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Browning Emotions

by Mike Sullivan, Associate Editor

Earthquakes are one of Nature's most deadly and unpredictable disasters. So it stands to reason that top seismologists and earth scientists would welcome all the help they can get trying to predict these devastating killers if at all possible. Yet today, some of the nation's best experts on earthquakes are rejecting the startling prediction of a major quake in the Mid-South on or about December 3, 1990.

The unusually exact prediction was made last fall by Dr. Iben Browning, a 72-year old retired Ph.D. in biology and self-proclaimed climatologist, seismologist, financial theorist and earthquake expert from Sandia, New Mexico. Further support was given to Browning's prediction by Dr. David Stewart, the director of earthquake studies at Southeast Missouri State University in Cape Girardeau, Missouri. As we will see, both Browning and Stewart have made incredible claims in the past with no evidence to back up their wild statements.

Browning predicts with 50-50 probability that a major quake of from 6.5 to 7.0 on the open-ended Richter scale will strike the New Madrid fault line in the South Central United States within 48 hours of December 3, 1990. In 1811 and 1812 the New Madrid fault produced some of the most violent quakes in North America. Browning makes his prediction based on his theory that strong tidal forces will peak on that date, allegedly providing the right conditions for a major quake.

Covering his bets, Browning widened his prediction to include the entire *globe* between 30N and 60N latitude. As if that weren't a big enough blanket, Browning goes on to explain that if his December 3 date doesn't come through, that December 31, 1990 is also a likely New Madrid quake date. US Geological Survey (USGS) experts concur that there *is* a good chance of a major quake along New Madrid *sometime in the next 40 years*. And as a final cover-all, Browning says he is also "worried" about another major quake in California. Such statements have been compared to "throwing darts at a calendar" by USGS official Walt Hays.

CRITICAL EVALUATION

After wide coverage of Browning's prediction by the public press, a team of independent researchers was formed by the USGS to investigate Browning's track record, methodology and any scientific basis for his claims. This group, called the National Earthquake Prediction Evaluation Council (NEPEC), reported back to the USGS in St. Louis on October 18th.

The NEPEC report found no basis whatever for Browning's theory that quakes are more likely during periods of strong tidal forces caused by the moon, sun and the planets. Browning claims that December 3, 1990 will mark a 178-year high for such forces. The NEPEC report stated that there is no correlation between tidal forces and quake activity. Furthermore, NEPEC reported that Browning's claims of past successes in predicting the Loma Prieta/San Francisco killer quake of October 17, 1989 and the eruption of Mount St. Helens in 1980 are groundless.

"Most of his claimed successes are actually what I call post-dictions," said NEPEC's Arch Johnston, head of Memphis State University's Center for Earthquake Research. Indeed, Browning offers no details on his claimed past predictions, and won't grant interviews on the current controversy, claiming he's too busy.

NTS MEMBERS INVESTIGATE

Dr. David Dunn, dean of Natural Sciences and Mathematics at UT-Dallas and North Texas Skeptics (NTS) technical advisor, reviewed a 20-

page report backing Browning's claims issued by Stewart on June 18, 1990. Dunn says he knows of no scientific basis for Browning's theory, and reaffirmed that no evidence exists to show a relationship of quakes and tidal forces as Browning purports. Dunn was interviewed by Dallas- and St. Louis-area reporters following the NEPEC press conference, and by NTS President John Blanton for this article.

Dunn can give no explanation why Stewart would back Browning's prediction and suggested that we ask Stewart what his motives might be. We tried, but Stewart's office informed us that Stewart isn't granting interviews until after November 1. We left a message on October 25 asking Stewart to grant an interview; at deadline for *The Skeptic*, we had not received a return call from Stewart or his staff.

As busy as he claims he is, the retired Browning does find time to hold up to three news conferences per week, according to Blanton, and Browning is selling a \$99.00 videotape of his predictions in the area of Browning's predicted quake.

STEWART'S RECORD

Dr. Stewart, Browning's supporter for the December prediction, has been in the public spotlight before, with ridiculous results. In 1974, Stewart was an assistant professor at the University of North Carolina at Chapel Hill when he saw a pattern of elevation changes near a nuclear power plant construction site in the vicinity of Wilmington, North Carolina. At the time, the pattern Stewart noticed was considered a good indicator of potential seismic activity, according to Dunn. Today such indications are believed to apply to only 30% of earthquake-producing faults, Dunn said.

Stewart suggested that the Nuclear Regulatory Commission study the area prior to approving the licensing of the plant. The NRC ordered a study, and in June of 1975, Stewart contacted psychic Clarissa Bernhardt of Los Gatos, California, after reading in the *National Enquirer* about her alleged successful predictions of other quakes. Stewart is an admitted believer in psychic phenomena.

Stewart sent Bernhardt his petition to the NRC for her to study before she visited him in North Carolina for a first-hand "inspection" of the state. During the visit, Stewart and Bernhardt *flew* across the area in an airplane, after which Bernhardt confidently predicted a 8.0 or greater quake in the Wilmington area within a year, but most probably on January 17, 1976. As with Browning's current prediction, the 1975 Stewart/Bernhardt prediction had wide coverage in the press and caused low-level public panic in the area. The panic continued until the January date, when, amazingly, nothing happened. In fact, no seismic activity has ever been reported in the Wilmington area, and no significant faults have ever been found there.

Stewart was totally discredited as a result of the Wilmington debacle, and lost his position at UNC-Chapel Hill shortly afterward. Dr. Dunn was a professor of geology at UNC-Chapel Hill at the time, and says that Stewart is again using his flawed logic with Browning's December 3 prediction.

"He takes an undocumented claim, he says the individual has a track record of success, and therefore, he says, the individual can't be ignored," Dunn told *The Dallas Morning News*.

PUBLIC DISSERVICE

Where's the harm done by Browning's prediction? Here are just a few examples:

- Browning's prediction has caused more than a dozen schools in four states to cancel classes for December 3 & 4!
- Arkansas officials are scheduling emergency "quake drills" for early December, and insurance companies are seeing sudden interest in earthquake insurance policies from people in Browning's predicted quake zone. The waste of time, money and resources on panic-driven exercises like these could be well spent elsewhere.
- Even giant Anheuser-Busch in St. Louis has begun installing more back-up equipment for their computer systems based on Browning's prediction (Computer Reseller News, October 22, 1990)!
- After the panic caused by Browning's prediction dies down when no quake occurs in December, the public will be less likely to put stock in valid science stories in the future.

Wild claims like Browning's get plenty of uncritical press coverage. Lee Hancock of *The Dallas Morning News* provided some welcome balance in a story run on October 21, forming the basis for this article. Other reports by the Associated Press and St. Louis *Post-Dispatch* are also beginning to debunk Browning's outlandish statements, but probably too late to quell unfounded public concern. NBC-TV is even planning to air a miniseries November 11 & 12, "*The Big One: The Great Los Angeles Earthquake*," depicting how a controversial prediction like Browning's comes true, devastating LA. Our next issue will follow up Browning's prediction and what story, if any, he and Stewart concoct to explain the non-event they have scheduled for December 3.

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Satanism: Much Sensationalism; Little Substance

by Joe Voelkering

The September NTS presentation by Dr. Ronald Flowers, a theology professor at TCU, probably disappointed those expecting to hear what a huge problem satanism is. His message was that actual satanic cults are rare. The lecture certainly wasn't boring though. Dr. Flowers provided an excellent outline on numerous controversial religious cults and sects that espouse pseudoscientific beliefs. He also included some very good information on various fundamentalist movements, including creationist groups, faith healers, etc.

Most of his remarks are paraphrased for brevity in this summary. Some are undoubtedly the writer's interpretation or understanding. Hopefully, the substance of his presentation is unchanged.

Dr. Flowers' specialty concerns the separation of church and state. A byproduct of that work has been a good insight into the workings of a wide range of religious groups, particularly those on the far ends of the theological spectrum. Thus, he was able to provide a wealth of information on the professed rationales employed by controversial factions. His presentation started with a somewhat historical overview of the various groups, and how they fit into the religious community as a whole.

At one point, some in the audience were probably wondering what that had to do with satanism. However, it soon became apparent that claims of satanic activity were one of the few options that could explain events inconsistent with the beliefs of certain groups. Thus, we were treated to not only an opinion on the overstated "problem" of satanic cults - but to an insight on why it is a popular "answer" as to the causes of many bizarre activities.

Dr. Flowers' presentation concentrated around Christianity because it is the basis of most religious movements in the U.S. As he noted, there was essentially a single Christian religion up to the time of Martin Luther - at which point factions split off frequently. As denominations became more progressive, keeping pace with society as a whole, splinter groups would break away, to return to what they regarded as a "pure, untainted" doctrine. Many would isolate themselves from society in general, so as to not become contaminated by those "less pure" than themselves.

As a general rule, if such a group is guided by a particular philosophy, rather than a specific person with "special" powers, they are commonly seen as sects. If the leader is a particularly charismatic individual claiming to have such "special" powers, they are generally regarded as cults. Sects and cults regularly view those outside the group as bad, evil, etc. -- at least until the outsider is "saved" by joining that particular group.

Fundamentalist groups are somewhat more progressive than many of the traditionalist sects and cults, but they're quite close when viewing the overall span of religious beliefs. From that end of the scale, one progresses through the more tolerant conservative and moderate groups to the fairly flexible modernist factions.

A fundamentalist/traditionalist, that believes in a benevolent Deity with an active influence on daily human events, often runs into a glaring dichotomy: How can bad things happen to good people? What could have caused the downfall of Jim and Tammy? How can a young born-again Christian be killed by drug dealers? An answer that conforms with the religious belief is: The devil did it!

If a "true believer" reads the paper or watches the news regularly, the devil would appear to have many helpers. A lot of bad things happen: crime, moral decay, war, etc. It would seem the devil must have disciples all over the place. It would also appear they must be organized in cults, or similar groups, to obtain the vast number of followers required to cause all those events to occur.

Typical media response expands that myth. Satanic cults are newsworthy items -- whereas ordinary mean, nasty people aren't likely to be the top story for the day. For validity, mix in reports on one of the very few bona fide satanic cults, and the whole issue bootstraps itself into the headlines on a regular basis. Further, add in the individuals that borrow the rituals, but not the satanic beliefs, to gain attention -- or to control others through fear -- and the myth becomes self-perpetuating.

It's interesting to note that Dr. Flowers' conclusions are essentially the same as those detailed by Robert Hicks in the spring and summer 1990 issues of the *Skeptical Inquirer*. Hicks evaluated the issue from the perspective of a law enforcement specialist and criminal justice analyst; Flowers evaluated it from a theological viewpoint; they both apparently came to the same conclusion: There's a lot of sensationalism and very little substance regarding the "problem" of satanism!

Dr. Flowers also presented good analyses on at least two other subjects of interest to NTS members: "creation science" and faith healing. Both are areas he's followed closely because of their potential legal impact on the separation of church and state. Regarding creationism, Flowers made it clear he has not seen any convincing evidence that "creation science" is based on objective scientific research. To the contrary, the existing data shows it's an attempt to develop "evidence" that "proves" the preconcluded philosophy of creationism that is central to many fundamentalist beliefs. Again, we have Flowers' research and conclusions validating the findings of CSICOP and NTS.

He cited the legal opinion rendered in *McLean vs. Arkansas Board of Education* as one of the best summaries he has read on the subject. In writing the court's opinion on the case, Judge Overton makes it clear that "creation science" was inspired by the Book of Genesis, that the purpose is the advancement of fundamentalist beliefs and that it does not include objective scientific methodology. As part of the opinion, he notes "...creation of the world 'out of nothing' is the ultimate religious statement because God is the only actor."

Also, the list of plaintiffs that prevented the state from implementing the creationists' "balanced treatment" statute is quite enlightening. A majority appear to be clergy from various non-fundamentalist denominations. As Dr. Flowers' presentation seemed to point out, there

apparently are many in the religious community with a good comprehension of the problems caused by the creationists' attempts to spread their doctrine via legislation. It's refreshing to see individuals that are content to let their personal beliefs stand on the respective merits of those beliefs. It's even more refreshing to see them take a stance, based on principle, opposing the fundamentalists' effort to use the ballot box for spreading their religious teachings.

Regarding faith healers, Dr. Flowers pointed out that there are at least two major underlying rationales: One is primarily a fundamentalist doctrine -- where biblical passages are cited as being in conflict with contemporary medical practices. Others are based on more recent "revelations" -- such as the Christian Scientist movement, where a book containing the "Key to the Scriptures" is necessary to understand the Bible. According to Christian Scientist doctrine, reality is a perception. Thus, all illness or injury is merely perceived, as a deception within the mortal mind, and conventional medical treatment is rejected.

Again, there's a fair amount of controversy within religious circles about these "fringe" beliefs. A primary legal issue -- concerning the separation of church and state -- is over medical treatment for those who are incapacitated, and unable to make decisions about their treatment. And, again, it's nice to see individuals from the religious, medical and legal communities working together to establish standards that keep pace with the scientific advances in medicine.

Having lived outside the "bible belt" most of my life, I've been perplexed over a condition I hadn't encountered elsewhere: The fundamentalists seem to have created an illusion of "science vs. religion" in many areas, as though they are philosophical opposites. I've wondered why the promotion of creationism, etc. isn't more openly contested by the many moderate religious groups that see no problem with using accepted scientific methodology. (Some even admit their faith is based on what they regard as the highest degree of probability.) Thus, I was pleased with Dr. Flowers' presentation. As noted in the "McLean" case, not all those in the religious community view scientists as the enemy!

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Origins of Self-Deception

by John Blanton

(This is a recapitulation of a talk given at the NTS meeting in February of this year.)

The roots of pathological science often lie in the self-induced deception that comes about when the goal of obtaining a desired result weighs against the desire to know the truth. Two notable American scientists have expounded on this subject, and their findings are worth relating here.

Irving Langmuir was for many a years a researcher for General Electric Corp., and in 1932 he earned the Nobel Prize in Chemistry for his work in adsorption of monolayers of molecules on surfaces. During his career he also studied a phenomenon he called "pathological science," but he never published the results of these informal studies. However in 1953 he gave a talk on the subject at General Electric's Knolls Atomic Power laboratory, and the text of this talk has since been published by Robert N. Hall in the October 1989 issue of *Physics Today*.¹

Dr. Langmuir, in his speech, related how Professor Bergen Davis from Columbia University had come to GE, Schenectady, in 1930 to give a talk on some work he and his associate Arthur Barnes were conducting.

The Barnes and Davis experiment consisted of sending alpha particles (helium nuclei) down an evacuated tube, where they were combined with a beam of electrons going in the same direction. What the experiment purported to show was that when the electrons and the alpha particles were made to travel at the same velocity, they apparently combined to form neutral helium atoms, or at least helium ions with one excess positive charge. The fact that this was going on, Barnes and Davis contended, was evidenced by the failure of the neutralized particles to be deflected by a magnetic field onto a zinc sulfide screen at the end of the tube. The determination that this was occurring was made by visually counting scintillations on the screen in a darkened room.

Dr. Langmuir and associate, C. W. Hewlett, went to Columbia to observe the experiment, and they went with some prior concerns. Certain aspects of the results contradicted known physics (what happened to the excess energy when the electrons combined with the alpha particles?), and the experiments were obtaining incredible precision in measuring the effects of the phenomenon. The root of the problem turned out to be the visual detection of the scintillations in the darkened room. Langmuir and his associate, C. W. Hewlett, could not successfully obtain the desired number of scintillation counts when they viewed the zinc sulfide screen. It was notable to the GE researchers that Dr. Barnes could always immediately explain away any discrepancies by citing some proposed cause.

Finally, Dr. Langmuir tricked Barnes by having the electron field voltage set to one value while leading Barnes to believe it was set to another value. Arthur Barnes continued to measure, with great precision, the response he expected to see. In the darkened room, staring at the dim flashes on the screen, his mind was producing results to confirm his conclusions. It was a classic case of self deception. Barnes and Davis subsequently published their results, over the objections of Langmuir, but they later retracted their paper when they were unable to

repeat the results.

Dr. Langmuir also mentioned the famous case of Rene`-Prosper Blondlot and the N rays. Blondlot was a respected member of the French Academy of Sciences, and he thought he had discovered a new form of invisible radiation. Professor Blondlot had determined that N rays could be detected by the effect that was exhibited when they struck a viewing screen that was faintly illuminated by some dim light source. The supposed effect was that when the N rays were incident on the screen in a darkened room, they enabled a viewer to see the screen, whereas the screen would be too dimly lit to be seen otherwise.

Blondlot discovered many interesting properties of N rays, one of them being that they passed through solid aluminum, and another being that they had refraction properties, just like visible light. They could be dispersed into their component parts by a solid aluminum prism. American physicist Robert W. Wood went to France to observe this curious discovery, and, as with Langmuir and Hewlett in the case of the Barnes/Davis experiment, he had trouble seeing the same thing that Blondlot was seeing. Professor Blondlot was measuring the refraction pattern of the N rays with amazing accuracy from a beam coming from a 2mm slit. Then, in the darkened lab, Woods secretly removed the essential aluminum prism from the N ray device, and Blondlot continued to make the measurements he thought he ought to be seeing.

Dr. Langmuir also had occasion to visit Joseph Rhine at Duke University (around 1934) where Rhine was conducting well publicized studies in extrasensory perception. Dr. Langmuir explained to Rhine that he thought these extrasensory perception experiments had all of the trappings of pathological science. Apparently Rhine used 25 cards with five different designs (five cards of each design), and the subject of an experiment was supposed to guess which card another subject was holding up or was looking at or was about to turn over. In theory this experiment should give an average of five correct guesses for every 25 cards, but Rhine was reporting averages of seven out of 25, statistically very significant, since Rhine had performed thousands of experiments.

Rhine claimed to have published all of his data, but on further questioning from Dr. Langmuir he mentioned that he had other results from experiments that had been sabotaged (apparently by experimenters deliberately guessing the *wrong* card). "Well," Langmuir remarked, "that's interesting--very interesting, because you said that you'd published a summary of *all* the data that you had. And it comes out to be 7. It is now within your power to take a larger percentage, including those cards that are sealed up in those envelopes, which could bring the whole thing back down to 5. Would you do that?" Rhine declined and indicated that he had hundreds of thousands of cards including a whole filing cabinet full of cards sealed up in envelopes that would bring the average down to five. He could not bring himself to accept the data that would invalidate his thesis.

Another scientist who has commented on the subject of pathological science is the late Richard Feynman. Although the case of Joseph Rhine indicates a rather pernicious disregard for scientific rigor, the case of Millikan's oil drop experiment illustrates the effect that peer pressure can have on interpreting data. In his book *Surely You're Joking, Mr. Feynman*², Richard Feynman related problems with data from early attempts to repeat Robert Millikan's famous oil drop experiment in determining the charge of the electron.

Millikan measured the charge of a single electron by observing the motion of tiny oil drops falling through air inside a chamber. An electric field was applied vertically to the chamber, and oil drops that had picked up an electric charge experienced an extra force due to that charge in the electric field, and their rates of fall were affected by the extra force. Millikan measured the smallest change in the rate of fall that could be induced, and he assumed that this change was due to the smallest electric charge that could be applied to a single drop, the charge of one electron.

The problem was that the success of the experiment depended on knowing how fast oil drops of a given size and weight would fall freely through the air, and this depended on knowing the viscosity of the air. Millikan used a value that was not appropriate for such small particles, and he got a value for the electron charge that is too small. The problem was not caught immediately. Subsequent experimenters, obtaining a result higher than the famous Millikan's, assumed some error in their data, and they published answers only slightly larger than his. Still later, experimenters got bolder and bolder, and gradually the value for the electron charge inched up to near the presently accepted value.

The ability of the experimenters to believe some error in their data was likely due to the physical rigors of conducting the experiment. In the text *Modern Physics*³ by Serway, Moses and Moyer, the authors describe the ordeal: "If these droplets are illuminated from the side, they appear as brilliant stars against a dark background, and the rate of fall of individual drops may be determined... Perhaps the reason for the failure of *Millikan's Stars* as a poetic and romantic image has something to do with the generations of physics students who have experienced hallucinations, near blindness, migraine attacks, etc., while repeating his experiment!"

Finally, in an example from months past, there is the case of cold fusion. Highly reputable scientists, working only slightly out of their field and against deadlines, with grant money at stake, have obtained results that validate their hypothesis but which cannot be confirmed by others. Three of the previously cited examples involve reliance on marginal sensory perception to make critical physical measurements, and they failed when the experimenter's brain overrode his perceptions. This should not be the case with cold fusion. What, we may ask, excuses these modern day experimenters?

References

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3. Serway, Raymond A., Moses, Clement J., Moyer, Curt A., *Modern Physics*, Saunders College Publishing, Philadelphia

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OTHERS SPEAK

by **John Blanton**

(This being a collection of notable quotes from the newsletters of other skeptics groups and from other selected literature. Members should know that the source newsletters are available for further reading when I (or someone else) do not have the referenced issue checked out.)

In going over past offerings from our collection of newsletters, I found myself drawn to many articles from *LASER* (Los Angeles Skeptics Evaluative Report). This group seems to be very active, and their newsletter has several well-qualified writers contributing, Al Seckel being one of the most notable. Generally I try to scan all of the literature we currently have, and I hit the book stores to acquire additional works of broad interest. It is my intent to get up some interest among the members in reading these newsletters and other works, although this seems to me to be like carrying coals to Newcastle. This group seems to do more reading than the vast majority of the American population.

- From "Gobbledygook in the New Age" by Al Seckel appearing in the May-August 1988 issue of *LASER*:

I believe that there are three reasons why there is so much gobbledygook in the "New Age." First, the technique of using technical jargon in a popular format, whether the words are contained in the dictionary or freshly coined, is used for the express purpose of impressing or intimidating people. Second, for many people obscurity equals profundity. For example, from the same "New Age" column: "Masters of Limitation and Masters of Divination use the same creative force to manifest their realities, however, one moves in a downward spiral and the later moves in an upward spiral, each increasing the resonant vibration inherent in them." What can this possibly mean? Third, a vast amount of "New Age" literature uses scientific jargon, i.e., electromagnetic, frequencies, energy fields, multi- or extra-dimensional spacetime, to give the impression of scientific accuracy and precision.

- From "Proper Criticism" by Dr. Ray Hyman writing for the same issue of *LASER*:

What, then, can skeptics do to upgrade the quality of their criticism? What follows are just a few suggestions... 2. Clarify your objectives. Before you try to cope with a paranormal claim, ask yourself what you are trying to accomplish. Are you trying to release pent-up resentment? Are you trying to belittle your opponent? Are you trying to gain publicity for your viewpoint? Do you want to demonstrate that the claim lacks reasonable justification? Do you hope to educate the public about what constitutes adequate evidence? Often our objectives, upon examination, turn out to be mixed. And, especially when we act impulsively, some of our objectives conflict with one another. The difference between short-term and long-term objectives can be especially important. Most skeptics, I believe, would agree that our long-term goal is to educate the public so that it can more effectively cope with various claims. Sometimes this long-range goal is sacrificed because of the desire to expose or debunk a current claim. Part of clarifying our objectives is to decide who our audience is. Hard-nosed, strident attacks on paranormal claims rarely change opinions, but they do stroke the egos of those who are already skeptics. Arguments that may persuade the readers of the *National Enquirer* may offend academics and important opinion-makers. Try to make it clear that you are attacking the claim and not the claimant...

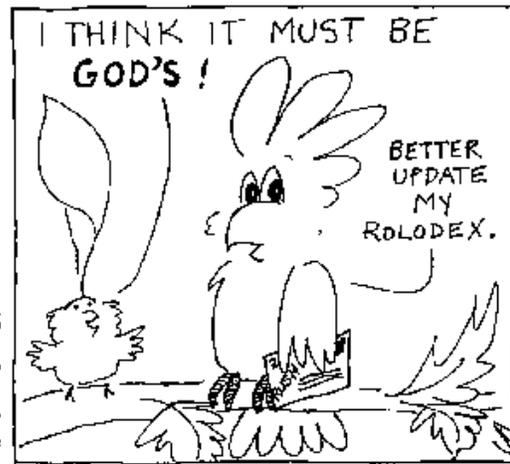
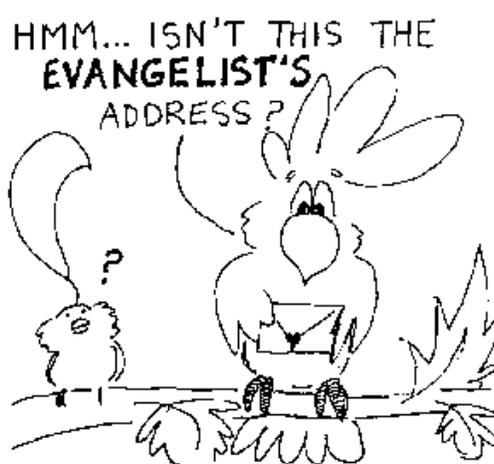
- From "Ramparts," a regular news feature of *BASIS*, the Bay Area Skeptics Information Sheet, appearing in the October, 1989 issue:

Organic foods are not enough. The very word "organic" has lost some of its punch over time. It has a nice visceral appeal, but it isn't technical-sounding enough. The public's quest for superlatives is insatiable, which is reason enough for wackos to concoct whatever formula to tap into popular gullibility. The latest is "biodynamic farming," a term which seems to have captured the hearts of some who want nature [and] something that sounds high-tech. In marketing, we learn that what you call it is more important than what it is.

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Up a tree: a skeptical cartoon

By **Laura Ainsworth**



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