): "Now one can argue that the lower the prior probability of an event, the greater is the special evidence needed for rational conviction that the event really did occur."

Beauregard, I would say (and I agree with him) is pointing out what phenomenologists (e.g. Scheler, Selected Philosophical Essays p. 219 Northwestern Press) call an "essential connection" between lower prior probability on the one hand and need for more special evidence on the other. Perhaps "anyone" can indeed feel this connection, but it may take a rather sophisticated 'character' to feel its real power, particularly vis-a-vis a personal distaste for its implications!

Agreeing with both of these writer, I would, however, suggest that we don't have to base the principle on a priori grounds! The "essential connection" implied in Beauregard's "no one can argue that - - -" can be superceded by placing the proof of the matter in the empirical realm.

If an umpire bases a very important decision on

a priori logic, one side of the stands or the other will assuredly roar its dissent and throw bottles. (Once, in a small yacht club I tried to set up a logical handicapping system for sail boat races, so I know). For both sides to be happy (or at least remain quiet) some experiential process like "instant replay" has to be brought in.

This happens automatically! For scientific acceptance to occur, the very extraordinary claim has to be taken up by the appropriate research society (no one contests that), and in that society something like a consensus will have to be achieved. This takes time, a lot of effort, and many hassles of one kind or another. Inevitably the very extraordinary will just "naturally" get more attention than the normal.

## DIFFERENT KINDS OF CLAIMANTS AND CRITICS

I mentioned at the outset that because of different sorts of affective motives there are different sorts of claimants and critics, and that we have to look at this in order to make sense of the Paranormal Game.

### THREE KINDS OF CLAIMANTS

1. Rational. There are indeed those whose dominant interest is establishment of new and replicable facts; either technological (i.e., relevant to "material" needs) or scientific (promoting understanding of the world).

2. Affect motivated. These (as is the case with all the "players") claim to be rationally motivated, but have, in reality, a dominating interest in the outcome of the episode at hand. Of these there are two kinds:

- A. Those whose interest in the claim is essentially reasonable. Whatever affect-domination may be present is merely due to lack of experience with scientific method.
- B. Those whose affective interest is not subject to reason. There may be a spiritual thirst in the metaphysical realm, which is better fulfilled by some way other than establishing the truth of this claim. There may also be those who have a dominating urge to discredit the scientific establishment.

### TWO KINDS OF CRITICS

1. Rational: defined as under "claimant." Capable of putting aside their emotional prejudice.

2. Affect motivated: Many critics, when honest with themselves, discern strong interest that certain (not all) very extraordinary claims be disproved. Many are unaware of the degree to which this determines their views.

This means five kinds of claimant vs. critic encounter. There would be six, but two have indistinguishable outcome. Each type of encounter situation is indicated by a symbol such as (2A-2), which would mean a rational though untrained claimant vs an affect-dominated critic.

We proceed to take these up one by one.

1. (1-1) With both claimant and critic essentially free from affect domination, the episode proceeds to (sooner or later) scientific outcome.

2. (1-2) Rational claimant vs. affect-dominated critic. The critic may convince the claimant by theory or by reference to experimental evidence. If critic happens to be the one in error, his affect domination may prevent his acceptance of valid theoretical evidence; but if claimant has good experimental evidence, he may prevail.

3. (2A-1) Untrained claimant and rational critic. Critic may have to devote effort to education of claimant, after which the episode may proceed to scientific outcome.

4. (2A-2) Untrained claimant and affect-dominated critic. A sad case! Critic's lack of will to affirm evidence in favor or claim and the unhappy claimant's lack of scientific background may prevent any outcome whatsoever.

5. (2B-1) and (2B-2) Claimant with strong affective bias. In both cases, whether the critic be rational or affect-dominated, the affective drive of the claimant will "mask out" the power of any a priori arguments the critic may propose. He may, however, be influenced by "things happening before his eyes." Scientific outcome in either of these cases is unlikely unless the claimant can be enticed to participate in the design and prosecution of an empirical program in whose outcome he will, because of his part in its inception, be inclined to accept.

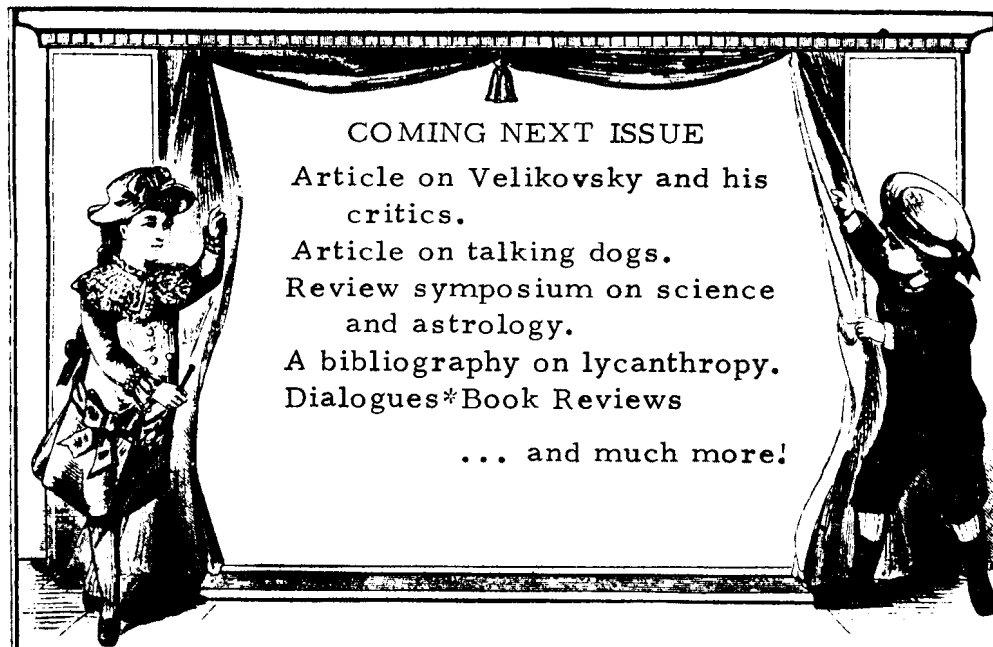
HOW PREVALENT IS SITUATION 5?

I think it is widely prevalent. Actually, in my own experience with the Paranormal Game, situation 5 has seemed to be the dominating state of affairs. Consequently, I feel that for progress to be made in the general program, much more emphasis must be placed upon experimental efforts and empirical studies.

To take an example from the area of astrology, no one currently deriving spiritual benefits from astrological activity is going to listen to arguments leading to the conclusion that there is no possible way in which the positions of the constellations can have any influence upon human affairs.

He does necessarily have the opinion that there are aspects of the psychological nature of human beings which depend upon the date they were born. Not being a member of the relevant research society, I am not aware of the studies which I presume have been made regarding (a) the personal qualities concerned and their susceptibility to definite "observation" (I seem to avoid the polemic word "measurement"); and (b) statistical correlations between such observations and date of birth. The only time I brought this up with a pro-astrology person I was given the idea that, of course, such studies are "old hat" and the correlation is positive! At the same time I believe it to be a fact that the scientific community as a whole does not believe that valid studies exist, and that the correlation must be negative. The only way to mutual understanding between pro- and anti-astrology people would seem to me to be by increased attention to statistical empirical matters like the above.

The settling of questions by really letting empirical realities speak for themselves is a surprisingly "rare commodity"; the kind of reflection required is not something that comes easily. A major program must somehow be joined to educate the public in the nature and value of empirical evidence. There is no way in which the public can be made theorists, but they can be led to greater sophistication in the several aspects of that broad art symbolized by the phrase, "Let's try it and see."







The Dark Side of Knowledge. By Albert Shadowitz and Peter Walsh.  
Reading, MA: Addison-Wesley, 1976. 305 + viii pp. \$9.95, paperback.

Reviewed by Laurent A. Beauregard

The dust jacket of this book invites the prospective reader to "take an intriguing and enlightening journey" into "the incredible world of the occult." There may be initial reluctance to accept the invitation until one thinks about the meaning of the title of the book. For knowledge, after all, is knowledge, even if it has a dark side. The journey is bound to be intriguing, too, if not always very enlightening. People are fascinated by the occult. But what sort of knowledge does one gain by dabbling in it? Indeed, what sort of knowledge does one gain by studying it "scientifically"?

The crucial question is whether "the dark side of knowledge" refers in any way to a reality which is not of human making, the sort of reality which it is the proper task of physicists to study, a reality which, whatever our current ideas about it, is itself independent of the human mind. Might it not be the case that a scientific study of the occult could yield a complete understanding of things occult, an understanding which would be superior to the conceptions of the practitioners and the dabblers?

It may be that a scientific study of the occult is more properly undertaken by the social sciences rather than by the natural sciences. There is nothing especially odd or unnatural in the notion of the sociology of the occult, or of the psychology of the occult. But there is--or so it seems--something definitely askew about the idea of the physics and chemistry of the occult. Physicists, and chemists, would then have no business studying flying saucers, psychic phenomena, vampires, or the I Ching--unless, of course, there were some chance that some of these things referred in some way to a reality that we never made.

The authors, Shadowitz and Walsh, are **physicists**. The reader is to be given a comprehensive survey of the occult **by two physicists** "who use the powers of science to explore all kinds of **obscure phenomena**," to quote the dust jacket once more. **These physics professors, who have taught a course on "Nature and the Occult" at Fairleigh Dickinson, hold a prior conviction about the reference of some occult beliefs.** From their preface: "We ... suspect that **any widespread, long-lived belief about the world must somehow reflect nature.**"

It is in this way that the book opens with the testament of the believer, with the view that there must be something in it, somehow, somewhere. The Freudian notion of occult belief as illusion, as projection, as wish-fulfillment, does not occur to our authors. With Freud, the perennial skeptic would say that it would be "very nice" if

any of these paranormal things were true, but what a striking fact it is "that all this is exactly as we are bound to wish it to be." Why not, then, "suspect" that certain kinds of "widespread, long-lived belief about the world" are probably not to be trusted, originating, as they do, in wish-fulfillment?

We are dealing with physicists who think that it is reasonable to suspend disbelief, or to quasi-believe, in the paranormal. And yet they are not indiscriminate about what they are willing to take seriously. The line apparently has to be drawn somewhere, even for the quasi-believer. Thus on page 42 we learn that "zombies are not truly walking dead," and on page 161 it is declared that "vampires do not exist." Other examples of paranormal phenomena which are negatively appraised include Kirlian photography ("the Kirlian patterns are purely physical," page 15) and the Bridey Murphy reincarnation episode (page 148) which is to be viewed "with a most skeptical eye."

There is, however, wide-eyed approval of much else. Extrasensory perception and psychokinesis, for example, are accepted as having been scientifically established by Rhine and his associates. No mention is made of the decisive criticism of C.E.M. Hansel. And, on occasion, the positive assessments of certain phenomena seem to be internally inconsistent. As an example, on page 16, we learn that "the very seat of personal magic" lies in "the control of the autonomic nervous system." Yet on page 23, that piece of "personal magic" known as automatic writing is called "a remarkable phenomenon" which either "comes wholly from the subconscious" or "stems from some outside agent using the subconscious of the individual." Perhaps the "very seat of personal magic" lies in the antics of the spirits of the dead, or of the inhabitants of Magonia. (Meta-terrestrial--as opposed to extra-terrestrial--intelligences are currently fashionable.)

Much of what is in the book is tinged with open-minded agnosticism. Such psychics and mediums as Daniel Dunglas Home, Eusapia Palladino, and Uri Geller are treated purely agnostically. Some of the miracles of Home, for example, are reported. Then it is noted that the scientist Crookes investigated Home and pronounced him genuine. It is also noted that the magician Houdini wrote that Home "lived the life of a hypocrite of the deepest dye." (Houdini thought that Home was a total fraud.) The authors then say: Either Crookes was a fool, or Houdini was a fool. These alternatives are supposed to be equally unpalatable, however. So, according to the authors, the last word on the case of D.D. Home can only be: "Well, it was a long time ago, over a century now -- Who knows?" Likewise with Palladino: Who knows? And the same with Uri Geller. Such is the spirit of suspension of disbelief and open-minded agnosticism. It is just not very enlightening.

With agnosticism comes a kind of subjective permissiveness: "One may either believe or disbelieve, depending on one's bias." But can personal bias be all that counts when dealing with, say, a monk whose saintliness caused him to float through the air? One would think that flying monks should be quite on a par with vampires and zombies, for better or for worse. On the other hand, it might be supposed that one ought to look out for Jungian synchronicities (meaningful coincidences)

that might accompany a paranormal event. It was at about the time that Isaac Newton first conceived of the universal law of gravitation that the flying monk was canonized by the Roman Catholic Church because of his saintliness and his levitations. And Leibniz--who is said to have witnessed one of the monk's flights--actually thought that there was something profoundly "occult"--that was the word that was used--about the Newtonian concept of gravitation, a concept which involved instantaneous action-at-a-distance.

With regard to magic and miracles in general, the authors hold that "until science provides conclusive evidence, it all comes down to a question of belief." They imply that any position on "a wide spectrum, ranging from complete belief to complete disbelief" is as good--as rational--as any other, given that science lacks "conclusive evidence" concerning the object of belief (or disbelief). But this kind of subjective permissiveness seems to contradict a methodological principle which is crucial to the rational assessment of paranormal claims. Simply put, the burden of proof (actually, of confirmation) rests on the shoulders of the claimant or believer. This is partly because paranormal claims carry with them a low prior likelihood. Here 'prior' means "before any evidence is introduced, that would support or refute the claim." To put it another way, we are not rationally free to believe whatever we like when it comes to anomalous claims "until science provides conclusive evidence."

Underlying all of this is the business of making clear exactly what is meant by "conclusive scientific evidence." In dealing with paranormal claims, we need to have some working notion, at the very least, of what it is that makes "evidence" relevant, conclusive, or inconclusive, in the confirmation of an hypothesis or a belief. One could even ask, in the case of alleged zombies, vampires, or flying monks, whether any "evidence" at all is needed, in order to come to a rational judgement about the possible existence of these things. Unfortunately, Shadowitz and Walsh offer no help in dealing with these questions. These authors do not appreciate the fact that scientific skepticism toward the paranormal is rationally justifiable. Part of this is probably due merely to philosophical naivete. There is, however, another influence at work, and it all comes out in--wouldn't you know--chapter thirteen.

There are people who apparently need to see links and interconnections where none exist. They will seize upon some of the latest physical theories, extract from these theories some strange-sounding terms, wrench the corresponding concepts completely out of their proper context, and then they will proceed to suggest the most intellectually irresponsible pseudo-explanations (or descriptions) of alleged paranormal events or processes. Example: How does a psychic psychokinetically bend spoons? Well, the psychic's "biogravitational field" influences the "quantum foam" in the space between himself and the spoon so that the "quantum potential" can change the pattern of atoms within the metal's crystalline structure. See Bob Toben's awful cartoon-book entitled Space-Time and Beyond for dozens more examples.

The creed is a very popular one: everything is interconnected with everything else. This is supposed to apply to everything, from blades of grass to world-views. Sometimes the claimed "interconnection" is

merely some kind of analogy. Thus Lawrence LeShan sees an analogy between the world-view of modern physics and the "reality" of the clairvoyant or mystic. On this conception, paranormal happenings are not explained by (the latest) concepts from physics; rather it is thought that modern physics is entirely consistent with, and provides models and analogies for, paranormal events. And this is something that classical physics could never do. Quantum mechanics and the theory of relativity are weird, far-out, even perverse, in some of their theoretical notions. (Who can really imagine a "probability wave"? Who will really buy time-dilation?) About as weird and far-out as the performances of psychics and mediums, and as perverse as the ideas of mystics.

We are led directly to the Argument (in defense of the paranormal) from the Perversity of Physics. Shodowitz and Walsh do not call it that, but this is what Chapter Thirteen, entitled "Wonderland," is devoted to. The physicist's wonderland includes Dirac's theory of the positron, a theory which involves the notion of an unobservable "sea" of particles having negative energy! The authors explain that "our only awareness of its existence is limited to those rare, occasional bubbles of emptiness which make the surrounding sea perceptible." What an idea! And how remarkable it seems that the physics community (hard-headed, no-nonsense physicists!) should accept such a notion! The "Argument" proceeds: "Now, if one can accept that, is it so much more difficult to accept the mere possibility of the power of a witch to cast a spell?"

The analogy is absurd. Any text in relativistic quantum mechanics will exhibit in detail the considerations, physical and mathematical, which rationally motivate Dirac's theory--which was, in the first place, an ingenious attempt to unify quantum mechanics with special relativity. There is nothing in witchcraft which has anything to do with Dirac's physics--even by way of far-out analogy. But Shodowitz and Walsh do not even mention the central fact that Dirac's theory, which predicted the existence of the positron, did this by attempting to unify the two major conceptual systems of physics of the early 1930's (namely relativity and quantum mechanics). The "sea of negative energy particles" was nothing but an imaginative, heuristic, pictorial scheme invented to try to interpret some of the logical consequences of the theory which were mathematically derived from its leading ideas. Shodowitz and Walsh confuse a metaphorical interpretation of one of the consequences of Dirac's theory with the whole of the theory itself. But what freshman--or layman--in a course on "Nature and the Occult" is going to know the difference? Then again, who knows? Our physicist authors might even get away with this in a graduate physics seminar, if the will to "suspend disbelief" is turned on.

The wonderland-onslaught continues with Einstein's time dilation, Heisenberg's "Uncertainty," Schrodinger's "cat," Everett's "many worlds," and the black holes, and the worm holes. It is all from physics, and it is all as fantastic as the most avid paranormal buff could have wish-fulfilled it. Perhaps it is this abuse of interpretations of modern physical theories for the sake of making paranormal studies (dark studies, unrelated to black studies) partake of legitimacy that really constitutes "the dark side of knowledge." It is an intellectually shady, shabby business. Surely the occult, if it is going

to stand at all, ought to stand on its own. But, then, when you have two physicists who express "a sublime hope ... that is pinned to a fragile and perpetually unprovable faith: that the universe itself is a whole, with purpose and promise beneath the mystery (emphasis mine)," it may behoove those who are subjected to such an utterance to have charity.

There are many people who entertain "sublime hopes," people who hold to "a fragile and perpetually unprovable faith." These people will often refuse to keep separate realities separate. The more they reflect, the more they meditate, the more they will see great wisdom in the insipid notion that all things are interconnected. As Edgar Mitchell once said: "I refuse to say that science should be divorced from religion or from humanity. It's all one big kettle of fish and it should be approached as such."

I do not mean to be entirely negative about The Dark Side of Knowledge (though I have chosen to devote this review to the exasperating weaknesses in methodology). The book culls together an enormous amount of information about all sorts of weird ideas and practices. Chapter ten, on UFOs, is especially valuable for its high density of information bits per page, though, here again, the authors' permissiveness (we are free to believe whatever we please about UFOs) is unrelenting. But this, after all, can be offset by the critical reader himself, taking the advice (page 241) that the authors themselves find occasion to give: "One must go forward. But one must be careful. Like a porcupine making love."

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Hostage To The Devil. By Malachi Martin. New York: Bantam Books, 1977. 569 pp. \$2.25 paperback.

Reviewed by Laurent A. Beauregard

Evil is at work in the world today. With this simple motif, Malachi Martin has written an intriguing book about the possession and exorcism of five Americans. It is claimed that the five stories are true, but there is reason to think that Martin made them up. It does not matter. The book's main interest for this reviewer is the effectiveness with which it conveys a certain mentality, a kind of fundamentalist Catholicism.

Martin was once a Jesuit professor at the Pontifical Biblical Institute in Rome. It is not too surprising to find that Hostage to the Devil presupposes a conservative Roman Catholic theology. Example: Most of us, I suppose, believe that evil, unfortunately, exists. The concept of evil is not necessarily a religious or mystical notion. (The holocaust was evil. Nothing mysterious about that.) But for Malachi Martin, there exists, in some world which intersects our world, a pseudotheoretical entity called Pure Evil, or Evil Spirit. And this pervasive Evil is so conceived that it is not of human origin. In short, our Jesuit renegade believes in Satan and devils as existing independently of the human mind.

Pure Evil, or Evil Spirit, manifests itself in our world in various ways. Demonic possession is one of these ways, probably the most dramatic. But the manifestations are more often quite subtle. A person might, for example, embrace an evil notion or an heretical idea. The notion that Spirit is nothing more than psyche would itself, according to Martin, constitute a manifestation of Evil. There are many other examples: the denial of the divinity of Jesus, the notion that there is no objective difference between good and evil, the idea that all values are subjective, the "exaltation of man as animal," the denial of the distinction between masculinity and femininity. According to Martin, the wilful entertaining of any of these evil ideas can invite actual possession by some evil spirit.

It can hardly be denied, even by the non-religious, that people sometimes behave as if they were possessed. We need not be detained by the notion of possession; it is easy to imagine a plausible behavioral operational definition for it. It is procedures of exorcism, rather than the phenomenon of possession, which give pause for reflection. For Exorcism does not purport to be merely one among the various brands of psychotherapy. He who performs an exorcism will have to deal with "the shadowy dwellers of the Kingdom"--that is devils, real devils, who exist independently of the fabrications of the human mind. The unfortunate persons who are possessed will say certain things and do certain things which are absolutely diabolical. For Martin, these people say and do the things they say and do quite literally because the Devil made them say or do it.

Is exorcism nothing but crass superstition? It may be so, but the efficacy of superstition ought not to be underestimated. If dianetics often works, and if Transactional Analysis helps lots of people, what reason is there to be unduly negative about exorcism? And yet, it remains true that there is something singularly weird about exorcism.

Exorcism is no routine kind of therapy. The few priests who perform the ritual do so at a price. Invariably, these priests, the exorcists, suffer some peculiar inner torments as they try to cast out devils from people. Martin says that a part of their humanness is invariably lost as a result of daring to perform an exorcism. This may sound mysterious, but it fits with the theology which the book presupposes.

Martin's first story concerns a young woman who goes around with an S-shaped smile (a sure sign of possession). Her name is Marianne. Father Peter is performing the exorcism. But little does he realize that Satan has got something on each of us. It is the 17th hour of the ritual, and Marianne suddenly becomes violent and begins to shout obscenities. She screams to the priest in an inhuman voice: "You! You! Peter the Eater. Eat my flesh, said she. Suck my blood, said she. And you did! Peter the Eater. You'll come with us, you freak. You'll lick my arse and like it. PEEEEETEERRRRRRRRR." The last part comes out like an animal gurgle.

It turns out that when Peter was sixteen, he had had his one and only sexual experience with another person, a girl named Mae. After

an afternoon of lovemaking with young Peter, Mae playfully nicknamed him "Peter the Eater." But she vowed: "Don't worry. No one will know how you made love to me. Only me." Apparently she was wrong. The "shadowy dwellers of the Kingdom" had known about it all along. So Father Peter gets more than he bargained for when he exorcises the likes of Marianne. Part of his humanness is drained from him, partly because he had forgotten that Satan has got something on each of us. Messing with the Devil is serious business.

But how did Marianne come to be possessed in the first place? She was a shy, retiring, sort of girl, interested in physics and philosophy. She had a passion to get at the full truth about things. But this yearning was accompanied by a special character flaw. As Martin relates it, when Marianne would argue, there was "a disturbing viciousness, a stony-faced cunning with words ... alternating with a sardonic silence and smirking satisfaction." We all know the type: the person who is very bright, but extremely obnoxious. For Martin, this was a person whose "logic" was "not normal for her years." This could mean either of two things: (1) she was irrational; or (2) her logic was so incisive that everybody around her couldn't take it. Either way, she went too far. She invited demonic possession. The name of her demon was The Smiler. And The Smiler, according to Martin, knew all about Father Peter ...

Martin's second story concerns two priests, Father Jonathan and Father David. It is Jonathan who becomes possessed, and it is David who eventually has to perform the exorcism, but only after he has had to pay a characteristic price. In this case, it is a career in anthropology (it could have been any one of the social sciences) that has to be given up. Malachi Martin's fundamentalism is such that, when the chips are down, one really has to choose between commitment to religion and commitment to science. There is something curiously refreshing and honest about this attitude. The currently fashionable chore of pseudoreconciliation of science and religion is not something with which Martin can sympathize.

The problem with both Jonathan and David was that they were flirting with a certain heresy. The heretical idea was that the sacraments were nothing more than human expressions, and that the sacraments did not constitute signs of supernatural bestowals of divine grace. Now one must fully grasp the perversity of this diviant belief. It flirts with a denial of the divinity of Jesus who is "the source of all humanness." Humanness as opposed to animalness or bestiality. The denial of the divinity of Jesus, Martin says, gives rise to "the exaltation of man as an animal." And this exaltation of man as animal is precisely what the Darwinian theory of evolution is supposed to be suggesting to any of us who would dabble in it at the danger of our immortal souls.

In this way, Malachi Martin exhibits antiscience. His two priests, Jonathan and David, had carried "intellectual freedom" too far. We are told that "intellectual freedom has its own chains, its own brand of myopia." And we are warned against pursuing "a mere triumph of logic." For such triumphs "always seem to carry with them a neglect both of the human and of the essence of spirit." And so, that ubiquitous pseudo-theoretical entity, Pure Evil, or Evil Spirit, awaits possession of

those who fancy that all mysteries can be solved by "rational or scientific or quantifiable explanations."

If you want to avoid inviting possession, then you must relieve yourself of the belief "that there can be no truth important to man beyond what is rational." And, as Martin explains it, free will is of the essence here. When a person becomes possessed, there is something in the person that chooses to yield to the forces of Evil. Martin puts it this way: "I can choose evil for no other reason or motive than that I do choose evil. Some apparently do." This means, I think, that in our world, there are bad guys. A bad guy is a person who, in his right mind, actively chooses to think and do evil. What an idea! Even Socrates couldn't handle that one. But Malachi Martin's old-time Catholicism has no difficulty with the notion.

But let us not get too philosophical. Father Jonathan was in trouble when the cloud of heresy and deviance came to envelop him totally. Just imagine a Catholic priest baptizing infants in the name of the Sky, the Earth, and the Water. (It's supposed to be the Father, the Son, and the Holy Spirit.) And, in the confessional, Father Jonathan, instead of absolving people of their sins, would confirm them in their natural wishes.

The name of the demon who possessed Father Jonathan was "Mister Natch," Natch being an abbreviation for 'Natural.' At Mass, at the consecration of the bread and wine, the solemn words 'This is My Body' became 'This is my Tombstone.' And 'This is My Blood' turned into 'This is my Sexuality.' According to Catholic theology, any such sacrilegious parody of the words of Jesus Christ will prevent true transubstantiation from taking place. This means that those who received communion from Father Jonathan while possessed by Mister Natch swallowed mere bread, rather than the body of Christ.

It may be objected that the enlightened Catholic will not care much about the subtleties of transubstantiation. The important thing, when receiving communion, is to get into the right head-space. But even here, Father Jonathan was not making things very easy for his parishioners. On one occasion, his hands became rigidly clamped to the chalice, and he cried, and he groaned loudly. People became upset. The pastor was called--to arrive just in time to see Jonathan urinating and defecating at the altar. Mister Natch had taken over. The pastor strongly suspected that Jonathan might be possessed.

What caused this possession and the awful behavior that accompanied it? Enter Father David, the learned anthropologist, a former teacher of Jonathan's, who, when asked by the bishop to look into the case, found that there was nothing wrong either with Jonathan's ideas or with his spirituality. When Father David, however, said to the bishop, "If Jonathan is in error, then so am I," then the bishop began to wonder about both priests. It was with a great air of earthy, parochial, wisdom that the bishop posed to David one simple-minded question: "Tell me, Father. Is evolution as much a fact as, say, the salvation of us all by Jesus?"



At the time, David muttered (quite correctly) something about comparing apples and oranges, but his faith in science was shaken. After a lengthy self-exorcism, David successfully exorcised Jonathan. The cause of one priest's possession and another priest's near-possession was toying around with science (evolution) and religion (divinity of Jesus) in a way that had been pioneered by Teilhard de Chardin, the Jesuit paleontologist and mystic whose writings had been proscribed by Church authorities.

Let us move on now to Martin's third story. For here, we have something which--whatever else might be said about it--has a certain "relevance" which will quickly become apparent. It is about a transsexual, Richard/Rita, who is obsessed with the mystery of femininity. It is also about a priest, Father Gerald, whose unfortunate lot it was to exorcise Richard/Rita from an especially nasty demon known as "the Girl-Fixer." Gerald, unlike "Peter the Eater," was a virgin. And Martin capitalizes on that fact--the virginity of Gerald--to paint just about as obscene a picture as it is within the power of purple prose to convey.

At a crucial point in the tedious, drawn-out, session-by-session, procedure of exorcism, a priest's personal weakness makes good grist for the mill of any self-respecting possessing demon. Poor Father Gerald! He got himself thoroughly violated by the Girl-Fixer. His clothing was ripped to shreds. He felt stabbing pains in his rectum and genitals. And during this three-second ordeal, he emitted semen, blood, and excrement--while Richard/Rita growled such things as: "You're my sow. I'm on you. My snout is giving you the best blow-job in the Kingdom. Shoot, sow! Spread your legs...." Hollywood has not yet portrayed on film anything like what is in the imagination of Malachi Martin.

Father Gerald had to be carried out on a stretcher--the one that had been intended for Richard/Rita. After a long rest, the priest was able to bring the exorcism to a successful conclusion. In the process, Malachi Martin makes the Evil Spirit (Girl-Fixer) or Richard/Rita say some remarkable things. Has the reader ever had negative thoughts about certain fringes of the Women's Liberation Movement? Do some women tend to go too far? Might they be inviting possession by such demons as invaded Richard/Rita? How did Evil Spirit come to trap Richard/Rita in the first place? The demon, in response to a firm command--in the name of Jesus--by Father Gerald, confessed all:

"We start with self-growth, self-discovery. We tell 'em: First, you must be yourself, find yourself, know who you are. Then they stick their noses in their own navels and say: I like my own smell. Then, that woman alone, woman alone, is the thing to be. She has it all within her, but man has it all hanging out. To be a woman is to be completely independent, we tell them. No guilt. Not masculine. Not feminine. Complete in herself. Cunt and clit in one. Free of guilt feelings, of all responsibility to a man .... Let them think they are past ambition of ecstasy on a prick, but totally sensual because they can laugh at love and all its makings; that they are developing their own self-contained skills, that her own intimacy with herself is the whole world, without the intrusion of the male; that she is full of internal spaces in herself, infinite spaces, infinite enough to contain

all she could ever wish to have or be ...."

In this way, Evil Spirit gets its message across. In this way as well, Malachi Martin gets his message across. And, finally, it is in this way that the reader comes to suspect that Martin himself might be possessed.

I must forego reviewing the remaining two stories except to say that they are as intriguing as the first three. Language--and imagination--can do wonders with a mentality which is not much higher than that of Archie Bunker. What is intellectually wrong with the book is nicely exemplified by the grand hermeneutical circle which Martin's intriguing notion of total possession exhibits. (Martin's five stories were about cases of partial possession.) When a person is possessed by the devil totally, then there is no possibility of successful exorcism. This makes perfect sense. It is precisely those persons who espouse rationality and logic and scientific method whose possession is total. For some of us there is no hope. But let it not be doubted that exorcism would work quite well for Malachi Martin, should--god forbid--the occasion ever arise.

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Sun Myung Moon and the Unification Church. By Frederick Sontag.  
Nashville, TN: Abingdon, 1977. 224 pp. \$8.95.

Reviewed by Roy Wallis

Sontag's account of Moon and his followers is a surprisingly feeble one. He was given access to Unification Church centers in several countries, to documents not widely available, and to Moon himself for a nine-hour interview. Out of that, plus many interviews with opponents of and defectors from Moon's movement comes a bland and superficial defence on theological grounds, and no addition of any substance at all to our empirical knowledge of the movement. There is a complete lack of any analytical insight into the movement, its development, or the motivations of its members. There is extensive quotation from members, documents and from Moon himself, but purely as illustrative and descriptive "filler" not because these quotations provide evidence for, or examples of, any significant explanatory point. I do not fault the book because of Sontag's evident sympathy with the movement but because he has not asked anything particularly interesting of it. Only if one is concerned about whether the Unification Church is truly religious and whether Moon may be inspired by God will they get anything from this book. If they seek insight into and explanation of its origins, development, mode of operation, organisation structure, machinery of social control, or the sources of its appeal to the young in the late 1960's/early 1970's, they will be wasting their time in reading it.

The New Soviet Psychic Discoveries. By Henry Gris and William Dick.  
Englewood Cliffs, NJ: Prentice-Hall, 1978. 304 pp. \$10.95.

Reviewed by Martin Ebon

I have very little patience with friends who criticize the limits or editorial slant given a news report, without taking the type of publication into account. If you're upset by the smart-aleck approach of Time magazine, why don't you read U.S. News & World Report instead (where you find a different kind of approach -- I won't even call it "bias"). The same is true of books: don't argue with an author, telling him what kind of book he should have written (or, what book you would have written in his stead), but view it in the overall context of its -- inevitably circumscribed -- origin and intent.

In the case of The New Soviet Psychic Discoveries, the opportunities and limits facing the co-authors are clearly indicated by their acknowledgements: they thank the National Enquirer, who paid for their six visits to the Soviet Union, and the Novosti Press Agency "for clearing the way for us to do our job." As Novosti is a Soviet government news agency, and as the Enquirer has achieved its vast circulation by aggressive entertainment journalism, the reader of Gris and Dick's book knows from the start what to expect.

As the authors weren't writing for the Journal of Parapsychology, we can't very well ask them to report on carefully designed and evaluated quantitative experiments; and as they were guided by their Soviet colleagues from Novosti, it would be naive to look for interviews with scientists engaged in such delicate matters as animal telepathy experiments at government research institutes. Still, the pattern is broken, now and then. They report talks with Barbara Ivanova, who is at odds with the Moscow "Establishment" and wants to emigrate. And there is a cautiously-reported interview with Natalia Bekhtereva, the Leningrad neurologist of international standing (granddaughter of the pioneer brain researcher, Vladimir Bekhterev).

Gris and Dick maintain a consistently up-beat journalistic style, emphasizing the "firsts" they have achieved in talking to one or another Soviet researchers. But there are also touches of genuine three-dimensional reporting, as when they describe their encounter with Semyon Kirlian in Krasnodar. Together with his late wife, Valentina, he was responsible for developing what is now known as "Kirlian Photography," a controversial method of photographing emanations from animal, vegetable and mineral materials. (The authors quote the paper Evening Leningrad as writing on March 27, 1974, about "the idle Krasnodar couple who waste everybody's time with harmful photographic hocus-pocus.")

The two Enquirer reporters, with Novosti help, did get to see

Kirlian, an old man who had to suffer the patronizing pomposity of his superior, one Comrade Dubonosov. They also talked to other relatively prominent Soviet parapsychologists, such as the Moscow physicist Vladimir Adamenko and the Alma Ata biologist Victor Inyushin, with whom they had an intriguing telephone interview. Both men appear to engage in a variety of experiments designed to find concrete applications of the "Kirlian Effect" and other phenomena in "bio-communication."

Actually, less than half the book is devoted to "psychic discoveries." Much of it deals with people who, like their counterparts in other areas of the world, dabble in speculation about extraterrestrial civilizations, "the missing Planet Phaeton," or trailing an "Abominable Snowman" in the Caucasus. There are two chapters on hypnotherapy, one dealing with children, the other with adults. The Leningrad Department of Treatment of Neuroses in Children, at Poliklinia No. 26, deals with many cases of stammering, and case histories often indicate traumatic family patterns. Hypnosis, according to the people interviewed, is used as a last resort; it has been successfully applied in bronchial asthma, skin deficiencies, eye tics, etc.

Gris and Dick made their trips to the Soviet Union before Los Angeles Times correspondent Robert Toth was arrested in Moscow in 1977 for receiving a "secret" parapsychology paper from one Valery Petukhov. The authors, in their conclusions, suggest that, as no one familiar with the Soviet parapsychology scene had ever heard of Petukhov, he was a plant to ensnare Toth.

Soviet parapsychologists walk a narrow, and changing, path. The Great Soviet Encyclopedia (1974) states: "What is referred to as parapsychology should be subdivided into two areas. One is phenomena that realistically exist but have yet to be scientifically explained. The other is fakery advertised as supernatural occurrences by mystics and charlatans; these people need to be exposed and discredited." Gris and Dick cite this definition, while they try to make sense of the frequently contradictory position taken by Soviet authorities on the matter. On the one hand, some dubious practitioners of the psychic are available to visitors, including such journalists as the two Enquirer reporters; on the other hand, there has been little if any serious exchange of data in recent years.

Certainly the Soviet position on parapsychology is anything but monolithic; Gris and Dick have done an extensive reportorial job, within the limits they set themselves; if anything, details in terms of personalities and settings are more impressive than one might have expected. considering the circumstances under which the authors undertook their task, they serve the discriminating reader extremely well.

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Space-Time Transients and Unusual Events. By Michael A. Persinger and Gyslaine F. Lafreniere. Chicago: Nelson-Hall, 1977. 267 pp. \$9.95.

Reviewed by William R. Corliss

In essence, Persinger and Lafreniere have collected 6060 "unusual" events, coded them in space and time coordinates, and asked a computer to sort them out geographically and along a time axis. The last portion of the book also presents a survey of various geophysical, astrophysical, and "space-time transients" that might have triggered the events. Since I feel content with the sorting abilities of modern computers and really have no quarrel with cosmic speculations of any sort, as long as they are recognized as such, I will dwell mainly upon the 6060 events themselves. And here I see some problems.

Let us assume that triggering forces (causes) do exist in the cosmos and that they do stimulate events (effects). Must these events be "unusual" as inferred in the book's title? We now blunder into a minor semantic thicket. Some events selected by the authors are certainly unusual, such as the 1927 appearance of an etching of Christ on a New Mexico window pane. I would also term this event "anomalous" and "Fortean," meaning beyond the capability of today's Science to explain in the first instance and, in the second, as something good old Charles Fort would have collected. The question I have been leading up to is: Why restrict the events triggered by cosmic forces to unusual, anomalous, or Fortean events? There is no reason at all. Did my car fail to start this morning because of some dislocation in space-time? Why not? I don't mean to belittle data from the far frontiers of Science (I spend most of my time searching for them), but there is no a priori reason why the most usual and common events may not flash into existence in concert with space-time transients. Thus, I feel that the authors have unnecessarily excluded much relevant data.

I must admit that most of the 6060 events chosen by Persinger and Lafreniere are fascinating. I have come across many of them in my own library forays. The data presented that do not ring a bell are most frustrating because they are not referenced. Where does one learn more about the window etching of Christ? Or the rainbow-like colors observed near the ground prior to a Japanese earthquake? No one can check out these tantalizing morsels; and this is a major drawback of the book.

The literature, whether scientific or Fortean, is full of lies, hoaxes, distortions, and exaggerations as well as kernels of true anomalies. Here, I am discussing data quality. Even the best computer spews out nothing better than that fed into its maw. I'm sure Persinger and Lafreniere must recognize this problem. If we knew whether the data came from newspapers or the pages of Physical Review, we might be better able to judge data quality. Of course, it is really a matter of degree of con-

fidence because even scientists concoct and fudge data. One must begin somewhere, but without references we cannot tell where the authors of this book started and whether what they took is reliable and true.

The book's title infers that the 6060 events are "unusual." This, of course, is a matter of opinion and, as stated earlier, may not be a criterion in identifying space-time transients. My opinion in many instances is that the events are not unusual---curious perhaps, but not unusual. I mention "hundreds of birds fly down chimney" as an unusual event from the book that seems rather usual to me, for I know that chimney swifts customarily do this during migration. My point is that many unusual events fade away when expertise is brought to bear.

Why exactly do swifts fly down chimneys? To simply say that this is a "usual" event is not Science. No ornithologist has bothered to come up with a General Law of Chimney Swift Behavior, and probably none should. To their credit, Persinger and Lafreniere are searching for much more general laws governing the universe. Now this is Science and as Jacques Barzun irreverently put it, it is also "glorious entertainment." And I did have fun reading Space-Time Transients. I recommend the book for its speculations about glitches in the cosmic fabric alone. Also, the authors' methodology in sorting and visually presenting their data is certainly one way to grasp at eternal verities. I do wonder, though, about the data. If only God had filled the universe with hard, unassailable facts instead of all these fuzzy, amorphous, ephemeral glops.

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The UFO Enigma: The Definitive Explanation of the UFO Phenomenon.  
By Donald H. Menzel and Ernest H. Taves. Garden City, NY:  
Doubleday, 1977. 297 + xiv pp. \$8.95.

Reviewed by J. Richard Greenwell

Well over 200 books on the subject of unidentified flying objects (UFOs) have been published since 1950. Only four, however, have attempted to explain UFO phenomena as simple misidentifications or hoaxes; two of these were written by Donald Menzel. The present book, also by Menzel (published shortly after his recent death), is the fifth.

While co-author Ernest Taves, a psychoanalyst, is perhaps less well known, Menzel had a background which eminently qualified him to analyze the sort of data to be found in UFO reports. He joined the Harvard faculty in 1932, later becoming the head of the astronomy department and director of the Observatory. Besides his expertise in stellar and solar astronomy, he was an expert in wave mechanics and atomic spectra, planetary atmospheres, and radio propagation. During World War II, he served as chairman of

the Wave Propagation Committee of the Joint and Combined Chiefs of Staff, which tackled many thorny communications and radar problems. He later served as president of the American Astronomical Association, and played an active role in the International Geophysical Year.

This book, essentially, represents an interesting statement by a leading physical scientist on an assortment of legitimate and illegitimate phenomena. As a comprehensive analysis of UFO phenomena, however, it lacks both depth and balance. The work is perhaps understood best in the context of Menzel's two previous books on the subject: Flying Saucers (Harvard, 1953), and The World of Flying Saucers (Doubleday, 1963), co-authored with Lyle Boyd. In the former, when rejecting the extraterrestrial hypothesis (ETH) for UFOs, he stated that "we might as well invoke the assistance of ghosts, witches, hob-goblins, or various pagan gods," adding that "any natural explanation, however incomplete or tentative it may be, is highly preferable to one that invokes the aid of fairies, ghosts--or interplanetary saucers." In science, however, one should expect that hypotheses are not postulated because they are preferable, but, rather, because of the nature and extent of the supporting evidence. Furthermore, the ETH is a perfectly acceptable scientific hypothesis. Hob-goblins and fairies are not. In the 1963 book, Menzel and Boyd described the performance of reported UFOs as belonging "to the realm of magic, not science." The argument that advanced civilizations could develop such technology was dismissed as "irrational."

The new book, as the previous two, contains interesting chapters on radar anomalies, meteorological optics, meteorics, and physiological optics. Other chapters address such diverse subjects as the Bible, parapsychology, von Daniken, and--yes, the Bermuda Triangle. In fact, only two chapters and one appendix (43 pages in total) are dedicated to the actual analysis of, and possible explanations for, UFO reports (mainly those left unresolved by the University of Colorado UFO project in the late 1960's). The critical reader will find many of these explanations satisfactory; others he will find less so.

One senses, throughout the book, a certain irritation with the Air Force UFO personnel for often discounting or ignoring Menzel's theories. Sharp criticism, a whole chapter of it, is reserved for the news media, which "continue to mislead some of the public," and has been "enormously irresponsible." A chapter on the origin and evolution of life on Earth, and possibly elsewhere, concedes the probability of advanced intelligence throughout the galaxy, and even proposes the physio-anatomical characteristics of such beings. These speculations are consistent with evolutionary anthropology. While Menzel and Taves reasonably assume that life elsewhere would probably be carbon-based and contain the ATGC nucleotides, they ignore gene flow and genetic drift in a brief discussion of evolutionary forces.

In their summation chapter, the authors conclude: "It seems to us most unlikely that we have been, or shall be, visited by aliens from other planetary systems." They cite the vast distances between the stars (at least in our part of the galaxy), the enormous energy requirements, and the time constraints. While this conclusion, like the extraterrestrial hypothesis, is an acceptable argument, the authors are unkind to those who prefer to keep an open mind on the subject. Such agnostics are immediately branded as "believers," who "are unable to accept obvious scientific explanations because of near-religious need to believe in the ETH." The open-minded person feels like Ben-Hur confronted with Messala's ultimatum: "You are either with me or against me! Which is it to be?"

Menzel's interest in UFOs dated back to the late 1940's, when the Air Force first began examining the reports. There was concern that foreign powers could be deploying new weapons systems in American skies. This military concern overrode the scientific questions, which, contrary to what many believed at the time, were hardly addressed (although numerous officers running the UFO project in the late 1940's and early 1950's became convinced that extraterrestrial visitation was occurring). While UFO responsibility was located within the highly specialized Air Technical Intelligence Center (now Foreign Technology Division), the project ultimately became little more than a small public relations office, always subject to the whims of the then current higher Air Force echelons in the Pentagon, and unable, both financially and intellectually, to conduct real research on the data it constantly received. Thus, it tried to "solve" every case it possibly could, even when the solution might be more bizzare than the reported UFO itself. The project's sole and part-time scientific consultant for over 20 years, an astronomer named Allen Hynek, today admits having tolerated this unscientific approach in order not to lose access to the data.

In 1953, the Central Intelligence Agency convened a scientific panel to review some of the then-classified Air Force data. Composed of physicists H.P. Robertson, who chaired, Luis Alvarez, Lloyd Berkner, S.A. Goudsmit, and astronomer Thornton Page, the panel met for four days and concluded that UFOs did not "constitute a direct physical threat to the national security," and did not indicate "a need for the revision of current scientific concepts." Concern was expressed that national security communications channels could become clogged by false UFO reports, and that a potential enemy could generate mass UFO hysteria for psychological warfare purposes. Those were, after all, the McCarthy days.

The Air Force continued a low-key interest until the mid-1960's, when, following many new reports and intense pressure from the public, the news media, and the Congress (Representative Gerald Ford himself accused the Air Force of deceiving the public on UFOs), a contract was awarded to the University of Colorado for a thorough two-year study. The project, directed by the late physicist Edward Condon, who declared that the subject was nonsense before the study had barely begun (he preferred the pronunciation "oofu" because they were "goofy"), resulted in the firing of two senior scientific staff members, a psychologist



and an electrical engineer, for insubordination, and nation-wide accusations of whitewash. In the 1,465-page final report, Condon concluded that further study of UFOs "probably cannot be justified in the expectation that science will be advanced thereby," and, curiously, that "it is safe to assume that no intelligent life elsewhere outside of the solar system has any possibility of visiting Earth in the next 10,000 years."

The report was reviewed by a special panel appointed by the National Academy of Sciences, chaired by the late Gerald Clemence, an astronomer at Yale. In January of 1969, the NAS panel approved the Colorado methodology and conclusions, and added one of its own: "The least likely explanation of UFOs is the hypothesis of extra-terrestrial visitations by intelligent beings." The panel did not disclose how this determination was reached. But the Air Force, relieved by the opportunity these conclusions afforded, folded its Aerial Phenomena Branch later that year, effectively getting the federal government out of the UFO business, much to Menzel's delight.

A serious question which may now be raised is the following: In their desire to attribute all UFO data to misidentifications or hoaxes, would those of the Menzel school of thought recognize evidence for the ETH if they were to see it? A revealing statement in this respect appears in the chapter on meteorological optics in the Menzel and Taves book, which compares those UFOs reported by pilots to be under intelligent control to rainbows: "This reported (intelligent) behavior of the UFO is, actually, the key to its true nature; it is not a material object, but only a visual image centered in the observer's eye." UFOs described as being under intelligent control may therefore be automatically ruled out as being under intelligent control!

With Menzel's passing, there are no professional scientists actively discrediting UFO reports. The mantle of chief UFO debunker must now fall to Philip Klass, an aerospace journalist, who has authored the only other two anti-UFO books. For those who favor that school, the Menzel and Taves book will be a valuable reinforcer. For those who uncritically accept the ETH, or other even more esoteric hypotheses, it will be a blasphemy. And for those with an open mind, it will be educational. The book is well referenced with notes and has an index.

L'Hôte Inconnu Dans Le Crime Sans Cause. By Émile Tizané. Paris: Tchou, 1977. 307 pp. No price given, paperback.

Reviewed by Ron Westrum

While poltergeist reports remain as controversial as ever, one researcher who has done much to collect and investigate poltergeist cases merits our attention for his unique position. He is Émile Tizané, formerly a commandant of the French Gendarmerie. Contrary to what one might expect, Commandant Tizané pursued his career in the Gendarmerie and his poltergeist research concurrently. A great many poltergeist cases in France are investigated by the Gendarmerie, which is a sort of cross between the state police and the National Guard. (The Gendarmerie also investigates UFO cases) Tizané was able, thanks to his position in the Gendarmerie, to get access to many of the cases in police files, and over the years has written a number of books reporting these cases. It should be noted that in most of the cases reported in these books, the witnesses were forced to sign a sworn affidavit of their observations to the police. This again gives them a special interest. Perhaps the most interesting of his books is Il n'y a pas de Maison Hantés (There are no haunted houses), which reports how he initially came to be involved in poltergeist research.

The present work is evidently the reprint of an earlier book, and there is no indication (other than the preface) that much has been added since the original publication in 1950. Nonetheless, it remains a very useful book. The cases are arranged with reference to the alleged effects, and thus the book constitutes a veritable catalogue of poltergeist behavior, with reference to French cases. In addition, the same types of effects elicited in the course of psychic research experiments are discussed after the poltergeist cases. Personally I find the addition of the "experimental cases" somewhat disconcerting, given the ability of mediums to fool researchers who study them.

Tizané separates poltergeist cases into five groups:

- 1) those in which no idea of mystification enters the minds of the witnesses during the course of the events
- 2) the localization of the phenomena around the subject leads to a suspicion of mystification, without any proof of it resulting
- 3) the subject is caught in the course of mystification
- 4) the effects end without any mystification being proved. However, the subject confesses, contrary to what it seems possible for him to have done
- 5) the "force" attempts to get the subject to do something which would result in his being accused of mystification

Thus rather than the usual alternative of "real versus fraudulent," Tizané suggests that poltergeist cases lie along a continuum of in-

volvement with fraud. It is evident that he feels that "something is really there," but contrary to the usual explanation among parapsychologists in this country (spontaneous psychokinesis), Tizané believes that the poltergeist is really a separate, distinct entity. He also believes that the actions of this entity result in certain kinds of impulsive crimes--he blames on the poltergeist what psychoanalysts would blame on the unconscious. In the preface he unfortunately includes Kirlian photography and the "plant consciousness" experiments of Cleve Backster in his theoretical discussion.

The strength of this book is clearly in its presentation of data to which Tizané's unique position has granted him access. Its weakness lies in Tizané's attempt to explain the phenomena that he reports.

### BOOKS BRIEFLY NOTED\*

\**Listing here does not preclude later full review.*

- Bainbridge, William Sims, Satan's Power: A Deviant Psychotherapy Cult. Berkeley, CA: University of California Press, 1978. 312 pp. \$14.95. An excellent sociological ethnography of the rise and fall of one of the most publicized and active religious cults of the 1960s. Despite the title, meant to protect the identity of the group and the author's informants, the study is not of a Satanic cult such as the Church of Satan.
- Blackmore, Susan, Parapsychology and Out-of-Body Experiences. East Sussex: Society for Psychical Research and Transpersonal Books, 1978. 33pp. \$2.50 paperback. A very useful little booklet reviewing the literature on OBEs in which the author is skeptical of the hypotheses of a subtle body and of ESP as explanations but favors an explanation in terms of a construction from memory. Includes an excellent bibliography.
- Bronowski, Jacob, The Origins of Knowledge and Imagination. New Haven, CT: Yale University Press, 1978. 144pp. \$7.95. The six Silliman Foundation Lectures of the late mathematician and scientist. ZS readers will especially enjoy his lecture on "Error, Progress and the Concept of Time" in which he argues against science as a closed system and in favor of imagination and the willingness to make errors for the sake of progress.
- Budge, E. A. Wallis, Amulets and Superstitions. N. Y.: Dover, 1978. 543 pp. \$6.00 paperback. A reproduction of the classic 1930 volume by a foremost Egyptologist of the British Museum. The subtitle tells it all: "The original texts with translations

and descriptions of a long series of Egyptian, Sumerian, Assyrian, Hebrew, Christian, Gnostic, and museum amulets and talismans and magical figures with chapters on the evil eye, the origin of the amulet, the pentagon, the swastika, the cross (pagan and Christian), the properties of stones, rings, divination, numbers, the Kabbalah, ancient astrology, etc." Highly recommended.

Christopher, Milbourne, Milbourne Christopher's Magic Book. N. Y.: Thomas Y. Crowell, 1977. 240 pp. \$10.95. An excellent general introduction to conjuring which includes some particularly good mentalist effects of likely interest to ZS readers.

Clark, Jerome, and Loren Coleman, Creatures of the Outer Edge. N. Y.: Warner Books, 1978. 239 pp. \$1.95 paperback. A general survey of periodic reported sightings of all sorts of strange creatures, the authors seek to tie these together into the speculation that both UFOs and creature sightings are generated by the same paranormal mechanism. Fascinating stuff and fun even if you remain skeptical about both the reality of the things reported and the authors' suggestion of a common parallel denominator. The common denominator may be there, but it may be normal error rather than paranormal mechanism.

Cooper, Basil, The Werewolf in Legend, Fact and Art. N. Y.: St. Martin's Press, 1977. 240 pp. \$8.95. A very nice compendium of lycanthropic lore and excellent companion to the same author's similar book on vampires. Recommended.

Culbertson, James T., Sensations, Memories and the Flow of Time. Santa Margarita, CA: Cromwell Press, 1976. 189pp. \$8.00 paperback. A fascinating but very unorthodox theory of sensations and memories as not images in the brain but as on the surfaces of the perceived objects which the author proposes not as a philosophy of mind but as a testable, scientific theory. The theory also accounts for psi phenomena.

Damrell, Joseph, Seeking Spiritual Meaning: The World of Vedanta. Beverly Hills, CA: Sage, 1977. 251pp. \$6.95 paperback. A remarkable ethnography of a Vedanta temple in America by a sociologist who provides us with a phenomenological description of his own involvement as it overcame his initial detachment.

Dean, Geoffrey, with Arthur Mather and others, Recent Advances in Natal Astrology: A Critical Review 1900-1976. Southampton, England: Camelot Press, 1977. (Distributed in N. America by Para

Research, Inc.; Whistlestop Mall; Rockport, MA 01966.) 598pp. \$25.00 paperback. A major attempt to examine the scientific validity of the empirical evidence for astrology. [This volume will be the subject of a review symposium in the next issue of ZS.]

Duncan, Ronald, and Miranda Weston-Smith, eds., The Encyclopedia of Ignorance. NY: Pergamon Press, 1978. 433+xiii pp. \$30.00 hardbound; \$15.00 paperback (also available in two paperback volumes at \$10 each). A series of essays on a wide variety of topics by scientists calling attention to our vast areas of non-knowledge. A healthy antidote and reminder of the unsolved mysteries of normal (as opposed to paranormal) science.

Ebon, Martin, ed., True Experiences with Ghosts. NY: Signet, 1968. 128pp. \$1.25 paperback. A very readable collection of close encounters of the apparitional kind, Diverse and entertaining.

Gettings, Fred, Ghosts in Photographs. NY: Harmony Books, 1978. 153pp. \$10.95. An excellent history, well illustrated, of spirit photography. The debunking of the Cottingley fairy photos may be the highlight of the book to many readers.

Greeley, Andrew M., The Sociology of the Paranormal: A Reconnaissance. Beverly Hills, CA: Sage, 1975. 88pp. \$3.00 paperback. An unusual study based on survey analysis, this book deserves more attention than it has received. Though the study might have benefited from greater familiarity with the parapsychological and psychical research literature and its own past surveys and categories for analysis, the data compiled here is quite valuable.

Griggs, Edward N. C., and Gerald M. Born, compilers, Occult Bookstores and Suppliers Directory: U.S.A. and Canada. Chicago: Stonehenge Books, 1977. 29pp. \$4.95. paperback. A very useful little directory, alphabetically listing by state and town. Available from Stonehenge Books, Box 6678, Chicago, IL 60680, which also publishes the Stonehenge Digest, a series of annotated bibliographies of available books on special occult topics every month.

Hardwood, Alan, Rx: Spiritist as Needed; A Study of Puerto Rican Community Health Resource. NY: Wiley Interscience, 1977. 251pp. \$18.95. An excellent anthropological examination of an indigenous therapy system and consideration of its prac-

tical implications for health services along with the broader questions of the nature of **psychological healing**.

Harrison, Michael, Fire From Heaven: A Study of Spontaneous Combustion in Human Beings. London: Pan Books, 1977, revised edition. 287pp. 80 pence; \$1.95 in Canada; paperback. Excellent Fortean by the well known literary sleuth and Sherlockian, his "solution" will not satisfy the skeptical, but the material is fascinating.

Hitching, Francis, Dowsing: The Psi Connection: Garden City, NY: Doubleday Anchor Press, 1978. 306pp. \$3.95 paperback. A very useful survey of the recent dowsing literature.

Jospe, Michael, The Placebo Effect in Healing. Lexington, MA: D. C. Heath Lexington Books, 1978. 171pp. \$15.95. An important survey of a major element in healing too long neglected by researchers. A very welcome work. Recommended.

Kaslof, Leslie, compiler, Wholistic Dimensions of Healing: A Resource Guide. Garden City, NY: Doubleday Dolphin Books, 1978. 295pp. \$7.95 paperback. A general directory of alternative therapeutics of all kinds from such well known practices as chiropractic and acupuncture to things like temporomandibular joint technique and psychosynthesis. Though useful as a source of addresses and names, the compendium is quite uncritical and ignores contradictions between the various claims for healing as though the claim of holism surmounts such problems. Lumping alternative practices with a likelihood of advancing medical progress along with those likely to be mere charlatany may do more harm than good. The book may therefore prove useful but irresponsible in doing no more than urging caveat emptor upon its readers.

Krippner, Stanley, and Alberto Villoldo, The Realms of Healing. Millbrae, CA: Celestial Arts, 1976. 336pp. \$7.95 paperback. An exploration of non-medical healing which is packed with information which, though it will not convince the skeptical, makes the book a valuable study for anyone interested in this area. The defenses against debunking attempts (especially the response to William Nolen's "expose" of psychic surgery) should be of special interest.

Lakatos, Imre [edited by John Worrall and Gregory Currie], The Methodology of Scientific Research Programmes; Philosophical Papers, Volume I. NY: Cambridge University Press, 250pp. \$19.95. The posthumously edited first volume of writings of the distinguished philosopher of science much of whose writings are

concerned with the demarcation of science from pseudo-science. Highly recommended to anyone seriously concerned with these issues.

Lanners, Edi, ed. (trans. and adapted by Heinz Norden), Illusions. NY: Holt, Rinehart and Winston, 1977. 159+ pp. \$6.95 paperback. A marvelous graphic volume presenting just about every optical illusion available. Since such errors in perception are highly relevant to "paranormal" effects, this book should prove of special interest to ZS readers.

LaPatra, Jack, Healing: The Coming Revolution in Holistic Medicine. NY: McGraw-Hill, 1978. 235pp. \$9.95. Another useful if uncritical survey of over 50 alternative approaches to healing.

Larsen, Egon, Strange Sects and Cults: A Study of Their Origins and Influence. London: Arthur Barker Ltd., 1971. 202pp. 2 Pounds. A popular and somewhat sensationalistic survey of exotic groups from the Assassins to the Aetherians.

Laurence, Theodor, Satan, Sorcery and Sex. West Nyack, NY: Parker Publishing Co., 1974. 200pp. \$6.95. A highly sensationalist account of modern witchcraft and Satanism. Typical propaganda study meant to appeal to fundamentalists.

Leonard, George, The Silent Pulse: The Search for the Perfect Rhythm that Exists in Each of Us. NY: E.P. Dutton, 1978. 210pp. \$8.95. A highly speculative and imaginative work anchored in some interesting recent research, mostly viewed uncritically. Probably more poetry than science in its outlook.

Lieber, Arnold L., The Lunar Effect: Biological Tides and Human Emotions. Garden City, NY: Doubleday Anchor Press, 1978. 168pp. \$7.95. An uncritical but useful review of possible lunar effects on terrestrial life. Excellent companion volume to E. L. Abel's Moon Madness.

Ludwig, Jan, ed., Philosophy and Parapsychology. Buffalo, NY: Prometheus Books, 1978. 454pp. \$16.95 hardbound, \$8.95 paperback. An excellent collection of neatly organized reprints of first-rate articles covering the important areas of philosophical debate about the status of parapsychology. Highly recommended.

McLean, Charles, The Wolf Children. NY: Hill and Wang, 1978. 319pp. \$10.00. A highly readable and entertaining account of the alleged wolf girls of Mindnapore and an analysis of the

credibility of the tale. Extremely well done.

McEwan, Graham J., Sea Serpents, Sailors & Sceptics. London: Routledge & Kegan Paul, 1978. 133pp. 4.50 Pounds. A nicely done brief introduction to the sea serpent literature, mostly derivative.

McQuaid, Donald, ed., The International Psychic Register. Erie, PA: Orion Press (Box 1816; Erie, PA 16507), 1978, 2nd Ed. 59pp. \$4.00 paperback. An address directory with cross-listings of "practitioners of the psychic arts" in the U.S., Canada, and Great Britain, by name, subject and geographic location.

Nordquist, Ted A., Ananda Cooperative Village: A Study in the Beliefs, Values, and Attitudes of a New Age Religious Community. Upsala: Borgstroms Tryckeri Ab, 1978. 177pp. No price indicated, paperback. An important sociological study of a Sierra Nevada "new age" mystical religious community which deserves attention. A very well done such study that in many ways could serve as a model. Recommended.

Piggott, Stuart, The Druids. Middlesex, England: Penguin, 1974. 193 pp. 95 pence; \$2.95 in Canada; paperback. An excellent and thorough study debunking much of the nonsense about this fascinating group. Recommended.

Playfair, Guy L., and Scott Hill, The Cycles of Heaven: Cosmic Forces and What They are Doing to You. NY: St. Martin's Press, 1978. 368pp. \$10.00. A very useful review of much of the recent research in cosmobiology (neoastrology), but like so many such works rather uncritical of the studies cited and leaps from allegations about correlations to claims of causation. Nonetheless, its review of a vast literature, much unavailable in English, makes it valuable and worth reading.

Rachleff, Owen S., The Secrets of Superstitions: How They Help, How They Hurt. Garden City, NY: Doubleday, 1976. 216pp. \$7.95. In many ways a sequel to the author's earlier book The Occult Conceit, this entertaining book is really, like its predecessor, far too glib and full of pontifications in its debunkings for it to be taken that seriously as a scholarly work. Though the reader may find himself sympathetic to many of the opinions expressed by the author, most of the debunking relies less on evidence than



upon the opinions, often strikingly stated, of the author.

Rice, Edward, Eastern Definitions. Garden City, NY: Doubleday, 1978. 433pp. \$10.00. A very useful short encyclopedia on oriental religions and the terminologies used therein. Though cursory examination indicates good reliability, it is not a scholarly presentation in that it lacks references and sources. But much esoteric information is presented, and the book should prove excellent as an introductory work.

Roberts, Susan, The Magician of the Golden Dawn: The Story of Aleister Crowley. Chicago: Contemporary Books, 1978. 337pp. \$10.00. The newest of the many biographies of the great "black magician." Some new information and well written but some surprises of a negative kind such as no reference being made to the Symond biographies.

Rogo, D. Scott, The Haunted Universe: A Psychic Look at Miracles, UFOs and Mysteries of Nature. NY: Signet, 1977. 168pp. \$1.50 paperback. A highly entertaining tour of much of the Fortean and general anomalies literature, frequently suggesting parapsychological explanations. Typical of the genre.

Rogo, D. Scott, Minds & Motion: The Riddle of Psychokinesis. NY: Taplinger, 1978. 271pp. \$11.95. Though skeptics will not agree with Rogo's often loose or unacceptable decision criteria for accepting a PK claim, the book is an excellent survey of the literature on PK and shows the directions its advocates have been taking. Rogo's chapter on Geller is of particular interest.

Roll, William G., Poltergeist. NY: Signet, 1974. 208pp. \$1.75 paperback. A major study of poltergeist phenomena. A wealth of information, well presented and annotated.

Shepard, Leslie, ed., Occultism Update: An Inter-Edition Supplement to Encyclopedia of Occultism & Parapsychology. Issue Number 1. Detroit, Mich.: Gale Research Co., 1978. 62pp. \$30.00 for subscription to four issues, paperback. A welcome addition to Shepard's excellent encyclopedia.

Shepard, Odell, The Lore of the Unicorn. Boston: George Allen and Unwin, 1978 [1930]. 312pp. \$12.95. A welcome reprint of the classic study of the unicorn. Highly recommended.

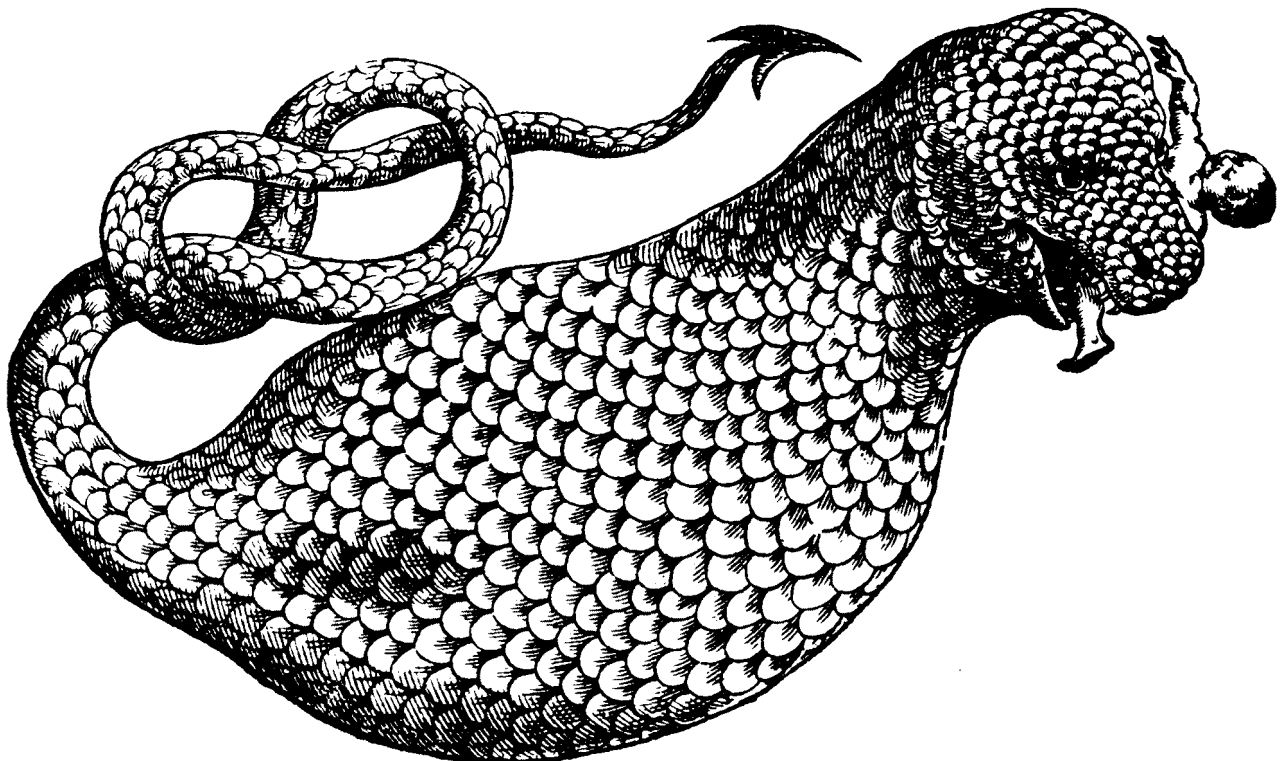
- Schreffler, Philip A., The H. P. Lovecraft Companion. Westport, Conn.: Greenwood Press, 1977. 199pp. \$13.95. A very useful work for those interested not only in Lovecraft but the relationship of his fantasy writings to contemporary occult groups which have "borrowed" from them.
- Spiritual Counterfeits Project, TM in Court. Berkeley, CA: Spiritual Counterfeits Project, 1978. 75pp. No price indicated, paperback. Put out by the Berkeley Christian Coalition, this small volume contains the **complete text** of the Federal Court's opinion in the case of *Malnak v. Mahari-shi Mahesh Yogi*, a judgement which ruled that teaching TM in five New Jersey public schools was a violation of the first amendment of the U.S. Constitution. This decision is now under appeal by HEW and the TM corporation.
- Smullyan, Raymond, What Is the Name of This Book? The Riddle of Dracula and Other Logical Puzzles. Englewood Cliffs, N. J.: Prentice Hall, 1978. 241pp. \$8.95. A fascinating collection of logical teasers. "Logical anomalies."
- Standen, Anthony, Forget Your Sun Sign. Baton Rouge, La.: Legacy Publishing Co., 1978. 139pp. \$5.95. A debunking of astrology which unfortunately shows little familiarity with the serious literature on the subject. This is unfortunate rather than damning because the author has much of interest to say and makes numerous valid points. But he fails to differentiate the varieties of astrological claimants and thus misses his target in many instances.
- Trento, Salvatore Michael, The Search for Lost America: The Mysteries of the Stone Ruins. Chicago: Contemporary Books, 1978. 284pp. \$9.95. An excellent though certainly controversial introduction to the study of "America B. C." and standing stones found in the United States. Recommended.
- Waggoner, Diana, The Hills of Faraway: A Guide to Fantasy. NY: Atheneum, 1978. 326pp. \$16.95. Obviously, the line between the paranormal as fact and fiction is difficult to draw and there is much overlap between the two literatures. This useful guide to fiction is a goldmine of information that should prove useful to ZS readers.
- Werner, Elizabeth M., ed., Guide to Psi Tape Recordings. Burbank, CA: Inner-Space Interpreters (P.O. Box 1133, Magnolia Park Station), 1978. 48pp. \$3.00 paperback. A very useful guide to

a remarkable list of purchasable tapes on a wide variety of paranormal subjects, many of which should be of interest to ZS readers.

Werner, Elizabeth M., ed., Guide to Psi Periodicals, 6th Ed. Burbank, CA: Inner-Space Interpreters (address above), 1978. 100 pp. \$3.00 paperback. An excellent compilation of basic information on several hundred periodicals dealing with paranormal claims. Far from exhaustive and some surprising omissions, but useful and recommended.

Wuthnow, Robert, Experimentation in American Religion: The New Mysticism and Their Implications for the Churches. Berkeley, CA: University of California Press, 1978. 221pp. \$12.95. Analysis of several large-scale social surveys is followed by sociologist Wuthnow's consideration of the implications of his findings for American religious institutions and their probable future. This book extends Wuthnow's efforts in his earlier (1976) book The Consciousness Reformation. ZS readers will find Wuthnow's chapters dealing with astrology and psi attitudes of particular interest.

-- MT



## AN INVITATION

The ZETETIC SCHOLAR has undertaken to initiate a new experiment in parapsychology wherein both proponents and critics may cooperate in developing a research design satisfactory to both camps. The primary hope is not to establish or deny psi phenomena. It is to create a model for cooperative communication between the two sides in a spirit of constructive rather than merely debunking skepticism. Critics may help by participation in the development of an acceptable research design that can avoid the usual post hoc charges of fraud and incompetence. Proponents can help by suggesting means by which production of a psi effect can be maximized. Cooperation towards this end has already been sought by ZS from over 25 experts and will be reported upon in the next issue.

In its essence, the plan presently consists of obtaining guesses from a large sample of subjects as to the outcome of a future event that is completely unpredictable (e.g., the final digits of the closing total trade figures on the New York Stock Exchange) which can be statistically analyzed according to predetermined decision criteria. These guesses will be published in an issue of ZS prior to the event being guessed, thereby precluding fraud. Such preposting of the judgements may avoid the problem of replication in so far as a single psi event--if evidence for it can be agreed upon in advance by both critics and proponents--can be considered adequate evidence of psi (just as a single publicly viewed unicorn would prove its existence).

A negative result will not disprove the existence of psi any more than an empty trap proves the nonexistence of a unicorn. The problem is to get us all to agree on what will constitute a positive result should we find one, just as we want to know how to recognize a true unicorn should we actually see one. A positive result will likewise not guarantee a real effect since some new creative critic may later suggest an alternative explanation none of us foresaw. But we should at least get agreement about what we can now foresee. For if we can not get agreement about what will constitute evidence before an experiment is run, it seems most unlikely that we will ever convince anyone skeptical by examining an experiment after it has been run. Even if we catch nothing in the trap this time--and who knows but that we just might?--we should be in far better shape to set our trap next time. Since science is concerned with intersubjective knowledge, the name of the game is not merely to catch or see a unicorn; it is to convince others of its existence. To do this properly, we need better understanding about what will constitute convincing evidence before we start the hunt.

Your suggestions and help are solicited, and we welcome those of you who can aid us in conquering some of the problems already emerging as we try to develop a model not only for this experiment but for the improved cooperation and communication in adjudicating all claims of the paranormal.