

Bay Area Skeptics Information Sheet
Vol. 7, No. 1
Editor: Kent Harker

PSY-COP
by Laura Hagar

[I think most "BASIS" readers are interested in the personalities as well as the accomplishments of BAS board members, modesty notwithstanding. Ms. Hagar did a report on our illustrious SHAWN CARLSON, which was first published in Express, a Berkeley paper, and she has given permission to run it here. -- Ed.]

Shawn Carlson is a maker of miracles.

In the cluttered living room of a run-down apartment in West Berkeley, he sits in a battered chair looking proudly at an old print of the "Mona Lisa." It's not a particularly good reproduction, too dark and a bit blurry, but it has a mystery all its own, a mystery that has nothing to do with the secret smile or the identity of the model. As I watch, tears well up in the painting's eyes and spill down the canvas.

Carlson, who is working on his PhD in particle physics at UC Berkeley, sits back and crosses his arms, smiling broadly at his creation. At 27, he is one of the most active and controversial members of BAS, a group dedicated to the scientific investigation of paranormal claims. The weeping "Mona Lisa" is Carlson's attempt to duplicate the supposedly miraculous phenomenon known as crying icons.

"Crying icons," he explains, "are paintings or statues of saints or Madonnas that seem to weep human tears or blood. I first learned about the phenomenon years ago from a friend who was a Russian Orthodox seminarian. He said there was no rational explanation for them and that it was a miraculous sign from God. I thought to myself, well, it could be a miracle, but it could be also very well be something else. I decided to find out what.

"It took me only ten minutes to figure out how to duplicate the icon. I made a rough model, then pretty much forgot about it until last December, when I heard a report on television about a supposed religious miracle in Chicago. Three hundred thousand people flocked to this small Albanian Greek Orthodox Church to witness a picture of the Virgin Mary weeping. When I saw how seriously all these people were taking it, I was stunned. They thought they were witnessing a REAL miracle."

The church didn't acknowledge his letter or the letters of several other scientific groups that made similar requests. "So," Carlson Says, "I set out to make a demonstration to prove that their icon might indeed not be a miracle. I used the method I'd come up with years before to make a picture of the 'Mona Lisa' cry."

Carlson is now attempting to patent his icon, and won't reveal the details of the process, but he says the procedure is a simple one, using natural ingredients and technologies that have been available for hundreds of years. He is already dreaming of its commercial applications.

"I'm thinking of it mostly as a novelty item. You know, tacky living room paintings with running waterfalls or portraits of a weeping Tammy Faye Bakker with running mascara...."

Commercial applications for the work of a Bay Area Skeptic are rare, however. For the most part, the skeptics are involved in a serious hobby; theirs is a singular passion. In the past they have investigated such mysteries as UFOs, psychic phenomena, faith healing, and reincarnation.

"Contrary to what a lot of people think," Carlson explains, "the Bay Area Skeptics is not an organization hell bent on debunking. Real skeptics are not cynics. We have some cynics in our group, of course (people who wouldn't believe in a UFO if it landed in their back yard, who wouldn't believe in Bigfoot if it walked up to them in broad daylight and ate their lunch) but they're not the majority.

"A real skeptic is open-minded. A skeptic says, 'I'm willing to believe absolutely anything, but you've got to give me good reason. Not anecdotal evidence, but a good reason, hard evidence. The type of evidence I would require for anything else.'"

Carlson thinks that the reason most people believe in paranormal phenomena is that they have had some kind of personal experience that they can't explain. "The problem is most people are not sufficiently trained in the methods of skeptical inquiry. They don't know how to evaluate these experiences. Human beings are basically lousy observers. We don't observe or we 'mis-remember' critical facts, and we tend not to see things that are inconsistent with our world view. This is the same reason, I think, why the claims of psychics and astrologers are accepted uncritically by so many millions of people."

"I didn't make the icon to insult any one's religious faith," he adds. "I just wanted to show that you can't just accept these events as miraculous because many times what appears to be a miracle at first glance has a perfectly rational explanation. The only way you can tell whether or not a miracle is real is to investigate it, and rule out all the known natural explanations. But the Orthodox Church claims that to even question a miracle is to blaspheme Christ."

"According to the Bible," Carlson adds tersely, "it is blasphemy to believe in a FALSE miracle."

Carlson is not religious in any conventional sense. Though he knows his Bible tolerably well, he seems to have learned it for the purpose of argument rather than faith. Ironically, he looks much like a portrait of a medieval saint. He is slender, blond, and pale, with fine chiseled features and a thin ascetic mouth. Like the saints, Carlson's eyes burn with fervor, but like the enlightened philosophers he admires, his passion is for reason, not for God.

"I don't like to talk about science with a capital 'S'," he says, going on to talk about it that way nonetheless. He is a Scientist the way some people are Artists, and he talks about science as I imagine 19th century historians talked about Manifest Destiny as if it were an invisible force moving through history, massive, unyielding, and inevitable.

Yet in spite of his love for reason and science, or perhaps because of it, Carlson has always felt drawn towards the supernatural and mysterious. "When I was younger, I read a lot about the occult and did psychic experiments with my friends. I was interested in it in a very experimental way. I wanted to know, for instance, if paranormal abilities existed, how could you test for them?" Carlson began studying stage magic at the age of twelve and at sixteen left home to work as a street magician on the streets of Venice, California. He still studies stage magic on the side, and sometimes, as he talks, a coin flashes between his fingers, disappearing and reappearing in his expert palm.

The weeping "Mona Lisa" is not Carlson's first foray into skeptical inquiry. He received worldwide attention in 1985 for his experimental test of astrology. The results of that test, published in "Nature" (Dec. 1985), proved what the scientific community suspected all along: Astrology does not work.

Surprisingly, Carlson began his astrology experiment almost by accident, as the result of a dare made by one of his professors.

"We were discussing the problems of testing psychic phenomena, when he said that the problem with this stuff was that it couldn't be tested. Astrology, for instance, he said, couldn't be tested. Now, that seemed to me to be really absurd. After all astrologers make definite claims about what their abilities are. You ought to be able to test those. So my professor challenged me to go home and create a test of astrology."

"[After the test that debunked astrology] the astrologers were not happy. After all, astrology is a very big business. It's estimated that money spent for counseling alone is a hundred million dollars a year. After I published my results, I was immediately libeled by several astrological publications, I was accused of all sorts of

professional and personal improprieties, all of which were completely without foundation. They accused me of lying about my data, of altering the results after I'd gotten them so as to make the astrologers look bad. They now refer to me by putting quotes around the word `scientist,' as if I don't qualify.

"The question is really one of consumer advocacy: Can the astrologers provide the services they're charging for? The answer, I think, is obviously not. This is especially important because so many people take astrologers' advice so seriously. They alter their life's course based on the advice of astrologers: People decide to get married or not; they decide to move; they decide what career to take; how many children to have and when they should have them. All sorts of things of fundamental importance. All we demanded was evidence that astrologers could do what they claimed, but the fact is astrologers have never been able to show anyone that they can do what they claim. This is essentially my message. They can't do it. Stay away from them."

There is a fervor in Carlson's voice as he says this. He leans forward in his chair, his words clipped and forceful. Though we are alone in the room, he speaks as if he is talking to an audience. His tone is commanding; his voice resonates with paternal concern.

Carlson says, "I don't feel any kind of disdain for people who believe in astrology or faith healers or trance channelers. I just think the whole thing is very sad, because most of these people are very sincere. They are, in their own way, seeking for truth. I think they're misguided, of course. Maybe, in the heat of passion, I say, `Argh, these idiots!' but when I calm down, what I really feel is sorrow."

Like all skeptics, Carlson wishes that the public would learn to be more skeptical. He hopes his efforts will inspire people to be more critical of claims of the paranormal.

"It is part of our job as skeptics to educate the public, and to alert them to fraud, especially when it involves the public health. But people should learn to be more skeptical themselves. The Bay Area Skeptics are working towards the day when people will no longer fall prey to ancient superstition, New Age fads, and charlatanism."

SOMETHING'S FISHY
by Ronnie Hastings, Ph.D.

[Note: For those unfamiliar with the creation/evolution debate, the so-called scientific creationists are ever busy trying to establish creationism by finding flaws in evolutionary theory. This seems to be easier for them since they have no evidence for creationism, so they count evidence against evolution as a case for their notions.

One way to falsify the evolutionary timetable would be to find material out of place; e.g., a human bone contemporaneous with dinosaur bones. Reverend Carl Baugh is a tireless worker in this endeavor, laboring year in and out in the Glenn Rose, Texas area in hopes of finding such evidence.

The following article appeared in the "North Texas Skeptic". --Ed.]

In what must be seen as a pleasant surprise, Rev. Carl Baugh, of recent "Glen Rose Man" fame, found a "human" tooth and took it to the Balcones Lab near Austin for identification in early July, 1987. Rarely does Baugh behave so scientifically, so this action alone is to his credit. But his trip probably is indicative of his supreme confidence that he has a genuine human tooth from Cretaceous deposits, a piece of evidence that would at last topple evolution as his man-tracks so miserably failed to do by turning out not to be man-tracks at all. Unfortunately for Baugh, once again, his evidence does not seem to merit such confidence.

Communication from paleontologist Wann Langston, Jr. states that the other fossilized teeth Baugh brought in addition to the "human" tooth were clearly grinding teeth of pycnodonts, Mesozoic bony fishes related to modern gars and bowfins. Worn-down incisors of pycnodonts, having a couple of cusps, would indeed have a superficial resemblance to human dentition in the eyes of the zealous and uninformed; his "human" tooth is most likely such an incisor.

Remains of the pycnodonts have been found in the lower Cretaceous deposits of central Texas and, though long known, have not been widely studied. It is also known that Cretaceous precursors of the modern sheepshead fish had broad incisors. Such remains in the Glen Rose limestone are compatible with the well-known lower Cretaceous ecology of a large, flat marine tidal basin upon which the dinosaurs trod at low tide. Baugh's new teeth were allegedly found in a marl layer covering a limestone deposit preserving unmistakable dinosaur prints (the same layer in which Baugh claims man-tracks, rather featureless isolated depressions alongside dinosaur trails, some of which were probably made by the dinosaur's tail or other appendage).

As the Nebraska Man tooth turned out to be a pig's tooth, it looks as if "Glen Rose Man" will turn out to be a fish's tooth.

Apparently Baugh had other "out-of-order" fossil samples allegedly from the same marl layer, but there is no indication that he left them at the laboratory to be identified.

THE GELLER DEFECT

Uri Geller is thoroughly entrenched in the fabric of society. This shock was brought about by an article that appeared in a

professional journal, "International Mining".

Uri formed a mineral exploration group known as Uri Geller Associates (UGA) in London comprised of professional engineers and geologists from around the world. (A little enlightenment about this later.)

In what can only be described as stark naivete, the author gushes, "What is certain is that he possesses powers that can only be described as amazing, that volumes of learned scientific papers have been written about him and his talents, and that no one, including Geller himself, really understands how or why the things that happen in his presence do so."

Apparently things got under way when Geller visited the offices of Clive Menell, chairman of the board of a mining consortium, and they rolled out a huge map (of Africa) on a table. Geller "spread out [his] hands and moved them around in the air above the map until [he] felt magnetic sensation on one of [his] palms. [He] then scanned the area directly underneath with a fingertip and pointed to a specific location, which the geologists marked."

Naturally, minerals were found there, so the Jan. 28, 1980 issue of "Newsweek" reported that Geller had found coal. On the strength of that validation, a Japanese corporation contracted with Geller to the tune of \$2 million over a six-year period. Uri claims that his contract with them precludes him from divulging its name.

Uri described the methods he uses to find the minerals for the Japanese. He "map dowses" with his hands (he says he is more sensitive that way than with some other device) to find a general area, memorizes the geomorphology when he has strong impressions, and then flies over the area for closer sensations, and finishes by hoofing it out to fine tune.

The results? "The corporation eventually examined several of the areas I marked on the maps they gave me, and a number of these are, I hope, now producing gold," said Geller.

That's a big hope for \$2 million.

Another mining company hired Uri to dowse diamonds, and, at last report geologists said that "the sample indicated a high prospectivity of the rocks from that area for diamond bearing host rocks."

Geller said he advised one company not to mine in a particular area, that they would be wasting exploration money. They did not heed his warning and allegedly lost \$50 million.

It would be interesting to have that confirmed. It is very easy to make a blank statement like that for which it is nearly impossible to verify.

How did Uri convince the "IM" staff of his powers, you ask?

"Geller demonstrated his technique by finding a gold ring secreted in the top of a foolscap envelope under a pile of papers, on a desk covered in papers. `I close my eyes and I do this (stretches out his left arm), I believe that my hand is only a tool, it's nothing to do with my hand, I can also probably go like that (folds his arms), but I'm not used to doing it that way, I'm just used to doing it with stretched hands."

Uri's other two members of UGA are an amateur dowser and a managing director of "Hunter Personnel" in the UK.

One of the references "for further reading" at the end of the article is Charles Panati's, "The Geller Papers". That book is so preposterous that reading only a few pages would turn anyone even mildly skeptical inside-out. Surely, the editors of "MI" did not even scan it.

HELP?

MICHAEL SORENS is looking for a few good skeptics to appear on a panel with the tentative theme, "What harm can it do to believe in UFOs, psychics, faith healers, etc.?" This panel will be held at the Bay Area Science Fiction & Fantasy Convention (BayCon) in May 1988.

For those who haven't been to SciFi conventions, the participants are typically intelligent and articulate. Therefore, one might think that they wouldn't need any skeptical enlightenment, but, alas, this is not the case. We have seen that intelligence is not an insulation from nonsense.

Michael is on the planning committee and wants to put a panel together with people from BAS. Since there are as many as 2,200 people at these gatherings, this is an excellent opportunity. Call Michael at (408) 265-2719, or write hem c/o the editor of "BASIS".

EDITOR'S CORNER

by Kent Harker

What constitutes proof? At what point does one give his or her assent and say he or she believes that such-and-such is correct?

If the question is a scientific one, the scientific method outlines the rules of procedure and evidence. If the question is a philosophic or religious one, belief is arrived at in a manner that may not submit to scientific analysis. This does not diminish the value of non-scientific propositions or beliefs -- it just places them in another domain. The experience of love, for example, is not

insignificant just because it cannot be rationally dissected.

On the road to truth one experiences many roadblocks, detours, and not a few mirages. A common tactic encountered is that of switching the responsibility for proof, which usually results in trying to prove a universal negative -- and this may be effectively impossible. For example, B tells you humans can fly, to which he challenges, "Prove they can't!"

If B offers propositions X and Y, and you accept only X, it remains to B to show that his extra belief is warranted. If both you and B believe that humans can walk, and B states, additionally, that humans can fly by flapping their arms, your natural response should be, "That's interesting, please show me the evidence for your assertion." You would be amused at least by B's insistence that you disprove it. Nor should B's testimonials that he had personally witnessed ordinary people flapping their arms and flying move you. You might point out that many physical laws would be violated, and some rather more convincing evidence must be offered. Personal testimony builds faith, but not a scientific case.

Are we obliged to believe what B says until there is evidence to the contrary? B would only have to say you have not tested his supposition in the right way, or you have failed to use the right words, or some other excuse. No matter what is done, B has only to offer excuses to brush aside your counter-examples, and there is a never-ending supply of excuses. If one's position is that he will continue to believe in unicorns until it is conclusively proved there is no such thing he is eternally safe in his belief -- irrational, but safe.

Weigh the case of Jim Todd and his arithmetic dog, Sonny (see the July issue of "BASIS"). Had the skeptics accepted the burden of proof and tried to prove that Sonny could NOT perform mathematical miracles, Todd would have only to say that Sonny was tired (which, incidentally, is exactly what he DID say.) Todd made a claim that he could not support under controlled conditions. That does not prove that Sonny could not pass the CPA exam tomorrow. It just means that the skeptic is not required to move off his neutral position of skepticism.

The demonstration of Sonny's mathematical abilities was such an utter failure, in fact, that one is forced to conclude that Sonny's talents lie entirely in Mr. Todd's imagination. But a public failure does nothing to move the believers from their position. In fact, just last week I heard a sharp "yap-yap" on KGO radio. Jim and Sonny were the featured guests on a talk show.

Another hazard on the way to determining proof is the false dichotomy. This is another way of diverting attention from where the burden of proof properly rests. A true dichotomy exists when propositions X and Y are mutually exclusive and exhaustive, i.e., they are completely independent and together they cover all possibilities. (Only Abbott and Costello may be excused when they

reason that if today isn't the 4th of July it must be Christmas.)

For example, the scientific creationists assail evolutionary theory as a method of establishing their beliefs. They claim on the one hand that evolution is not scientific because it is non-falsifiable; they then attempt to demonstrate that evolution is false. This is followed by the false dichotomy: they proclaim that since evolution is false, therefore creationism is established. This is accomplished without a shred of positive evidence being presented.

The unfortunate side to this is that many scientists pick up the gauntlet and start defending evolution! Defense of position T when the opposition advances X by attacking T is a mistake. If position T is demonstrated to be false means only that T is false, not that X is established in the process. The establishment of X requires that arguments for X be firmly advanced. Evolutionists need only fold their arms and yawn when creationists attack evolution. No response is necessary in the absence of proof that creationism is a better theory.

The most important fact about a belief based on reason is that it can and will be changed in the light of new evidence. Belief based on faith or personal experience, however, is not usually shaken by any amount of knock-down, staring contradiction. It would seem to be just the opposite, in fact. If you have made an idea part of your identity, giving it up is very difficult.

If the Bohr model of the atom turns out to be incorrect, what is the consequence? Well, Bohr might be pinched about it, but only for awhile. Nuclear physicists would be so thrilled with the new discovery they might not leave their labs for months! The rest of us would be somewhat less excited, even if we had accepted the Bohr model and incorporated it into our view of the universe. The true spirit of a skeptic is to acquiesce to new theory when the evidence is sufficient, and unceremoniously place the rejected idea on the trash heap. Of course there is a certain amount of pain or embarrassment when one is wrong, but that's as far as it should go. To be wrong is not the end of the world. To lose one's sense of identity is.

When the earth was displaced from the center of the universe, the only ones that suffered for it were the clergy and their catechists who had tied their system of faith to it. The intertangling of the geocentrism and theology had become so intricate that early Christian dogma was threatened to the very core with the Copernican revolution. The Bishops refused to look into Galileo's telescope because to do so would have been an act of heresy -- they knew what they MUST see -- whatever else one might suppose was there would be in error if it differed from what they accepted as revealed Truth. There was no need to place the eyepiece of the scope to their brow.

Logic is a good place to start on a proposition. Most propositions

will submit themselves to some form of logical analysis. If it turns out that the idea violates the basic canons of formal logic it may be unnecessary to proceed further.

THAT 'OL BLACK MAGIC

by Bill Bennetta

David R. Godine, a Boston Publisher, issued in 1983 a facsimile edition of "The American Boy's Handy Book," which had been published in 1890 by Scribner's. It was a 430-page manual of crafts, games and other diversions, and its range was impressive: building boats or snow forts or cabins, staging plays or shadow-puppet performances, stuffing birds, training dogs, and constructing such devices as mole traps, water telescopes and the "paradoxical whirligig." Reading it is a genuine delight.

In one of his expositions on showmanship, the author (D. C. Beard) told his young readers how to do fortune-telling. I could not help noticing that his concise introduction to that subject is just as timely now as it was on the day when he wrote it. It has lost nothing, and, I think, might profitably be presented verbatim to young people today. Here it is:

"There exists in all countries a class of people who make their living out of the proceeds derived from tricks and deceptions practiced upon the ignorant, credulous, or superstitious portion of the population.

"In the by-streets of almost any large city may be seen signs posted up on dingy-looking houses, which, if they were to be believed, would lead us to think that the gifted race that live in these dwellings can, by the aid of spirits, fairies, or by the signs in the heavens, give accurate information of all past or future events.

"Some of these so-called mediums make such bungling attempts at magic and necromancy that it is a wonder that they are able to deceive anyone. Others, however, perform some really wonderful tricks.

"With a little trouble and no expense any boy may fit himself out as a fortune-teller, and have an unlimited amount of fun with his friends, who may be mystified and puzzled by simple contrivances, which, if explained to them, would be immediately understood...."

Beard then undertakes his instruction for building two such contrivances, which he calls the fortune-teller's box and the magic cask. I have not yet essayed to construct either, but I suspect that each can produce effects that would put any commercial astrologer or palm-reader to shame.

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 comment with the submission, please do so.]

Fresno skeptic MORRIS HUGGINS culled a bit from "Insight", a publication from Cal State Fresno journalism dept. about dowsing. Don Henvick's November article brought quite a response.

Time was that water-witchers explained that the "underground springs" somehow have an effect on the implements -- usually sticks or rods of some sort -- they use. The "Insight" feature shows that things are changing. Seventy-three-year-old Carter Hoffman, president of the Central California Chapter of the American Society of Dowsters, reveals, "I use many different instruments, but mostly it's me. The instrument doesn't really mean a thing, really. It's the man or the woman. We're the instrument."

The paraphernalia are as varied as the imagination: "car keys, brass rods, clothes hangers, willow branches and pendulums made of crystal, brass or wood." That, and a "positive attitude". You have to believe.

"If you say it's not going to work, then it's not going to work", declares Hoffman. This same dowser asserts he is 97% accurate.

If the dowser is the instrument, other statements made by Hoffman in the article are baffling: "Instead of using a traditional divining rod made of wood, Hoffman uses a nylon one. He said the wooden one is too dangerous. `It will just tear the hide right out of your hand [i.e., when the rod reacts to the presence of water].'" That seems to say very clearly that the rod is acting independently of the holder.

The article was well-balanced, with a discussion of the science of finding water by studying geologic features.

As with all matters of untested faith, disconfirming data only elicit excuses, never a turn-around. When a geologist, studying dowsing, questioned the dowser who had just witched a dry well to find how it happened, he replied, "I finally figured it out. I was wearing my boots that day and I insulated myself from the ground." Again, this appears that a separate force, independent of the individual, is acting from which he or she can be insulated. And then why did his device indicate the water was there in the first place?

Surely, there is another excuse to cover that.

The University of Hawaii campus center was packed to the walls to

hear Michael and Aurora El-Legion, "International Directors of the Extra-Terrestrial Communications Network."

The El-Legions gave a film and slide presentation in which their UFO pictures "...had been authenticated by top NASA equipment."

Aurora had an experience with the ETs "where they actually teleported her and her car through aa time-space warp during 5 p.m. rush-hour traffic." She says that many of the space folk are acting as out "Guardian Angels".

Michael gave his "Akashic Life Readings, which are designed to attune a person more closely to who they are and what their mission is for incarnation on earth at this time". He accomplishes these readings by channeling information from the "Ascended Master level, beings on the Christed-Buddhic plane who are also members of the Intergalactic Confederation".

These people are very much concerned about our earth. What marvelous fortune we have by living in an era when the great channelers are in tune with beings who can explain why Aunt Jessie broods about her lost cat.

Well, about two weeks after the Hawaii stint, the El-Legions were indicted in a phone credit-card scam that cost U.S. Sprint \$500,000. The federal grand jury charges specified that the pair sold about 50 unauthorized credit cards for a fee ranging from about \$65 to \$125 per month. That, coupled with their seance fees (all tax free, of course) is a tidy fund.

Of course their alleged credit-card fraud is no indication that their channeling stuff is anything but squeaky clean. After all, that top NASA equipment checked it out.

The "Chron." thought the following deserved a headline: "An Oakland woman who drove to Reno because she was feeling lucky hit a \$1 million slot machine jackpot".

The reader was to go to page 3 for the story.

MS. WERBY, who sent the clip to us, appropriately notes, "How many people drive to Reno because they're sure they are going to crap out that day?"

THE REAL MCCOY

Head of the Minnesota Skeptics, Robert McCoy has moved the press to look at some of his efforts in a laudatory article citing the work of CSICOP and the Minnesota group.

McCoy is something of a rascal himself. He delights in the unusual,

but approaches it with careful skepticism, making light of the stream of baloney that parades for reality. He was successful in persuading a Morristown man to confess to a 1979 UFO hoax that really got out of hand.

"On a September night that year, David Olson, an admitted practical joker, went into cousin Curtis Olson's farm field and commenced to mess it up."

"The prankster tied gunnysacks over his shoes to avoid leaving footprints. He trampled cornstalks and singed the perimeter with a butane torch to simulate an alien spaceship landing."

"The prank was perfect. Too perfect. Within days, out-of-state UFO investigators and the media converged on the field like so many locusts, and Olson, fearing family reaction and maybe even arrest, kept the joke to himself."

"It was only when he saw McCoy's letter to the editor in a Minneapolis newspaper, in which the hoaxbuster debunked the newspaper's publishing of a UFO photograph, that he contacted McCoy and decided to tell it all."

"`He never told until nine years later, but even after he confessed, some people didn't believe it', McCoy says."

"Olson says his cousin still maintains that something unexplainable happened that night in his cornfield. Olson, a 44-year-old chemist, says he can understand his cousin's disbelief, if not his logic."

"`There may be intelligent life out there, but I don't think it's going to manifest itself in somebody's cornfield', says Olson, who believes people's growing capacity for gullibility has been misguidedly linked to rapid advances in high technology."

"`People see that we've put a man on the moon, they see all these other high-tech things being done, so they've come to believe that ANYTHING can happen.'"

McCoy has appeared on the David Letterman Show displaying his "collection of vintage quackery devices."

"If the conclusion determines the reasoning, the reasoning is sham." -- Peirce

NOVEMBER MEETING
by Norman Sperling

The task of science is to figure out how nature works. As suspected since ancient times, nature appears to work in patterns -- most

notably, in the characteristics that can be expressed mathematically -- frequently expressed as paradigms. Symmetries and patterns illustrated in aspects of nature also point to generalizations about "how nature works".

The development of science involves interplay between observing (acquiring data) and theorizing (proposing candidate paradigms to fit existing data and predict further data). New data acquired, whether or not intended for the current problem, may point the way to revise or extend the current candidate paradigm.

A paradigm may be proposed even when there is no known cause for it (Kepler's Laws); or an insight into the reasons things work a certain way may suggest greatly extended paradigms (plate tectonics). Theoreticians who perceive the grandest paradigms from the earliest data make the most celebrated leaps (Darwin's evolution, Newton's mechanics and Einstein's relativity). When the grand paradigm develops collectively and gradually (as with quantum mechanics) rather than quickly by an individual, science advances just as much, but there is less popular attention.

To be acceptable, a candidate paradigm must fit current data. (The unfortunate expression "scientists believe that..." is more appropriately "current evidence indicates that..."). But science has so far found out only a little about nature's workings, compared to the vast fields that remain unexplored. Claude Gregory, who edited the French science series "Encyclopedia Universalis", concluded "that we don't know anything" yet about the true workings of nature. Greater understanding of biochemistry would result, for example, in eliminating screening tests and in designing, by computer, chemicals that react predictably.

On the leading edges lie topics where a few outlying data points can barely be perceived, and candidate paradigms suggested to relate to them may be held very tentatively indeed. An analogy might be to the way fog obscures things.

From time to time, an elegant theory (a particularly simple and powerful formulation) is demolished by discovery of an "ugly fact". This happened with an exciting candidate paradigm that tied together several data on the frontier: Lockyer's "meteoritic hypothesis" of solar energy and spiral nebulae, circa 1890. Individuals who regard a theory as so compelling that they "believed" it may react by contesting the new data (successfully in the polywater scandal), or by adjusting the theory to accommodate the new data (Hoyle's steady-state cosmologies), or - if human attitudes overcome scientific discipline -- by psychologically rejecting anything contrary to their adopted paradigm (phlogiston). Thus advocates may cling to a paradigm after mainstream science passes it by (Arp's non-cosmological quasars). Failed candidate paradigms are, fortunately, not utterly forgotten. Many make fascinating case studies, many bear lessons for the present and the future, and a few turn out to be valid for cases not known at the time they were proposed (Hadley vortex, moon

volcanoes).

Can we regard acceptance of pseudoscience -- astrology, creationism, UFOs, faith healing, Velikovsky, parapsychology -- as adoption of candidate paradigms, accompanied by ignorance or denial of contrary evidence? Is the distinction between science and pseudoscience a matter of the criteria of evidence?

[Norman Sperling teaches astronomy and space science at Cal State U. Hayward, lectures at Morrison Planetarium in San Francisco, and is completing his MA in History of Science at UC Berkeley. The latest of his 75 published articles, "Of Asteroids and Quasars", appears in the fall issue of "Pacific Discovery". He has been a planetarium director and an editor of "Sky and Telescope" magazine. -- Ed.]

WHY THE IRRATIONAL?

In an attempt to bring understanding to the question of why so many of us cling to such clearly irrational nonsense, Mankato State University psychology professor Mary Jo Meadow, an authority on the psychology of religion, says belief in the bizarre and unexplainable is closely tied to religious belief systems.

"These things (UFOs, psychics, shamanism, astral projection, etc.) function as religious beliefs in that they're explaining the unexplainable in the cosmos", Meadow says. "To take on a belief can give you a lot of security and satisfaction."

The problem is that when the belief is dispelled, the truth makes a poor substitute. "Once a person invests in a belief, it becomes much harder to give it up, and he or she starts distorting reality in order to hold on to the beliefs."

Sobering thoughts for the dangers of walking into the unknown or ill-understood without a skeptical shield.

UFO CONTACTS

Dr. James Harder, professor of Engineering at UC Berkeley, will be the featured speaker at the January BAS meeting.

Dr. Harder is a long-time advocate of the extra-terrestrial explanation for UFOs. Specifically, the "nuts-and-bolts" variety of UFOs as opposed to "interdimensional" hypotheses advanced by some enthusiasts to explain why some UFOs are witnessed by human observers but not traced on radar screens when the sightings occur in areas covered by radar detection systems.

Harder is expected to discuss what he calls "the overwhelming

evidence for an alien presence". In addition, Dr. Harder has long been an outspoken protagonist of various conspiracy theories. On a local TV program in which he appeared with Robert Sheaffer, Harder intimated that Sheaffer was a party to the government cover-up, probably receiving money to "keep quiet".

This should be a fascinating evening to spend with a knowledgeable and reputable UFOlogist. Get your best questions ready and be prepared for a lively discussion!

"Faith, fanatic faith, once wedded fast to some dear falsehood, hugs it to the last." -- Sir Thomas Moore

Opinions expressed in "BASIS" are those of the authors and do not necessarily reflect those of BAS, its board or its advisors.

The above are selected articles from the January, 1988 issue of "BASIS", the monthly publication of Bay Area Skeptics. You can obtain a free sample copy by sending your name and address to BAY AREA SKEPTICS, 4030 Moraga, San Francisco, CA 94122-3928 or by leaving a message on "The Skeptic's Board" BBS (415-648-8944) or on the 415-LA-TRUTH (voice) hotline.

Copyright (C) 1988 BAY AREA SKEPTICS. Reprints must credit "BASIS, newsletter of the Bay Area Skeptics, 4030 Moraga, San Francisco, CA 94122-3928."

-END-