

Bay Area Skeptics Information Sheet  
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HOMO IGNORAMUS  
Lynn Hammond

It is acceptable for the average college graduate to leave the hallowed halls of higher learning without even the most basic understanding of a molecule. It is unthinkable that the same student be ignorant of Shakespeare. He or she would be considered unlettered if not illiterate. While there is no desire to give the humanities short shrift, one might wonder if some of the emphasis ought to be slightly broadened.

We live in a highly technological era -- the age of the scientific method. Indeed, the age of science. The world and the way things work have never been understood to such a high degree; this knowledge turns about an appreciation for the simplicity and beauty of the fundamental laws of the universe. The value of a good science education for the masses is inestimable, but our educational system has largely failed. The results are measurable and disastrous. Many commonly-held beliefs date back hundreds of years to pre-scientific, magical thinking.

Jon D. Miller, director of the Public Opinion Laboratory at Northwestern U., did a comprehensive survey of public beliefs, the results of which appeared in "American Demographics" journal; those that apply to science are summarized here.

Only one-third of us understand what a molecule is, yet the term is used daily in advertising (the majority think that a molecule produced naturally is better than one produced synthetically). Less than that admit to a clear understanding of radiation, which accounts for much of the hysteria over nuclear energy. When advertising states that a product is "proven in scientific circles" only a third have an inclination what that means.

There is a strong correlation between higher education and general knowledge of basic science, but the gap is still dismally wide. Sixty percent of college graduates said they understood what a molecule is compared to 25% of high school graduates. One third of college grads compared to only 4% of high school grads understood DNA. The nature of a scientific study is 5 times more likely to be understood by collegians than by their high school counterparts.

The study suggests that while the average adult will expand his/her knowledge in general, if we don't learn our science in a formal

setting, we most likely never will. The report is most unsettling in that there is not much application of the little scientific knowledge the average student does acquire. It seems we learn some of the terminology and principles of science, but there is negligible carry-over into daily function.

Most Americans can't distinguish between science and pseudoscience. Almost 70% of all adults read astrology reports and fully 39% (66 million) say they believe in astrology and think it is scientific. Twelve million Americans say they sometimes change their plans after reading their horoscope. Astrology goes heavily along gender lines because of the difference in educational opportunities, it has been suggested. Still, 1/3 of college graduates consult astrological forecasts.

One of the most powerful and comprehensive scientific theories, the theory of evolution, is doubted by a majority of the public. The majority of men and college graduates accept evolution, but women, high school graduates and high school dropouts are more likely to reject it.

We are about evenly split on the question of extraterrestrial visitors. Most believers think alien visitors are benign or friendly, and of all the beliefs studied in the survey, the extraterrestrial hypothesis did not fall along gender or educational lines.

For the some 25 million Americans who do not have a high school diploma, the world is a frightening, hostile, incomprehensible place in which they have little control over their lives. This group heavily believes in fate, signs, omens and luck, while fewer than 10% of college graduates would agree. To the statement "It is not wise to plan ahead since many things turn out to be a matter of good or bad luck anyway." almost half of the dropouts agreed. Less than 10% of the collegians agreed.

The quality of being open minded requires that one have many options available. One who does not remotely understand even the rudiments of physics is hardly in a position to allege open-mindedness about alternative physical explanations. If A, B, C, and D contribute understanding to a concept it will not do to postulate X in the name of open-mindedness when one has no knowledge of A, B, C, and D.

If the average American obtains very little science in his or her formal education and then only applies it poorly, the knowledge gap after leaving school is being filled by the marketplace. Sadly, that marketplace makes no distinction between science fiction and science fact: what sells is all that counts. The pulp rags at the check-out stand outsell the combined effort to present any semblance of the other side.

[Mr. Hammond is a "BASIS" subscriber and concerned skeptic from Idaho.]

## PRESIDENTIAL HEALER

Much information about ex-Rev. Pat Robertson has been in the mail to "BASIS" of late, notably from BAS advisor BILL BENNETTA. The concern about keeping this publication out of the political arena makes us reluctant to touch on Robertson, but the amount of correspondence and clippings shows that there is more than just candidate Robertson.

Quite apart from his political ambitions, his foibles, examined under the public microscope, have touched on his faith-healing claims. Since alleged healings from any paranormal source fall under the purview of BAS, and since we have had striking successes in our investigations in this area, it was deemed important to focus some attention on Robertson's methods and claims. What follows, then, is something of a summary of the material sent to BASIS.

Probably one of the best analyses was done by Martin Gardner in "The New York Review of Books", Aug. 13.

"Like Brother Bakker and Richard Roberts, Pat practices the shotgun technique of healing -- much simpler than the laying on of hands. God gives him a 'Word of Knowledge' about the afflictions of unnamed people. With millions of viewers, he is sure to score many lucky hits. Those who are hit report their miracle cures and make generous donations. If an interviewer likes the way the healees talk, they may be invited to appear on the show to give stirring testimony.

"Pat's sin of pride, the pride of willful ignorance, has grown with CBN. His powers now rival St. Peter's. In China he once preached in English and his listeners, he says, all heard him in their native dialects, just like on the day of Pentecost. A woman in California listened to Pat say that someone had broken an ankle and God was healing it. Her ankle was instantly okay. The awkward fact is she had been watching a rerun -- Pat actually spoke his lines before the woman broke her ankle. Healing future accidents, Pat writes, happens often in his ministry.

"On at least three occasions the prayers of Pat and his associates have saved CBN headquarters from damage by a killer hurricane. In "Beyond Reason" he tells how they diverted hurricane Betsy from Virginia Beach.

"Here is yet another story Pat himself relates in "Beyond Belief": One Sunday, after services when he was an assistant pastor of a church in Mount Vernon, New York, a twelve-year old girl ran out of the entrance into the street and was killed by a car. Next day, Pat and his congregation prayed that the child would rise from the dead. The girl's body, lying in an open casket, had been embalmed.

Pat saw nothing unusual or funny about this incident. `She did not rise,' he concluded solemnly, `and we buried her on Tuesday.' "

Dick Dabney reported in "Harper's", August 1980, a chilling sample of Pat's healing technique.

"There is a woman in Kansas City who has sinus. The Lord is drying that up right now. Thank you Jesus. There is a man with a financial need -- I think a hundred thousand dollars. That need is being met right now, and within three days, the money will be supplied through the miraculous power of the Holy Spirit. Thank you Jesus! There is a woman in Cincinnati with cancer of the lymph nodes. I don't know whether it's been diagnosed yet, but you haven't been feeling well, and the Lord is dissolving that cancer right NOW! There is a lady in Saskatchewan in a wheelchair -- curvature of the spine. The Lord is straightening that out right now, and you can stand up and walk! Just claim it and it's yours. Stand up and walk. Thank you Jesus! Amen and amen!"

The "San Jose Mercury" reported that neo-Pentecostal Robertson "is being confronted by powerful video images broadcast on a Los Angeles NBC affiliate showing him leading a 1981 revivalist faith-healing in which he proclaimed that members of the audience were cured on the spot of cancer, hemorrhoids, goiter, bad teeth and a long list of other ailments.

"As he has in other well-publicized appearances, Robertson told of having personal discussions with God. He said he was driving in his car and the Lord told him to ask for something, anything. `I said, well, I don't know what to ask for but I probably would like to have \$1,000. And the Heavenly Father said all right.'

"So the Lord gave it to him, Robertson said. And then a week later he was glad he asked because he said his daughter required dental care that cost \$1,000. `He (the Lord) knew I had the need before I called on Him.' "

James Randi predicts that Robertson will ultimately withdraw from the race. The heat is going to be turned up, and it remains to be seen if America will be run by a bona-fide fundamentalist.

[Again, special thanks to BILL BENNETTA (spelled with two n's -- sorry about that misspelling in the last issue, Bill) for the materials and comments. - Ed.]

## HANDWRITING ANALYSIS

David Schreiber

Have you ever wondered what standards teachers use when they make personal judgments and form attitudes toward their students?

Recently a high school teacher from the Ottawa area in Canada named

Luigi Zardo revealed his criteria in an article in "Forum", a publication of the Ontario Secondary School Teachers' Federation.

Zardo teaches business, and states that he judges his students on the basis of graphology: "the science of discerning personality traits from the appearance of someone's handwriting."

He is not diffident in his judgments. He believes that there is negligible business sense in a student whose handwriting concentrates in the "upper zone" of the writing line. Similarly, he sees little motivation to make money in a student whose script focuses in the "middle zone." Of someone whose writing slopes sharply to the right, Zardo says, "I don't expect cool reason."

He presents a small "Encyclopaedia Graphologica". A line of writing that droops reveals a writer who is "indecisive, weak-willed and discouraged." Compressed loops indicate fearfulness and emotional tension. Upward-reaching loops are the mark of people who live in a fantasy world.

One wonders if a stray blob of ink points to some truth more profound than a leaky pen.

Zardo makes no apologies that he uses these signs to judge his students. He wrote the "Forum" article to encourage his fellow teachers to do likewise. Which means more to him when marking a critical essay, the logic of a student's argumentation or the slope of the script? What happens when the student with droopy handwriting approaches him for a recommendation to a leadership camp? Will writing in the wrong zone put students on some secret blacklist?

Graphology has been around since 1622, when a doctor in Bologna (no pun intended) named Camillo Baldi published the first book on the subject. The hypothesis on which it is based seems believable. Starting from the simple, obvious fact that personality must be exhibited in behavior, it is argued that there might exist a precise, detail-for-detail correspondence between the personality of a writer and the individual marks he or she makes in the act of writing. Thus the character trait of boldness might be revealed in large letters, optimism in an upward slant of the writing line, and sensuality in large loops plunging below the writing line.

This idea seems interesting enough; well worth putting to the test. Unfortunately graphology has never proven itself in sound, scientific tests. It has never gone past the stage of hypothesis. Despite this deficiency, but in a way that is all too familiar in the pseudosciences, it has grown large and pretentious.

One of the earliest and most important critical studies of graphology, by Ludwig Klages in Germany in the Nineteenth century, concluded that the interpretation of isolated signs was simply not valid. Most other studies have produced negative results.

A little support for graphology was given in a study by noted French psychologist Alfred Binet in the late 1800s. It tested seven graphologists by asking them to analyze 74 handwriting samples and to attempt to distinguish the 37 writers who were of superior ability (by the standards of the testers, presumably) from the 37 of average ability. The graphologists scored better than chance, with one analyst matching 92%. Of course, a thorough study must have each subject submit the same handwritten text. The reference is not clear on this point. If samples were taken from written material already extant, then one wonders how many clues to a writer's ability were available just in the words of the handwriting samples. In any event, later studies did not yield further support.

Nevertheless, graphology flourished and is flourishing today, sometimes popping up under a guise of respectability. Although it is not generally taken seriously in North American academic circles, graphology has been taught at the New School for Social Research in New York City as a serious diagnostic aid. Corporations hire graphologists to screen job applicants. It is not unusual to find sources such as the "Merit Student's Encyclopedia" blithely stating the "the main fields in which graphology can be helpful include personnel selection, vocational guidance, and historical research." Europe has been even more lax, as several universities there teach courses in graphology, and one can even earn an official license to practice the subject.

Everybody wants to form accurate opinions of other people, and we would all be extremely grateful for new, quick-and-easy methods of achieving insight into character. Graphology lacks the firm experimental foundation that it would need to make it any more than an excuse for discrimination.

The great English thinker Francis Bacon invented a name for illusions like graphology: Idols of the Theatre -- so called because they consist of little worlds of belief existing apart from reality, like stage plays. His comments on them, although made 400 years ago, are still accurate. "The human understanding" he said, "when it has once adopted an opinion, either as being the received opinion or as being agreeable to itself, draws all things else to support and agree with it. And though there be a greater number and weight of instances to be found on the other side, yet these it either neglects and despises, or else by some distinction sets aside and rejects."

Mr. Zardo and others will not cease to believe in graphology just because no evidence for it exists. But the intensity of their belief might decrease if skeptics keep reminding them of the dearth of facts.

[David Schreiber is a teacher who lives in Toronto. His article first appeared in "The Ontario Skeptic".]

## MANTRA MUDDLING

Michael Sorens

Newsflash! Except that this information is from January 1984; but it is of perennial interest for those who are seeking transcendental truth.

A person who completes a course in Transcendental Meditation is given a secret "mantra": a "personalized set of syllables" that should be repeated to oneself during meditation, according to "Omni" magazine, and this mantra should not be disclosed to anyone. And soon we will find out why it shouldn't.

The "Omni" article points out the interesting fact that if you study under a second TM teacher, you will be given the same mantra. This clearly indicates the transcendent nature of your personality, which is obvious to those who can read it.

The head of the TM discipline, Maharishi Mahesh Yogi has this to say about mantras:

"We know that each man is a different individual. Similarly, each man has his own type of energy impulses that constitute his personality. Therefore, if the qualities of the energy impulses of the sound of the mantra rightly correspond to the energy impulses of the man, only then will it be of real value. Any wrong choice of the mantra is sure to create unbalance in the harmony of the man's life."

Imagine, if you will, the horrors of being given the wrong mantra by some teacher who had dozed off in TM school during the section on your particular kind of energy. This could ruin your whole day.

Never fear. According to "Omni's" article, it was revealed by some disaffected TM trainers that there are just 16 mantras -- not the thousands claimed by Yogi -- which are assigned according to age rather than energy. They are:

ENG 0 - 11 SHIRIN 26 - 29  
EM 12 - 13 SHIRIM 30 - 34  
ENGA 14 - 15 HIRING 35 - 39  
EMA 16 - 17 HIRIM 40 - 44  
AENG 18 - 19 KIRING 45 - 49  
AEM 20 - 21 KIRIM 50 - 54  
AENGA 22 - 23 SHAM 55 - 59  
AEMA 24 - 25 SHAMA 60 - up

[The 55 - 59 group has the right mantra, it looks to me. MICHAEL SORENS is a frequent contributor of layout and format ideas, for which we are very grateful. -- Ed.]

## RAMPARTS

[Ramparts is a regular feature of "BASIS", and your participation is urged. Clip, snip, and tear bits of irrationality from your local scene and send them to the EDITOR. If you want to add some comments with the submission, please do so.]

There seems never to be an end to the stream of baloney that is grist for the skeptic's mill. It has been discovered that animals, insects (specifically, cockroaches), and even eggs have psychic powers. Parapsychology laboratories have conducted research in which a random generator turned a heat lamp on and off over a batch of fertilized chicken eggs. The eggs were found to influence the randomness to keep the heat "on" significantly more than average. Of course, our plants also possess psychic powers, too. Parapsychologists have measured galvanic response in plants as they (the plants) reacted to their environment. Don't tell secrets around your philodendron.

Psychic Penelope Smith has a new twist with her sensitivities. She uses her powers to communicate with animals. And then she tells the pet owner what it is that Fido has been wanting all these years.

A story in the "Mercury News" about what this astounding woman does with animals considers a case in point. In a \$25-per-half-hour chat with "Max", a German shepherd, he told her that what he wanted most was a bird. A parakeet. Max was serious, because he "wasn't noticeably grinning".

That might have explained why Max was watching Penelope's bird so attentively. Maybe Max wants a whole bunch of birds. Preferably, plucked.

"Smith said her success stories include a dog with a broken leg that wouldn't keep his cast on, and a racehorse that wouldn't run." She explained to the dog the soundness of the medical procedure and he quit his foolishness right then and there. Dogs have to understand like anyone. She says. The horse "was not racking up many wins", and it turns out that the filly had been traumatized by several injuries and just didn't have enough self-confidence. Penelope fixed it all.

This Dr. Doolittle left some instructions for us mere mortals to use to make contact with our own fuzzies and furries.

"Find a quiet place and sit calmly with your pet. Clear your mind and focus on your pet. Call his name or rub his back to let him know you want to talk. Visualize something, and send it outward in front of your body. Practice sending a mental picture from where you are to a few feet away. Then practice sending the mental picture to your pet. Start by saying hello telepathically. Imagine your pet saying hello back. Move on to 'How are you doing?' Listen carefully for the answer, keeping your mind open only to your pet. Try asking, 'Is there anything you want to tell me?' Take a deep

breath if you don't like the answer. And practice, practice."

After the session, let your pet talk to Ms. Smith about the bill.

Charles Berlitz (of "The Bermuda Triangle" fame) is at it again, according to the "Toronto Sunday Star". Charles wrote two other books -- listed in the non-fiction section of your bookstore -- about the unusual. His latest effort in vintage Berlitz style is "The Lost Ship of Noah", a rambling work about the last 100 years of countless expeditions and sightings of the famed vessel in the Ararat environs.

As to his own opinions, Berlitz says, when asked about the existence of the ark, "I won't say for certain this is Noah's Ark, but it could be." Creationist arkeology at its best.

Anything that looks remotely boat-like has been photographed time and time again. Samples of petrified whatever are taken to be the building materials from the liner.

(Since the Ark presupposes the Deluge, one might wonder why Charles didn't discuss the plausibility of a world-wide flood that covered the entire surface to 18 cubits above Everest. Of course the Ark, at 5.5 miles above sea level for almost a year, may have been heated to maintain proper temperature.

Attorney DAVID PRESSMAN (David did an article on health fraud for "BASIS") sent us a blurb from "The Vegetarian Times" in which super-psychic Uri Geller attributes a great upsurge in his "utensil-twisting abilities when he gave up meat 10 years ago. Geller said that when he ate meat, it took five minutes to bend a spoon, but since becoming a vegetarian, he can do it in one minute or less."

What would happen if he gave up caviar?

From the pages of "Health" magazine, a full-page advertisement for a "perceptron" was forwarded to us. The copy warns us that the "Russians struck first with psychic weapons." NASA, we learn, has spent millions in a frantic attempt to catch up with the latest psychic discoveries so that our fighter pilots could out-psyche the commies in dogfights. NASA developed a top-secret doodad to train our Top Guns how to increase their psychic abilities to the point that they could "know" the next move of their opponents before they made it.

Of course, someone let the secret out, and now you can buy this gizmo for 40 bucks and train yourself. If you don't fly A-16s, you can use your new-gained insight to see what your business competitor is going to do to you before he does it. There's a "complete instruction booklet that discusses psychic ability and

intuition."

Let's hope Joe Montana gets one of those things before Super Sunday.

You are really going to be steamed about this one if you lost money on Black Monday or live in Los Angeles -- or worse, if you are a victim of both. The "Mercury" reports that Jose Arguelles, concocter of Harmonic Convergence, now says that "the energy from the Harmonic Convergence is responsible for the stock-market dive and the L.A. earthquakes."

We don't care what or who is responsible for it, we just want you to tell us a little more SPECIFICALLY in advance. "There will be troubles in the next few months" is not very helpful, Jose.

"When a man's knowledge is not in order, the more of it he has, the greater will be his confusion." -- H. Spencer

#### EDITOR'S CORNER

by Kent Harker  
Editor of "BASIS"

I recently did a presentation on the paranormal for a fraternal order and it was at least as interesting to me because I was able to see how the public reacts to paranormal explanations.

I wanted to show that since parapsychologists have no theory of psi they resort to statistical analyses for support. I wanted to demonstrate that probabilities cannot stand in lieu of theory.

After an introduction about 100 years of parapsychological research that has not produced one replicable experiment, I proposed an "inquiry." The audience of about 35 was seated with the closest row approximately 10 feet away. I held up a quarter, and told them that the test was to determine if the quarter was fair, i.e., unbiased. I stood behind a table with a table-top podium, and flipped the coin twice and reported it to be heads both times.

"Are there any who think the coin is weighted?" I asked.

No takers. I flipped three more times, reporting heads each time. Again my query, and a couple of hands came up. They said it looked suspicious. Then I told them they all had an imaginary \$100 to bet on the bias of the coin based upon the five successive heads.

The two pulled their hands down. I tossed the quarter three more times, reporting all heads.

They began to talk to each other. To my same question, about five hands were raised. They were willing to bet that 8 successive heads

was sufficient reason to venture their \$100 for even money.

Then I announced that the \$100 had suddenly become \$5,000 as a test of their confidence. All hands went down -- the bets were off. The discussion in the audience grew as they questioned one another. Eight successive heads was not enough to risk \$5,000.

"After all," they reasoned, "it COULD happen just by chance."

Now they were beginning to think a little -- to question what was happening. I flipped the coin two more times announcing the same result (heads), and had two takers at \$5,000.

Suddenly, someone blurted, "Hey, how do we know you are telling us the truth about the outcome of the toss?"

"Finally!" I said to myself. Some of those people were ready to place their money (imaginary though it was) solely on my word. After a little applause for his observation, we settled down again. I assured them I had been honest but they wanted someone up there to see for themselves nonetheless.

A representative was chosen and came forward. Then I flipped the coin, turned it on the back of my hand, slightly lifted my fingers off the coin and announced the result. The monitor said he wanted to see, so I removed my hand entirely, exposing the head.

"Now we have eleven trials, all of them heads," I proclaimed. Two more tosses in the same fashion gave me a string of 13. A dozen hands said they were now ready to put their money down. (They had forgotten their brother's counsel for the first ten trials.)

The monitor then protested that I had looked at the coin first, and suggested that I might have been manipulating the coin. The betters immediately withdrew and demanded closer supervision. They said that THEY should flip the coin.

How dare they! I feigned indignation and they relented. But they advised the monitor to watch more carefully.

I patted him on the back and gave a not-too-surreptitious wink. Two more flips and two more heads brought half the audience to a willingness to bet their \$5,000.

I told them I was not convinced of their sincerity and the level of their belief since the money was not real, so I told them it is now \$100,000 -- their life savings.

Almost all wagers were off, because, after all, it "just could be chance" even though it is very unlikely. Two people, however, stuck to their guns. They just didn't think anything that unlikely could occur by chance. Their comments to this effect were interrupted by a gentleman who said he knew that it is possible to flip a coin in a certain way to make it turn up a predetermined face. This made

sense to most, so the pair immediately sucked in their stake.

A number of people were beginning to get hostile. They **INSISTED** that someone else flip the coin. I assured them I had no reason to lie (false) and that I was not using any trickery in conducting the trials (false). A little more ranting on my part, and they were ready to continue.

I noticed that about a third of them had their arms tightly folded across their chests and their eyes riveted on me. It was getting hard for me to keep a straight face.

Three more heads, for a total of 18 straight.

Some of the believers wanted to bet, but were reluctant, if only because of the skeptics. I appealed to them to persuade their cohorts, and the discussion became livelier.

Fortunately, there were no probabilists or conjurers in the crowd. I would have been sunk, so clumsy were my antics.

A challenge came from another corner that perhaps the monitor was in league with me, and that he was not to be trusted either. After all, they couldn't be sure I had not arranged something with him. My protests to the contrary seemed to lay all concerns to rest, especially since they had chosen him, and everybody got right back into things.

I put on my most sincere demeanor and flipped heads twice more.

A portly chap near the center said he had heard that a roulette wheel had been unceremoniously removed from Monte Carlo after a run of nine drops on red. "The coin is weighted -- there was little doubt. The experiment had demonstrated this beyond reasonable doubt," he declared. He would place a million on it.

"Would you really," I asked, "really if it would your own money?"

He waffled a little when he was reminded that it **COULD** happen by chance even though it was so unlikely.

Now members of the audience insisted that someone else flip the coin. They would not go any further without independent verification. I realized that I could not continue my ruse, so I asked them some questions.

"If you don't match my results, will it prove that the coin is fair?" I asked.

Discussion. Several other said that the test would have to be run numerous times under different conditions to be able to state something conclusively. There began to be a consensus that the factors necessary to control a simple thing like a coin toss experiment could be very complex, indeed. I introduced the idea that the number of trials would have to be predetermined or else

someone might quit when a number of "successes" had been achieved. This was a springboard for a discussion of the "decline," the "sheep and goats," and the "experimenter" effects, all alleged to influence the outcome of a parapsychological experiment.

It was now clear that many were thinking about what was, in fact, the point of the demonstration: At what juncture is one able to say there is something other than chance operating? The difficulty of eliminating extraneous data and experimental design flaws was very evident.

One person said, quite solemnly, and quite truly, "You can never know if the experiment is clean."

No matter how hard one tries, there may be some element that has been overlooked. If statistical considerations are all one has to go on, and since statistics only has meaning on the premise of randomness, randomness must be assured before conclusions may be inferred. Such a premise is in fact incredibly complex at least - if not empirically impossible.

Now I increased the complexity of the problem by telling them that I wanted them to consider psychokinesis -- that the turn of the coin could be influenced by my volition or even the unwitting volition of others in the room. There were some in the audience who said they were "lucky" because they felt they could influence things by their concentration. This was bandied about a little, and someone offered, "How would you eliminate that as an influence?" Chaos reigned supreme now.

I asked for some order after listening to a few summaries of the difficulties and how each might be handled, but the question, "At what point does one place confidence that a long sequence of heads could not occur by chance?" was still dangling. This is of course what I wanted to come to. Nearly all agreed that there would be no objective way of concluding that the coin was weighted from coin-tossing experiments.

"What is the goal of this experiment?" I asked them.

"To determine if the coin is weighted," they remembered well. They agreed that, no, we couldn't determine it statistically.

"Is there a better way to find out if the coin is biased?"

The suggestions came in a torrent.

"Weigh it."

"Measure it."

"Look at it under high magnification."

There were many others, but it suddenly brought everything down to

earth. The problem was so simple now. It could be determined objectively and with finality.

To a few groans and a lot of laughter I told them I had lied about the face of the coin and cheated with their spokesperson. All agreed that it wouldn't ultimately have changed the problem very much anyway -- just shifted the difficulty from one area to another.

There was a sense of relief among the participants in this little scenario as several wondered why they hadn't thought of other ways to test the coin before.

Now I asked them to look at "psi" phenomena.

"How can we devise a test of something for which we have no theory of how and why it works let alone its existence in the first place?" I asked.

With the coin we know it exists and we know the kinds of things that would make it biased, and can directly and empirically test those sources of bias one-by-one. These tests could then be replicated independently. After empirical testing, we could use the results of the tests to predict the average outcome of a sequence of tosses. This has the reasoning going in the right direction: from existence, to theory, to statistics. Since there is no theory of psi to test, we cannot devise an experiment to falsify it. Psi is non-falsifiable. If it is non-falsifiable, it is non-scientific and parapsychology is a pseudoscience.

Even if one were to grant the existence of psi, it is impossible to determine if the results of an experiment are due to clairvoyance, pre-cognition, psychokinesis, or telepathy.

Over one hundred years have failed to produce a single experiment that can be replicated in any laboratory at any time. Over one hundred years have failed to produce a plausible theory of psi.

If parapsychologists claim to be scientific and to use the scientific method, is there any other domain of science that has so doggedly continued with such a paucity of evidence for so long?

## SOUTH AFRICAN SKEPTIC VISITS BAY AREA

by Yves Barbero

David Liknaitzky, M.D., a founding member of the Association for the Rational Investigation of the Paranormal (ARIP) of South Africa, visited San Francisco in late October with his wife.

Dr. Liknaitzky, a pathologist in Johannesburg, was contacting skeptics from local groups as he and his wife toured the United States. He said his group of fifteen is just getting off the ground

and he is interested in some of the means local societies have used to increase interest in skepticism.

Despite the enormous social problems in his country, the usual cache of day-to-day claims from psychics, health frauds, and the like abound just as anywhere else. Groups within the medical community are already involved in fighting health fraud, he pointed out, but he and others within ARIP felt that the challenge of paranormal claims needed to be met by an organization of its own.

The group now consists mainly of men and women from the sciences. "All Caucasian", he added with some disappointment; and the women are primarily wives of members. He hopes, as the group grows, to involve members from the community at large and to have members without regard to race or ethnic origin.

Since the Chair, Larry Loebig, could not be present, I acted in his behalf and outlined with Dr. Liknaitzky the various tactics BAS is using to grow and bring public attention to the problems of psychic claims.

The doctor has a commitment of support from BAS and permission to use articles from "BASIS" for the newsletter they plan to start. He assured me that he'll keep us informed about his group's growth.

As we drove around San Francisco taking in the sights, our conversation also dealt with some of the social problems of the modern world.

If more people had the doctor's ideals, I think, there would be more equality and less friction.

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The inimitable ROBERT STEINER, erstwhile Chair and co-founder of BAS, lecturer, performer extraordinaire, President-elect of the Society of American Magicians (SAM), etc., etc. is finally going to do for us what he does for groups in an ever-expanding region in the country, except he isn't going to charge us! Bob's reputation has rapidly spread during the last two or three years to the point that he is speaking and lecturing professionally. His performances before concerned citizens' groups have won him high praise from law enforcement officials.

Bob's keen interest has always been in the best of the Houdini tradition of exposing sleight-of-hand passing for psychic phenomena. He has worked for years in the SAM's subcommittee on magic fraud.

Join BAS on Tuesday, December 15 for this fascinating evening with Bob; we guarantee you will be dazzled and amazed with his performance. You may come away believing in the paranormal if you compare the smoothness of Bob's demonstration compared with, say, Uri Geller. You'll only be sorry if you don't come.

See the Calendar for details and directions.

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