

The Arizona Skeptic

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Let's Be Serious: Defensive Skepticism

by Michael Stackpole

On the surface of it, being a skeptic and working to let some reason into the world should be a simple task. Everyone agrees, for example, that 2 plus 2 equals 4 and that the Earth is a sphere spinning in space, locked into an orbit around a star. This common basis of agreement should form a foundation for enlightened discussion about a whole host of topics. In clear discourse, skeptics should be able to get their points across and reason should prevail.

The problem is, of course, that many people operate with a foundation that is not as broad or as strong as we might like it to be. In the above example, it would be difficult to find someone who disputed the basic mathematical premise of $2+2=4$, but there are people who truly believe the world is flat. In the face of *belief*, reasonable discussion is seldom possible, and converting a true believer over to your point of view is about as likely as the reverse conversion taking place.

The key to winning the skeptical battle, in my opinion, is to get folks to **think**. While it appears that we have a united New Age front opposing us, the truth is that the UFO believers often think crystals are nothing more special than rocks and astrology fanatics often view UFO abductees as poor misguided souls born under horrible stars. New Agers exhibit the facility for critical thinking, but they have not had reason to apply it to their own particular area of fascination. If they can be made to question even some of the fringe claims of their cause, the tapestry can unravel.

Skeptics often get frustrated because there is no easy way to begin to get someone to question the underlying tenets of their beliefs. It's easier to nail gelatin to a wall with railroad spikes than it is to pin down an "expert" in a New Age field on some fact or another. This is vital to do because, only by getting down to a common foundation can we begin to discuss anything, and evasiveness on the part of an expert can be just as damning to his cause as any gaff you could point out, or any factual evidence you could bring to bear in a discussion.

Below is the outline of a strategy that we can use to bring the discussion up or down to a level where we can apply logic. At all times we must remember that logic and reason are our best tools (though a liberal dose of humor can also be a big help) in making people think. This game plan should tip the discussion in your favor and let you provide the raw material for others to digest and make informed decisions.

1) **Define terms.** Many of the pseudo-sciences presented as fact by New Age practitioners are couched in scientific jargon. In a tract produced by a church here in Phoenix, the deadly AIDS virus is discussed at length. Information produced by the World Health Organization

and the Center for Disease Control is incorporated into an impressive array of horrifying statistics. The first four paragraphs of this document contains a reasoned discussion of the AIDS epidemic.

Further on, however, we begin to run into trouble. "Like syphilis, AIDS is a virus blood (life) disease infection." What on earth is meant by "virus blood (life) disease infection?" Later we are told that through fasting, "The virus [sic] are siphoned out of the blood and turned into food fuel..." How are the virus "siphoned" out of the blood? What is the mechanism for that? What cells accomplish this feat? Where are the studies that support this hypothesis? And what is the mechanism for turning virus into food fuel? Where is that accomplished in the cells? Why, if that is true, do we ever suffer from virus infections at all?

Only by getting the New Age practitioner to define his terms, like siphon or "food fuel", can we get through the screen of misdirection and misinformation that is used to support our arguments. All of us can see, in the two passages quoted above, that the basic claim that fasting can cure AIDS is nonsense, but only by getting down to the building blocks of our opponent's theory can we begin to refute it.

The necessity of defining terms cannot be understated. Watch for the times when you think, "Oh, that makes sense," and, better yet, "What's wrong with this picture?" Ask for clarifications and sources. Demand verification or let the practitioner know that you won't accept his theory unless he can explain it to you. Don't let him hand you double talk about not wanting to get into a technical discussion — pursue his explanation until you have no more questions and don't be afraid to table items until you have a chance to do some research yourself. You're in this for the long run, not a quick kill.

2) **Get facts and double check sources:** It would seem that an admonition to actually research your topic and double check your sources is not needed, but it must be included. Science moves at an incredible pace and new discoveries can be (and often are) incorporated willy-nilly into claims to make them seem more creditable. We probably can all remember when the hypothesis was advanced, several years back, that our sun had a dark companion star which was named Nemesis and blamed for the meteor showers that caused the periodic extinctions that have destroyed most life on earth. Since that time, that theory has been discredited, but a paranormal claim stating precognition is the only way mammals survived the previous extinctions could easily be advanced using Nemesis as its linchpin.

As noted in the example before, some of the latest WHO and CDC stats and charts are included in this tract on fasting and AIDS, making it seem like the cutting edge of medical news. More importantly, this tract gives us another reason for research. Even though a basic grounding in biology will give us the clues to pointing out the errors

in the claims, only research can give us the facts needed to refute the claims. For example: let us assume that the practitioner decides to claim that in times of starvation, the body will metabolize the virus. Seems logical, but it really isn't.

Viruses enter a cell through the cell membrane and take up residence in the nucleus of the cell. There they use the cell's DNA and or RNA to make copies of themselves. In short, they hijack the cell's reproductive mechanisms. To make these copies, the DNA needs energy, and that comes through the metabolism of food by the mitochondria. The mitochondria exist outside the nucleus and, apparently, had missed the virus coming in. If the mitochondria did metabolize viruses, we would never suffer viral illnesses: the seasonal cold would be the source of extra energy and people would thank you for sneezing on them.

Viruses fall prey to phagocytes: leukocytes, lymphocytes and macrophages. Commonly referred to as "white blood cells," these cells hunt down and destroy, by consuming (or phagocitizing). This does not provide energy for the body and, in fact, kills many of the phagocytes in the process (hence the presence of pus in infected wounds — it's dead phagocytes and other waste material).

Anecdotal Evidence: Rather obviously, the problems with anecdotal evidence are legion. The greatest danger of anecdotes is that they so often touch a chord in us that we believe them without any verification and, in their most outrageous form, become part of the growing body of urban legends. We've all heard the story about alligators existed in the sewers of New York, or about the lady who took her choking Doberman to the vet. (In that latter story, the dog was choking on the fingers of a rapist/thief hidden in her apartment.)

In the aforementioned AIDS tract we find two testimonies presented in anecdotal form to attest to the success of fasting as a cure. The first is from a man who claims to have been sodomized by a cop and who, four years later, discovered he had AIDS. He claims that after 32 days of fasting (taking water alone) he was cured of AIDS. His doctor — we'll get more into him below — agreed that he was free of the virus and so said in a phone conversation with the tract's author.

The story above have all the earmarks of a budding urban legend. The reason the victim cannot report it to the police is because his attacker is a cop. This means the tale cannot be verified from police records. His identity, as we are told in the tract, has to be hidden so the victim can avoid harassment. Again we have a dead end for investigative purposes. The victim is said to be from Saskatchewan, Canada, but the chances of locating this individual based on his initials is virtually impossible. In short, from the internal evidence of the testimony offered, the case cannot be verified.

In short, the story is worthless. This will not stop it from being cited as evidence, but we must point out how flimsy it truly is. It is important to note that such stories often are quoted by other writers. Many stories, without ever being verified, get repeated and embellished so quickly

that they take on a life of their own. It is vital to get back to the original story, if possible, and check the source for truth. Once you get back to the original tale, most of the evidence evaporates.

3) **Examine qualifications:** There is a very subtle course of criticism that can be very effective, but also dangerous to use. This is to check and possibly question the qualifications of a witness. Often, in the cases of UFO sightings, it will be noted that a witness was a doctor or a dentist or a lawyer or a police officer. This, in theory, makes their story more credible, but that is a fallacy we can explode to our advantage. We do not have to doubt the witness's honesty, but we have to ask, "What does a doctor, dentist, lawyer or cop know about spacecraft or aircraft or celestial phenomena?" Just because a person has a position of responsibility does not mean he or she knows everything.

As I mentioned above, the AIDS tract includes a testimony from a doctor concerning the patient's recovery from the AIDS virus. The man in question is one Dr. Roger Ballmen of Saskatchewan, Canada. No further information is given about him, so we don't know if he is a general practitioner or an oncologist who is familiar, in some way, in dealing with retroviruses and illnesses they spawn. When I read his testimony, which was rather vague concerning his methods (I come from a family of doctors and worked my way to college as a records clerk in a medical office, so I'm somewhat familiar with terms used and methods of reporting) I decided to find something out about the good doctor.

I called the Canadian Medical Association. While they could not confirm or deny his membership in their organization, they did tell me that he was not listed in the Canadian Medical Directory. They put me in touch with the Saskatchewan College of Physicians and Surgeons — a body with which Ballmen would have to be registered to practice medicine in Saskatchewan. They had no listing for him. Lastly a check, through the Phoenix Public Library's copy of the membership directory of the American Medical Association showed no Dr. Roger Ballmen south of the border.

Not only could I not determine what Ballmen's specialty was, I couldn't even determine he existed! At the very least, this information makes his testimony highly suspect. (Note: the tract's author assured me that Ballmen was indeed a "medical doctor" from Saskatchewan just before I let him know Ballmen did not exist.)

4) **Don't knee-jerk criticize:** This is a difficult rule to keep in mind, especially when evidence on the other side is weak. Some claims are hideously outlandish and should be relegated to the gossip rags at supermarket check-out counters, but to say that will only make you seem shrewish and shrill. Remember to bring the discussion back down to a logical basis. Force the opposition to explain the phenomena on your grounds.

The AIDS tract notes, at one point, that "The larvae, the eggs including both dead and live virus are actually killed, or destroyed by being dissolved into the bloodstream [during the fast]." This is utter and complete tripe, but dismissing it out of hand will not persuade those

folks who have not recently brushed up on their high school biology. It takes no time to note that eggs and larvae are multicellular-cellular life-forms whereas viruses are just a chunk of DNA. Viruses, purely and simply, do not have such forms because they are too primitive and small. Once you point that out, most folks will remember their schooling and will realize you are correct.

The knee-jerk response does skeptics little credit because it is, in short, a reaction based on **faith**: faith that any strange phenomena could not have happened. This is an indefensible position because, to bolster our argument, we can offer explanations that later are proved wrong. While the phenomena may not have actually happened, neither could it be explained by our solution. This calls our credibility into serious question and could easily, in the future, make our opinion subject to simple dismissal because of a dismal track record.

What is the alternative to just dismissing things out of hand? If you can't definitively refute a claim, gather more information on it. Let your audience know you are serious about getting data so you can investigate it more fully. Solicit information and cooperation from your opponent (a move that will put him on the defensive in most cases) and continue to appear earnest and fair. Understand that many people react badly to closed-mindedness, no matter what side it appears on, and that continuing to be a quester after the truth is a way to win favor.

5) Roll with the punches: Don't engage in or accept *ad hominem* arguments. No matter what the subject, if you come on strong and are winning the fight, your foe will slip the subject and start criticizing you. Don't accept that. Refocus the discussion on the subject at hand and, if need be, solicit outside help to keep your foe on the topic.

Being prepared for personal attacks is the only way to deal with them. Most often the attacks start with a shot at your qualifications or your lack of faith or your ignorance. Answer such facts with a reminder to your audience: "You'll note, of course, that when they can't refute your argument, they start attacking you." Label the attacks personal and hoist them on their own petards. When hit with, "You don't know enough about the subject for us to have a serious discussion," feel free to answer with, "If I'm so ignorant, how come you can't answer these basic questions?" Then bring the basic questions up again: How does this work? What is the mechanism? What are your sources?

The importance of being graceful under personal attack cannot be overstated. A strident denunciation of an opponent, especially if they give the impression of being a simple, misguided but harmless individual, will earn more ire than it will praise. No one likes a bully and Americans are notorious for supporting the underdog. Right now we have that in our favor and, alas, will probably have it in our favor for a long time. We have to appear to be the nice guys and that means we laugh off attacks on us, or let the other side know they have hurt us with a personal attack while we refrain from returning cuts in kind — no matter how large and easy the target may be.

Because we, as skeptics, have adopted logic and reason as the basis for our discussion of what are highly emotional topics, the opposition will try to deny us any emotional tie with our subject matter. If they can break our cool exterior and get us hot, our credibility can suffer. This is unfortunate because I feel most skeptics are passionate about a very important aspect of the New Age, but we face the basic paradox in the mind of the public: If this is so much nonsense, as we keep insisting, how can we become so worked up about it? What does a little faith healing or astrology hurt? How can a grown man or woman get so upset about this drivel?

I am passionate about being a skeptic because I feel for every slob who gets bilked out of money by some charlatan. I cringe when I hear people talk about getting treatment from a quack who has shown them that they have an undiagnosed condition by the use of applied kinesiology or some other misbegotten trash-science. I want to wretch when I see channelers offering to produce the "contact" of spiritualist from ages ago. I despise philosophies that tell people that they have no control over their own life, yet remind them that they create their own reality.

My concern for the erosion of reason is legitimate and I see no shame in investing emotion in it. I also feel, when it is explained as above, most individuals can agree with it. That, ultimately, is the goal to which we have to aspire: to make everyone understand us and agree to question extraordinary claims. Reserving our passion for this basic concern for fellow human beings can be our greatest selling point, and it puts us in a position of being worried about something that is serious, as opposed to being preoccupied with patent nonsense.

Avoiding the whole game of personal attacks is the best way we can assume some moral high ground and leave a better impression than our foes. If you can't avoid it, point it out for what it is and refuse to sink to that level.

6) Stick to the basics: There are many times when it seems our task is something like bailing the ocean with a bottomless bucket, but we knew the job was tough when we took it. Our task is less to lead a great counter-revolution of reason than it is to play the part of the little boy in the story of the Emperor's new clothes. In our seeming innocence we can be most devastating when we point out the logical problems with the causes espoused by the New Age.

We are in a privileged position. We have the opportunity and background to ask the questions that everyone else would ask if they were in our shoes. Lots of folks would like to ask astrologers, "How do the planets exert their effect on us — what is the mechanism?" They don't get the chance, so we have to do it for them. In getting the New Agers to give honest answers (which generally devolve down into, "Well, we don't exactly know.") we give others the grist for their thought-mill.

Make sure you know your facts, but don't be afraid to admit you've not got an answer for a question. Always be willing to learn more and actively ask for details that will facilitate your further study. Comport yourself as a normal

individual and demand that your opponent explain jargon in something other than ten cent words. Use humor whenever you can, but avoid slashing sarcastic attacks

In short, facts that get cited and information offered is soon forgotten by most people. Their impression of you, however, is not. In many ways even a losing effort can be positive if you leave the impression of being a reasonable individual who wants to learn the truth. Skeptics should become known as informed and civil and dedicated to making sure fakirs and frauds do not prey upon the unsuspecting populace. If that's the worst that can be said of us, we might, in the end, actually win this battle and, at the very least, can hold our heads up while fighting it.

[Editor's note: This is the first of what we hope will be a regular column from the Executive Director of the Phoenix Skeptics.]

Behaviorism and Consciousness

By Jim Lippard

At the January 28 meeting of the Phoenix Skeptics, our own Erv Theobald gave an informal talk on the subject of the behavioral theory of consciousness. Not surprisingly for this era of cognitive psychology, many of Erv's points were met with strong criticism. As a cognitive science minor, I have some degree of anti-behavioristic bias myself, but I think several of the points Erv made are more plausible than his critics tried to make them out to be. This brief article is designed to give a superficial comment on some of Erv's points and suggest readings for those interested in researching the subject further.

One of the more controversial claims Erv made was that the possession of a natural language is a prerequisite for consciousness (or "self-consciousness"). Most of the audience (or at least the vocal members) seemed to find this utterly implausible. But Princeton psychologist Julian Jaynes (1976) has made a case that consciousness did not arise until historical times, long after the development of human language. While Jaynes' work is controversial (to say the least), he does present plausible arguments and evidence in support of his theory.

Another claim Erv made was that language is not innate as the linguist Noam Chomsky has claimed. I am in agreement that Chomsky's innateness claims are exaggerated (see Devitt & Sterelny 1987 for analysis), but would disagree that there are *no* innate language capacities in humans (see Fodor 1975 and Miller forthcoming for some experimental evidence).

Erv also proposed that all thought, including (purported) mental imagery, is just "covert verbal behavior." While I would dispute the "covert verbal behavior" part, there is good evidence that mental images are quite different from "pictures in the head" (see Anderson 1985).

Finally, Erv also claimed that "mentalism" is indefensible and that the terms "consciousness" and "conscious" are superfluous. While I think perhaps "consciousness" may eventually be supplanted by more precise terms, I think that it is not presently superfluous and refers to self-monitoring of perceptions that is necessary for practical reasoning (see Pollock 1989).

I have probably not done justice to either behaviorism or its critics in this all-too-brief commentary. I hope that those interested in pursuing the fascinating but little-understood subject of consciousness find it to be of some benefit.

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In Response

by Erwin Theobald, Ph. D.

Jim Lippard characterizes his review as "a superficial comment." Since my talk can be similarly branded, I have no grounds for complaint. In fact, I feel that his critique is eminently fair. I found it quite helpful. However, after listening to a recording of my talk and the discussion which followed it, some clarifications might be in order.

First, I might relent on a natural language as a prerequisite for self-consciousness (*a la* Epstein, Lanza, and Skinner, 1981), depending upon the breadth of the definition of "natural language." (Incidentally, for behaviorism language is a controlling variable of behavior rather than a possession.)

Second, no behaviorist that I know would deny a genetic capacity for language. The key word here is *capacity*. Moreover, given a broader definition of language, I am not even sure that we can deny such capacity for species other than human (Epstein, Lanza, Skinner, 1980). (Of course, such definition juggling would force me into a seemingly very different position.) It is *a priori* structuralism that locates Chomsky's paradigm outside of empirically executed science.

Third, I do not hold that all thought and mental imagery are "just" covert verbal behavior. Imagery, of course, is covert and not really verbal. Most, but not all, of what we call thought is verbal though not necessarily covert. These issues came up during the "question and answer" or discussion part of the meeting when several viewpoints were demanding attention all at the same time; there was precious little opportunity to spell things out completely.

Fourth, while it may be premature to claim that "consciousness" and "conscious" are superfluous terms, I do feel that mentalistic language can obscure and have the effect of foreclosing analysis of the functional origins of behavior.

Those who were present at that January meeting will recall that I began by asking for an inquiry kind of format; a non-confrontational, mutual pursuit of information. What transpired was something quite different, more thermal than illuminating.

I should like to have shown how behaviorology can provide powerful tools for explaining many putative paranormal phenomena such as psychism, telekinesis, hypnosis, telepathy, and placebo effects (the mind-over-matter wonder.) At present, some of our analyses are incomplete precisely because we stop short of looking at mentalism, which itself is properly an object of skeptical investigation.

References and Suggested Readings

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Book Review

Mindspell

by Kay Nolte Smith
1983, Ballantine Books

Reviewed by Judy Sawyer

If one goes into any bookstore in any part of the country, one will find entire sections dealing with the occult, UFO's, New Age, etc. Finding a rational book that not only debunks the paranormal but is also an intriguing work of fiction is downright wonderful.

Mindspell deals with religion vs. genetic engineering, spiritualism vs. science and witchcraft vs. reason with some romance and plenty of suspense thrown in. One can also find some insight as to how "mediums" work their "magic" through the use of stolen personal items and a massive file system that is available to all "psychic advisors."

Since this is a work of fiction, I don't want to reveal many details. I will close with a brief review given by best-selling author Andrew M. Greeley:

"A critique of those who, not satisfied with the Mystery of life, have to create special mysteries of their own — and work havoc on themselves and others through their lust for the extraordinary."

Book Review

Science And Earth History

by A. Strahler

1987, Prometheus Books, Buffalo, NY, 552pp.

Reviewed by Roger Mann

If you thought fundamentalist creationists were a relic of the past, think again. Creationist attacks against evolutionary biology, geology, and astrophysics have been increasing in the last few years. Creationists such as Duane Gish have "cleaned the clock" of more than one unwary scientist with sophisticated arguments and skillful debating tactics. A. Strahler's *Science and Earth History* details the latest creationist attacks and provides the "scientific" answers to these attacks.

Arthur Strahler is a Geologist with a Ph. D. degree in geology from Columbia and has served as Professor of Geomorphology from 1958 to 1967 and as Chairman of the Department of Geology from 1959 to 1962.

Science and Earth History covers five major subject areas: (1) Science Philosophy; (2) Cosmology and Astronomy; (3) Geology; (4) The fossil record; (5) The Theory of Evolution.

The subject areas included in the book, except for Science Philosophy, are determined by the specific Creationist attack against the Theory of Evolution.

In the section on Science Philosophy, Strahler presents the philosophical foundation of science and creationism and shows in a convincing manner why creation science is an oxymoron. I consider this section the most important in the entire book because it clarifies the fundamental (no pun intended) philosophical differences that lay at the heart of the creationism/science debate.

The remaining subject areas are generally presented with an introductory chapter summarizing current knowledge and theories in the subject area. This is usually followed by the specific creationist attack against some subfield in the subject area with the scientific refutation of the attack.

In the section on Cosmology and Astronomy, one of the subjects Strahler introduces is Thermodynamics. This introduction is followed with one of the creationist arguments against evolution, the second law of Thermodynamics fallacy. (This argument asserts that systems may not organize themselves such that the entropy of the system is less than its original entropy.) To refute the argument, Strahler gives several examples of self-organizing systems and shows how the 2nd law of Thermodynamics is misapplied when considering open systems such as the Earth.

In another section, Strahler presents the Creationist attack against mainstream geology and crustal history by presenting a tutorial on Earth structure and dynamics followed by the Creationist view of geology. This section provides an excellent overview of the field of crustal geology which is not surprising since this is Strahler's field of expertise. The Creationist view of Earth history is given in great detail with direct quotes from Creationist literature.

Other subjects covered are "Two Views of the Origin of Landscapes", "Two Views of Stratigraphy and the Fossil Record", "Integrity of the Evolutionary Record Under Attack by Creationists", "The Rise of Man and Emergence of the Human Mind", and "The Origin of Life on Earth, Naturalistic of Creationistic?"

Science and Earth History is clearly intended for the non-scientist. Strahler may seem too pedantic in some cases when the reader already has had university-level courses in the subject areas under scrutiny. On the other hand, Strahler presents the latest state of knowledge and theory in a clear and understandable manner that can be easily understood by all. Copious footnotes and a large bibliography provide excellent references for all material presented in the book. As a result, this book provides a good starting point for anyone who wants to learn about the subjects presented.

I strongly recommend this book as an addition to your library. It will increase your knowledge of the creationism/science conflict, provide a tutorial for Cosmology, Astronomy, Geology, and Evolution, and act as a reference for further studies.

Book Review

Eyewitness Testimony

By Elizabeth F. Loftus

1979, Harvard University Press, 253pp.

Reviewed by Jim Lippard

While most skeptics are well aware that eyewitness testimony can be notoriously unreliable, few may be aware of exactly what can go wrong with human memory and how it happens. Elizabeth Loftus' book, *Eyewitness Testimony*, answers these questions. Although the book is written from the perspective of the relationship of eyewitness testimony to the legal system, it equally well applies to eyewitness accounts of paranormal phenomena.

Human memory involves three stages, each with potential for error: the acquisition stage (when perceptions are stored in memory), the retention stage (the time period between perceiving and recollecting), and the retrieval stage (when a memory is recalled). Loftus gives detailed descriptions of each of these stages and discusses the results of research (her own and others') into human capacities and frailties of each.

The acquisition stage is affected by numerous factors involving the event and the witness. Time and frequency of exposure, salience of details, violence, stress, and expectations of the witness all play a role. Witnesses are better able to recall details of events which they have been exposed to for longer amounts of time or more frequently and better able to recall details which are in some way significant to them. Witnesses tend to have worse recall for events involving great stress or violence. On the other hand, extremely low stress also leads to poor recall—the Yerkes-Dodson law states that stress or other strong motivational states leads to improved memory up to a point, after which there is a decrease in ability. Expectations can distort or even override perceptions. In a famous 1949 experiment by Bruner and Postman, subjects were briefly shown a set of playing cards—twelve aces

from all four suits—and asked to describe what they saw. Most reported seeing three aces of spades, but in fact there were five—two of them were red rather than black. Some reported the red spades as being "purple" or "rusty black"—a compromise between what they saw and what they expected to see.

The retention stage is affected by postevent information which can enhance or distort memory. If an object is mentioned shortly after it is observed, it is more likely to be remembered later on. On the other hand, compromise memories can also be created: in a study in which subjects were shown slides of an automobile accident in which a green car drives past, subjects informed that the car was blue would later recall it as blue or bluish-green. Even nonexistent objects can be introduced into memory by postevent information: in another experiment involving slides of an automobile accident, a car went through an intersection containing either a stop sign or a yield sign. Subjects asked "Did another car pass the red Datsun while it was stopped at the stop sign?" recalled seeing the stop sign even if they had been shown the slide with the yield sign, and vice versa. In another experiment, subjects were shown a film of a car driving along a country road and asked "How fast was the white sports car going while traveling along the country road?" even though there was no barn. In this experiment, over 17 percent of the subjects later recalled seeing a barn. A variety of other effects can influence retention of memory, such as the freezing effect. When a person makes statements in an early recollection of a memory, those statements tend to be remembered later, even if inaccurate.

The retrieval stage is affected by such things as the retrieval environment, wording of questions asked, and who is asking the questions. People tend to have better recall in situations which closely resemble the situations in which the observations occurred. Studies have shown that students score more poorly on exams when tested in a different room than the usual classroom and more poorly when the proctor for the exam is different than the usual proctor. Wording of questions also affects recall. Experimental subjects asked "How tall was the basketball player?" tended to give higher height estimates than those asked "How short was the basketball player?" Those asked "Did you see the broken headlight?" were more likely to answer yes than those asked "Did you see a broken headlight?"—and would frequently do so even when there was no broken headlight. Subjects who answered questionnaires in the presence of an authority figure (a policeman or law professor) tended to give more detail and be more accurate than those who were not in the presence of such a figure. Another effect involving the retrieval stage is the "knew it all along effect"—people who are told that an event has already occurred tend to believe that they knew all along that it would happen. In one test, subjects were given a description of a historical event for which four possible outcomes were provided. They were asked to assign probabilities to each of the four possible outcomes. Other subjects, who were told what the actual outcome was, tended to assign much higher probability to the actual outcome than those who were not told.

Loftus' book contains a great deal of useful information, and is a must-read for anyone interested in conducting investigations involving eyewitnesses. In addition to the sorts of information described above, the book describes the use of hypnosis on memory (it doesn't seem to be any more beneficial to recall than relaxation, and can induce false recollections), special training programs for identifying faces (they don't work), and legal protections against misidentification by eyewitnesses in the American court system (they are practically nonexistent—several cases of false imprisonment on the basis of eyewitness testimony are recounted, along with a summary of relevant Supreme Court decisions).

Book Review

ESP and Psychokinesis: A Philosophical Examination

by Stephen E. Braude

1979, Temple University Press, 283pp.

Reviewed by **Jim Lippard**

Stephen Braude regards his book *ESP and Psychokinesis* as a sequel to the philosopher C.D. Broad's work *Lectures on Psychical Research*. Like Broad, Braude brings philosophical analysis to the field of parapsychology. This analysis finds much of the conceptual framework of parapsychology to be full of problems.

The book is divided into five sections: on conceptual foundations, the data of parapsychology, implications of psi on the philosophy of mind, an analysis of synchronicity, and an analysis of the meaning of the word "paranormal." It is Braude's conceptual analysis in the first and last parts which is most successful. In the first, Braude attempts to come up with definitions of the terms "telepathic interaction," "telepathic cognition," "clairvoyant interaction," "clairvoyant cognition," "precognitive," and "psychokinesis" which avoid begging any questions about whether such things exist or are reducible to one another. He also comments on what sort of evidence would count towards the existence of psi and what counts as experimental replicability. While most of his remarks are well taken, I think he puts too much weight on experimenter effects as a means of explaining away replication failures.

Braude's section on the data of parapsychology is less successful. He is clearly an advocate of psi, and it shows in his writing. While he primarily focuses on some of the best experimental evidence for psi (e.g., the random event generation experiments of Helmut Schmidt), he also makes reference to psychic "superstars" such as Nina Kulagina and Ted Serios, and to Stanford Research Institute experiments by the discredited Russell Targ and Harold Puthoff. On the other hand, Braude is quick to criticize explanations of parapsychologists for their results as incoherent when he sees them so, and he cites critical studies. The summary of the data is a fairly good one for the time it was written, though various pieces of the evidence have since been discredited or had doubt cast upon them (e.g., the Soal-Shackleton experiments and Carl Sargent's ganzfeld experiments).

In the third section, Braude attempts to show that the philosophical argument he gives against the energy-transfer theory of telepathy also has negative implications for some types of mind-brain identity theory (specifically Donald Davidson's "anomalous monism"). He further argues that the entire fields of cognitive psychology and neuroscience are based on "disguised nonsense." Needless to say, I think his argument utterly fails. Both arguments are based on his claim that physical structures (e.g., brain states) cannot have uniquely determined meaning in virtue of their internal structure. While his argument and a response would be too technical to get into in this review, those interested should compare Braude's argument with some other contemporary philosophy of mind and cognitive science (e.g. chapter 11 of Goldman (1986), chapters 2, 6, and 7 of Anderson (1985), and chapters 4 and 5 of Pollock (1989)). Some of the mistakes in Braude's argument include his failure to distinguish between thoughts and pictures (see Anderson (1985)) and his related assumption that thoughts are completely ambiguous (see Goldman (1986) and Pollock (1989) for factors that constrain the possible meanings of thoughts). (Braude is not, however, alone in his views. Those who share some of them include Stich (1983 & 1989) and Dennett (1987).)

In the fourth section of the book, Braude addresses the theory of synchronicity and finds it incoherent. While I agree with his conclusion, I think his argument contains some mistakes imported from his argument in the previous section.

In the last section, Braude attempts to come up with a reasonable definition of the word "paranormal" which is distinct from "abnormal" and "infrequent" without requiring that the things to which it applies be forever beyond scientific understanding. I think the definition he ultimately comes up with is as good as any I've seen.

I recommend the book primarily for those interested in the conceptual analysis of parapsychology. Those interested in a survey of the best of parapsychology's data would be better served by reading a more recent publication such as Rao & Palmer (1987).

References

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- Rao, K.R. and Palmer, J. (1987) The anomaly called psi: Recent research and criticism. *Behavioral and Brain Sciences* 10(December):539-643.
- Stich, S. (1983) *From folk psychology to cognitive science: The case against belief*. Cambridge, Mass.: MIT Press.
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Upcoming Meetings

This section contains listings for Phoenix Skeptics and TUSKS meetings.

Phoenix Skeptics meetings are normally held on a Saturday near the end of the month. Meetings start at 12:30 p.m. and are held at the Jerry's restaurant at 1750 N. Scottsdale Rd. in Tempe (south of McKellips).

February 25. Normal PS meeting time and place. Speaker will be Conrad Goeringer. The title of the talk will be "Bimbos for Satan". See the review of his talk in Tucson in the previous *Arizona Skeptic*.

March 25. Normal PS meeting time and place. Joseph Laferrière will talk about Evolution, and most likely some comments on Creationism. He has had articles published in the *Skeptical Inquirer* and *Creation/Evolution Quarterly*.

If you have a suggestion for a meeting topic or a guest speaker for the Phoenix Skeptics, contact Ted Karren at the PS address or 993-2600. If you have a suggestion for a TUSKS lecture, contact Ken Morse at 881-4910.

January PS Meeting

See "Behaviorism and Consciousness" and "In Response" for two views on the January public meeting.

Editor's Ramblings

Have you been wondering what you could do for the Phoenix Skeptics? We could use help in covering public meetings of various organizations, seminars, talks, etc. When something comes up, we will go through the file and contact people who might be able to attend. You may be called to help out on short notice (a day or so at the worst, we hope). To get into the HotLine Index, send us your name, address, phone number, and interests.

Mike Stackpole and I went to see Rev. Peter Popoff in January. Yes, he is still out there, but it doesn't seem

like he is doing even as well as he was last year when he came to town. About 30 of the faithful showed up.

The Yucca Stalk Incident was particularly amusing. I have some photos which were taken the day before it was torn down by one Peter Petrisko, local artist.

As always, we'd like to see book reviews and other contributions from our readers. Thanks to Roger Mann and Erv Theobald, first-time contributors, and the others who helped fill up this newsletter.

As far as we know, our mention of Victoria Jones in the last issue did not cause with her departure from KFYL.

Is anyone alive down in Tucson?

Through a deal with Prometheus Books, we can offer a 10% discount on books in their catalog. Catch me or Judy Sawyer during a Phoenix Skeptics meeting to order.

The Arizona Skeptic is the official publication of the Phoenix Skeptics and the Tucson Skeptical Society (TUSKS). Phoenix Skeptics is a non-profit scientific and educational organization with the following goals: 1. to subject claims of the paranormal, occult, and fringe sciences to the test of science, logic, and common sense; 2. to act as a clearinghouse for factual and scientific information about the paranormal; and 3. to promote critical thinking and the scientific method. Subscription rate is \$10 per year. All manuscripts become the property of Phoenix Skeptics, which retains the right to edit them. Address all correspondence to Phoenix Skeptics, P.O. Box 62792, Phoenix, AZ 85082-2792. CSICOP-recognized skeptic groups may reprint articles in entirety by crediting the author, The Arizona Skeptic, and Phoenix Skeptics. All others must receive Phoenix Skeptics' permission. Copyright © 1989 by Phoenix Skeptics. Opinions expressed are those of the authors. Editor is Ron Harvey.

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