Phactum

The Newsletter of the Philadelphia Association for Critical Thinking

September 2007

editor: Ray Haupt **www.phact.org**

EXECUTION OF MRS. ANN HIBBINS.

PhACT Meeting. September 15, 2007

Mysterious Delusions: Witchcraft in Salem Village

The witchcraft trials in Salem in 1692-1693 were the largest episode of witch hunting in what is now the United States and the last large witchcraft outbreak in Western Civilization. Over a hundred persons were accused of witchcraft and imprisoned. Nineteen witches were convicted and executed. A variety of explanations for this event have been advanced. In the Seventeenth Century most citizens of Massachusetts believed that witches existed and that the accused were part of a conspiracy to overthrow Christianity and replace it with the rule of Satan. During the Enlightenment many educated persons adopted the view that the witchcraft accusers were frauds and that their fits before the Massachusetts judges were mere imposture. In the last fifty years a new set of explanations has emerged. Some attempts at explanation have focused on food-born toxins (ergot fungus) or pathogens (encephalitis). Other explanations have emphasized mass hysteria, bitter quarrels

(Continued on page 4)

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Phactum is, in theory, printed 6 times a year and is the main propaganda organ for the Philadelphia Association for Critical Thinking.

If you are not a subscriber we invite you to become one by sending $15 for a one year membership to PhACT, $10 for students.

Send letters of rebuttal, ideas, short essays, poetry, opinion pieces, complaints, and lavish praise to Ray Haupt, Phactum editor, at phactpublicity@aol.com.

PHACT CALENDAR

Saturday, September 15, 2007: - The **Physics Department of Community College of Philadelphia** will host a meeting of **PhACT -** at 2:00 PM, Community College of Philadelphia, 17th and Spring Garden Streets, West Building Room W2-48. **Meetings are free and open to the public.**
Professor Walter F. Rowe, a forensic scientist at George Washington University, will discuss "**Mysterious Delusions: Witchcraft in Salem Village**".

Friday, September 14, 2007. Lecture: Dr. Stanley A. Mertzman, Professor at Franklin and Marshall University will discuss **The Geology of Mars.** The Delaware Valley Amateur Astronomers. Monthly meetings start at 7:00 PM and are usually held the second Friday of each month in the Greater Plymouth Community Center, 2910 Jolly Rd, Plymouth Meeting, PA. Http://dvaa.org. Free and open to the public. See more on page 15.

Tuesday, September 18, 2007 (12:00 p.m.) at the FLOP (Free Library of Philadelphia) 19th & Benjamin Franklin Parkway. **Steven Pinker - *The Stuff of Thought: Language as a Window into Human Nature.*** Stephen Pinker is the Johnstone Family Professor of Psychology at Harvard University, where he conducts research on language and cognition. One of today's most popular science writers and a *New York Times* bestselling author, Pinker's previous books include *The Language Instinct* and the Pulitzer Prize finalist *The Blank Slate*. In *The Stuff of Thought,* Pinker explores the complex relationship between language and human nature.

Tuesday, October 2, 2007. Celebrate "Freethought Month" with speaker **James Morrow**, author of *The Last Witchfinder* (and many other books). Freethought Society of Greater Philadelphia (FSGP) at Ludington Library, 5 South Bryn Mawr Ave., Bryn Mawr, PA 19010 at 7:00 PM. Website: FSGP.org. Free and open to the public.

Friday, October 19, 2007 (12:00 p.m.) at the FLOP (Free Library of Philadelphia) 19th & Benjamin Franklin Parkway. **Gary Kasparov - *How Life Imitates Chess: Making the Right Moves-from the Board to the Boardroom.*** Gary Kasparov became the youngest-ever World Chess Champion in 1985 at the age of 22, a title he held until 2000. He retired from professional chess in 2005 to found the United Civil Front in Russia and has dedicated himself to establishing free and fair elections in his homeland. In How Life Imitates Chess,Kasparov offers a primer on successful decision-making based on lessons from the chessboard. Free.

Wednesday, October 24, 2007 (7:00 p.m.) at the FLOP (Free Library of Philadelphia) 19th & Benjamin Franklin Parkway. **James Morrow - *The Last Witchfinder*** - James Morrow spent nine years polishing this cerebral and humorous tale of rationality versus superstitious bigotry. Set in late-17th-century London and colonial New England, the novel follows Jennet Stearne, daughter of witchfinder Gen. Walter Stearne, as she witnesses the pursuit of "Satanists" and her beloved aunt--a philosopher and scientist--put on trial and burned at the stake for her progressive ideas. Morrow's books include Towing Jehovah and The Eternal Footman. Free.

Tuesday, November 6, 2007: Speaker **Richard Leventhal**, Curator of the American Section of the University of Pennsylvania Museum and Professor of Anthropology at the University of Pennsylvania. Freethought Society of Greater Philadelphia (FSGP) at Ludington Library, 5 South Bryn Mawr Ave.,Bryn Mawr, PA 19010 at 7:00 PM. Website: FSGP.org. Free and open to the public.

At the **Franklin Institute** until September 30, 2007. 222 N. 20th St., Philadelphia, PA, 19103. **Tutankhamun and the Golden Age of the Pharaohs.** From 1976-1979 the Treasures of Tutankhamun exhibit toured the United States, attracting more than eight million visitors and inventing the phenomenon of the blockbuster museum show. In a highly publicized return visit, a larger selection of items from the famed pharaoh's fabulous tomb goes on a 27-month U.S. tour, introducing a whole new generation to the golden treasures of Egypt's Valley of the Kings. Tickets are timed and dated and must be reserved in

advance. Call 1-877-888-8587.

University of Pennsylvania Museum of Archaeology and Anthropology presents **Amarna, Ancient Egypt's Place in the Sun**, a new exhibition that offers a rare look at the meteoric rise and fall of this unique royal city during one of Egypt's most intriguing times. The exhibition, the centerpiece of the Museum's event-filled "Year of Egypt", runs through October 2007. Admission is free with museum admission: $8 adults, $5 seniors and students. Free Sunday afternoons until Memorial Day. For information: www.museum.upenn.edu.

Freethought Society of Greater Philadelphia (FSGP) and the **Humanist Association of Greater Philadelphia (HAGP)** co-sponsor a monthly book discussion club. The book club meets on the third Saturday of each month at 7:00 PM at Willow Grove Barnes & Noble, 102 Park Avenue, Willow Grove, Pennsylvania 19090. If you have any questions, please contact the book club moderator, Ian Thomas. Email: ian.thomas101@gmail.com Phone: (610) 368-5915 Cell: (610) 565-4530.

Philadelphia Brights Meetup Group. Meetings are held at the Barnes & Noble Cafe at 1805 Walnut Street, at 7 pm on the second Monday of the month.

Delaware Valley Mensa. Monthly Meetings are always open to family, friends, interested others and the public. See the "Events Calendar" on the Mensa website for more information. After the meeting we will adjourn to a local restaurant for some inexpensive food and conversation. The website is http://dvm.us.mensa.org/. **See page 8** for a Mensa event on **September 14, 2007.**

The PhACT Calendar is open to members, and non-members too, who wish to announce meetings and events of other groups of which they are interested or affiliated. These events should be of some general interest to the Skeptical or Scientific community and should be within a reasonable radius of Philadelphia. Send submissions to the editor at **phact-publicity@aol.com**. Keep the announcements brief. Space is limited and insertions will be made on a first come-first served basis after the needs of PhACT are accomplished.

The Wagner Free Institute of Science

offers an assortment of science lectures presented at the introductory college level by professors from various universities around Philadelphia. These courses are free and vary from a single night to an eight week course. They do appreciate donations or memberships. See their website at **http://www.wagnerfreeinstitute.org/**.

Fall 2007 Wagner Institute Courses

Invertebrate Diversity with an Emphasis on Mollusks, Professor Daniel Graf. **Tuesday, September 25, 2007**, beginning at 6:30 PM. 7 Tuesdays. The Academy of Natural Sciences, 19th Street and the Benjamin Franklin Parkway. This course will examine the most interesting, most important group of animals to ever inhabit the earth. ***This course requires preregistration and is limited to 15 students. To preregister, call 215-763-6529, ext. 23, beginning Tuesday, September 4.***

Technological Breakthroughs of the 20th Century, Professor Paul Angiolillo. **Wednesday, September 26, 2007**, beginning at 6:30 PM. 8 Wednesdays. Wynnefield Branch of the Free Library, 5325 Overbrook Avenue. This course will explore technological breakthroughs that occurred during the 20th century that many of us take for granted, placing particular emphasis on the personalities and politics that shaped the discoveries. ***No preregistration required.***

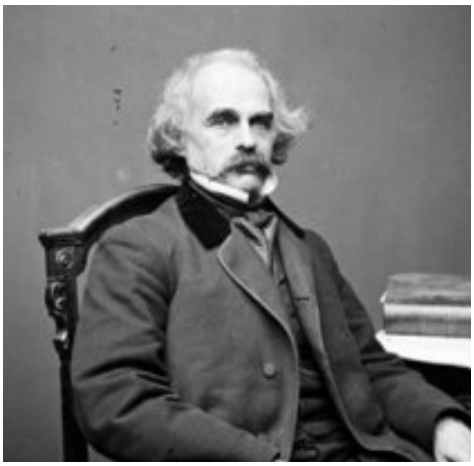
An Introduction to Insects and Related Arthropods, Professors Robert T. Allen and Jon Gelhaus**. Thursday, September 27, 2007**, beginning at 6:30 PM. 8 Thursdays. The Academy of Natural Sciences, 19th Street and the Benjamin Franklin Parkway. This class will explore the diversity of insects and related arthropods, examining the features of insects which have made them the most successful group of organisms on earth. ***This course requires preregistration and is limited to 20 students. To preregister, call 215-763-6529, ext. 23., beginning Tuesday, September 4.***

Human Evolution: The Legacy of the Intelligent Biped, Professor Janet Monge. **Monday, October 15, 2007**, beginning at 6:30 PM. 6 Mondays. University of Pennsylvania Museum of Archaeology and Anthropology, 33rd and Spruce Streets. This class will explore human evolution and what that means for us today. ***No preregistration required.***

(Continued from page 1)

within the Salem Village community, the psychological stresses of adolescence and ageing or the psychological stresses experienced during a period of protracted warfare. This presentation will critique the modern explanations in the light of the historical record.

Prof. Walter F. Rowe is professor of forensic sciences at The George Washington University. He holds a PhD in chemistry from Harvard University. Prof. Rowe is a Fellow of the American Academy of Forensic Sciences and a former member of the editorial board of the *Journal of Forensic Sciences*. Prof. Rowe is a longtime student of the Salem witchcraft outbreak and has spoken on this topic before National Capital Area Skeptics (NCAS), as well as the annual meeting of the American Academy of Forensic Sciences. He has had a long-term interest in the application of the methods of forensic science to the study of history. Prof. Rowe has applied forensic methods of image analysis to Civil War photography and he is currently applying the methods of forensic firearms examination to archaeological artifacts excavated at the site of the 1866 Fetterman Massacre.



Nathaniel Hawthorne was born in Salem, Massachusetts, where his ancestor John Hathorne oversaw the Salem Witch Trials - the "w" added to Hawthorne's name was to disassociate himself from Hathorne.

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Letters

Editor,

An interesting article is in the Aug. 11 issue of the Philadelphia Inquirer - Page B3 - www.philly.com - "A flowering of doubt in America" by Kim Yo of the San Jose Mercury News.

".....6 percent of the seniors define themselves as secular -- the percentage steadily increases among younger age groups, hitting 19 percent among the 18-22 set..."

Robert E. Kay, MD (Ret)
robertekaymd@mycidco.com

Editor,

In his letter to the editor in the last issue of Phactum, Joel Kauffman says of the Quackwatch website, "While some of the information on that site is OK, much is not." He offers no evidence to support that statement. If he expects us to believe him, he should equally expect us to believe my statement that "While some of what Joel Kauffman writes is OK, much is not."

Wikipedia has a disputed article about Quackwatch and Kauffman is one of only two sources cited that are critical of the website, while many more sources are cited in favor of its reliability as a source of information about questionable medical practices. The Skeptic's Dictionary also gives an example of Kauffman's biased approach to evaluating the medical literature. In my opinion, Quackwatch is a far more reliable source than Kauffman's writings; but unlike Kauffman, I don't ask anyone to accept my opinion without verification. I encourage readers to check the following two webpages as well as Quackwatch itself and make up their own minds.
http://en.wikipedia.org/wiki/Quackwatch
http://skepdic.com/refuge/bunk28.html

Harriet Hall, MD
The SkepDoc

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"The church says the earth is flat, but I know that it is round, for I have seen the shadow on the moon, and I have more faith in a shadow than in the church." -Ferdinand Magellan (1480-1521)

Various Ruminations

Collected/written by Ray Haupt, editor
(with help from others)

Witch Hunt - The Gang of 88

The Duke Lacrosse Rape Case ended a few months ago with complete exonoration of the three accused students. The justice syustem did finally get it right and perhaps the malicious prosecutor will get some jail time. Prosecutor Nifong was not the only miscreat in this affair however. The Gang of 88 is a group of university faculty who very quickly saw fit to condemn the accused students and continued to do so even after evidence indicating that the defendants might well be innocent of the charges against them.

A blogger named K.C. Johnson did some research on that matter and a small portion of his findings are quoted below.

"The group's collective profile is revealing. To begin with, only 69 of the 88 are tenured or tenure-track faculty: seven were visitors (it's understandable why they would care little about the fate of Duke students); seven teach in the University Writing Program; and one each was a program registrar, graduate student, program administrator, clinical nurse, and "affiliate" to an unspecified Duke program. Statement sponsors haven't explained how they determined who was eligible to sign the document.

The 69 permanent faculty signatories included only two professors in math, just one in the hard sciences, and zero in law. (It would have been difficult indeed for a law professor to have signed a statement deeming irrelevant "the results of the police investigation.") Of the permanent signatories, 58—an astonishing 84.1 percent—describe their research interests as related to race, class, or gender (or all three), in some cases to an extent bordering on caricature."

The full text of Mr. Johnson's article can be found on the internet at :http://johnsville.blogspot.com/2006/11/duke-case-listening-statement.html

I find those results to have significance in that it seems to imply de facto segregation between faculty in mathematics, hard science, and law vs. social sciences. Why should such a profound dissimilarity in temperament and professionalism exist in a university or any other institution that proclaims itself enlightened?

I am pleased that the law professors at Duke did not participate in this Witch Hunt, but where, oh where, was the North Carolina Chapter of the ACLU in this sordid affair of prosecutorial denial of Civil Liberty?

As for the Gang of 88 there has been little if any apology for their impulsive actions which might be somewhat understandable at the very earliest stages of this saga. But as the story unfolded some major back-tracking and soul-searching would have been appropriate. As things stand today this group of faculty at Duke University has made no convincing motions toward consilience. Shame on them.

"The moment a person forms a theory, his imagination sees in every object only the traits which favor that theory."

-Thomas Jefferson (1743 - 1826)

Still Another Witch Hunt - Female "Sorcerers" Tortured and Murdered

David Riddell, editor of the New Zealand Skeptic, reported in the Fall 2007 (Spring in the Northern Hemisphere) edition that four Papua New Guinea women, believed by villagers to have caused a fatal road crash, were tortured with hot metal rods to confess, then murdered and buried standing up in a pit.

Black magic is widespread in that South Pacific nation. Women suspected of being witches are often hung or burnt to death.

The NZ Skeptics website is: http://www.skeptics.org.nz/

Global Warming - The Tangerine Moment

It seems that Elizabeth Edwards, wife of Presidential Candidate John Edwards, has bizarrely declared that in the fight against Global Warming she will sacrifice by no longer eating tangerines. I am not clever enough to make this up. Google "Elizabeth Edwards" and "tangerines".

By the way

Has anyone seen or heard of new developments at Blacklight Power, Inc. lately? If so please fill us in. A Google search of "blacklight power" did yield various results but none newer than May 2006. Does this company still exist? The stock ticker symbol for

Blackkight Power, Inc. is (BLP) but is not currently listed as a US company. What is going on?

Ear Candling

I happened to notice an article about ear candling in the August 23, 2007 edition of the Chestnut Hill Local, one of my community weekly newspapers. Ear candling is an ancient medical practice that reputedly clears excessive earwax buildup thus eliminating discomfort, headaches, and tinnitus. Furthermore ear candling draws out fungus and other debris from the outer and inner ear canals and the eustachian tube through osmosis.

This remedy is executed by having a hollow muslin and beeswax candle stuck in ones ear and burned under the watchful supervision of the candling practitioner. A superficial view of this practice might lead one to believe that ear candling is a rather odd cure. An in-depth analysis will lead to the same conclusion.

Ear candling was practiced by the ancient Greeks and Egyptians, the Mayans, and in Tibet. It had largely been forgotten but appears to be enjoying a renaissance in the booming alternative medicine community and information about it may be found on the internet at many websites including this one that explains the benefits and even has testimonials: http://www.earcandling.com/.

Still more information may be found at this website: http://www.quackwatch.com/01QuackeryRelatedTopics/candling.html where Dr. Lisa Dwyer, an emergency room physician in New York City explains why ear candling is not such a good idea. She goes on to explain that in a survey of 144 ear, nose, and throat specialists 14 had treated patients who had been harmed by ear candling.

Despite some drawbacks as described by Dr. Dwyer is it possible that ear candling really does draw out excess earwax if one manages to avoid burnt ear drums? If the technique of osmosis by candle works to cure excessive earwax buildup is it not logical that this treatment might prove beneficial to cure constipation?

Intellectual Inadequacy

Did you ever have a feeling of intellectual inferiority, that depressing feeling when there is something very common in your life that you should understand but do not? The Federal Income Tax might be one such item. Don't feel too bad, you are not alone, you have good company, and I would wager that he is smarter than even you.

"The hardest thing in the world to understand is the income tax." Albert Einstein

Astronomers find hole in universe

Science Daily reported on August 23, 2007 that University of Minnesota astronomers have found an enormous hole in the Universe, nearly a billion light-years across, empty of both normal matter such as stars, galaxies and gas, as well as the mysterious, unseen "dark matter." While earlier studies have shown holes, or voids, in the large-scale structure of the Universe, this new discovery dwarfs them all.

There is a lot more to this story which can be found on the internet at: http://www.sciencedaily.com/releases/2007/08/070823164846.htm.

"It's black, and it looks like a hole. I'd say it's a black hole."

If you remain curious about this issue you might do well to attend a meeting of Delaware Valley Amateur Astronomers (DVAA). Surely some friendly astronomy enthusiast will bee up to date on the lack of matter and will be happy to share his knowledge.

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Soundbites

Compiled by Becky Strickland

♦ *"Linear chromosomes* - the ends of these erode as cells divide, something that cannot happen with circular chromosomes.
Windpipe next to the gullet - means choking is not uncommon.
Ulnar nerve - runs behind the elbow where it is unprotected, instead of in front of it.
The Y chromosome - gathers mutations because it can't swap DNA with the X chromosome.
Vulnerable brain cells - a few minutes of oxygen deprivation causes permanent brain damage.
Vulnerable hearts - A little heart damage triggers a disastrous cascade of events that causes further damage.
Feet - after coming down from the trees, we ended up walking on the "wrists" of our lower limbs, leading to all sorts of structural weaknesses.
Odontoid process - this extension of the last neck vertebra can easily fracture and damage the brainstem."
Claire Ainsworth & Michael Le Page discussing a few of the many examples of 'unintelligent design' evident in humans. New Scientist August 11, 2007.

♦ "At the end of the [first] event I discover something I am going to keep on discovering: half the people attending had thought they were the only atheists in town. .....I get encouraging letters from atheists in foxholes in Iraq and Afghanistan as well as from people who feel that they are at last emerging from some kind of closet. One day a decent candidate for high office will say that he is not a person of faith, and the sky will not fall." Christopher Hitchens, author of *God is Not Great*, interviewed after his US book tour, Vanity Fair, September 2007.

♦ "*What on earth does Dawkins think his latest campaign will achieve? It seems to be as ill-advised as attempting to label atheists' as 'brights' - with its implication that those who are not atheists are dumb.... Before embarking on this new effort to appeal to people's emotions, he might have been well advised to consult a public relations firm."* Lawrence Krauss, director of the Center for Education and Research in cosmology and Astrophysics at Case Western Reserve University, on Dawkins current "Out" campaign, urging atheists to come out and organize atheist events and speak out against religions nonsense. To motivate atheists, Dawkins stated that atheists are more numerous than religious Jews but lack the political power because atheists never "got their act together in the way the Jewish lobby has." Dawkins is also selling T-shirts with a large scarlet 'A' for atheists to wear during these events. Krauss makes it clear he agrees with Dawkins ideas but disagrees with his methods. This story, along with Krauss's ideas for mobilizing atheists, was reported in 'New Scientist', August 25, 2007.

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But Anything's Possible

By Madeleine van Hecke, Ph.D.

What ideas do you have for how to respond to the objection "but anything's possible" when you are trying to argue that the evidence offered doesn't justify the conclusion? In particular, what can you say when, for example, you argue that meditation did not help reduce crime in Washington, DC - that the leader of the meditation group himself had predicted a significant decrease that summer and instead DC had the highest crime rate ever. Then the person you are telling this to says: "But think how high the crime rate might have been without the meditation groups!" Now I know that one way to respond is to talk about post-hoc predictions in statistics and the importance of predicting ahead of time what will happen, but this sort of explanation often makes little sense to the person who is untrained in probability theory and research design. So I am looking for another way to respond to objections like these.

Here's an example of what I thought was a great way to respond to students who would say, after hearing about an experiment: "But how do you know that X (the

teaching method, the ringing bell - whatever the experimental variable being manipulated was) how do you know that that was what caused the differences between the 2 groups? There were so many other ways in which these groups differed." Of course I would talk then about the benefits of randomization, etc. but I found that a more effective way to respond was to use an analogy. The analogy was to imagine that I had 2 glasses of water, and I wanted to see if adding lemon to one of them could make a big enough difference that it could be detected when tasting the 2 glasses. Now of course it would be easy to tell which glass had the lemon if there were no other differences between the two. But now, I'd say, imagine that I add a little salt to this glass and much more to the other; some tabasco to this one, none to the other; sugar .. etc. Now I would say if you can still tell which glass has the lemon, that shows what a strong infuence that factor has. (I want to thank experimental psychologist Ray Littlejohn whom I think gave me this example years ago.)

So I'm looking for something like this analogy as a way to respond to the objection about "but think what it would have been if..." Any ideas? Maybe this could be topic for one of your discussions. I can be contacted by e-mail at info@openarmsseminars.com.

Madeleine Van Hecke, PhD *is a licensed clinical psychologist who has taught courses in critical thinking and creative thinking at North Central College in Naperville, Illinois. She is the author of the recently published* ***Blind Spots: Why Smart People Do Dumb Things (Prometheus Books, 2007),*** *and a speaker for Open Arms Seminars. You can find a free article on what to do when other people's blind spots drive you crazy on http://www.overcomeblindspots.com/.*

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[VT] PRT LTC YTOOU EUWW ... … … ?

The **Teenager and Bigfoot:** A Discussion With a Youngster About the Scientific Method

By David Cragin, Ph.D.

PhACT's Council recently faced an interesting challenge: Our editor, Ray Haupt, was asked if we could recommend a "cryptozoology" expert who would be interviewed by a 13-year old boy doing a project on Bigfoot for school. Cryptozoology, the study of unknown or hidden creatures, isn't a scientific field and hence we couldn't offer a scientific cryptozoology expert. Yet, if we had ignored the request, the boy might have talked with a "cryptozoology expert" who could have fed him hokum. My undergraduate degree was in Zoology and I teach a graduate course on critical thinking, so I thought I had sufficient background to discuss Bigfoot. Since many PhACT members may face the challenge of taking with others about their beliefs and this one had favorable outcome, the approach used might be of interest.

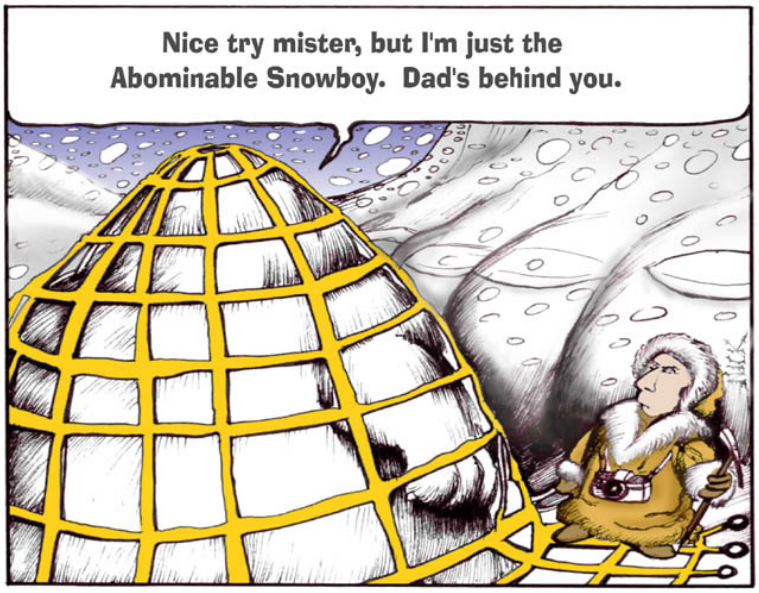
Background

The boy's parents had two goals: they didn't want their son's avid interest in science extinguished, but they also wanted him to critically evaluate the information available on Bigfoot. He was a strong believer in Bigfoot and his parents had been unsuccessful in getting him to think otherwise.

Techniques and Approaches for Facilitating Discussions

Risk communicators, such as Peter Sandman (www.psandman.com), teach that to influence the perspective of others, you first have to understand their situation and their perspective. Scientists and engineers often think that the solution to the argument is to provide more data. Sandman offers a superb example that illustrates how fact-based arguments can be ineffective in changing opinions:

> Let's say you and your spouse want to go out for dinner. She wants Italian, you want Chinese. The discussion gets heated. You're not going to "win" the argument by showing comparative nutritional data – even if the data were peer reviewed by the National Academy of Sciences.



For science-related issues, rather than trying to argue "your facts" versus "their facts," it is much more effective to try to examine the situation from the other's perspective and to help them evaluate the evidence. Although "your facts" may have a stronger scientific foundation than "their facts," they don't see it this way (hence, their belief). In the case of the boy, I thought it was also a good opportunity to help him see how scientists examine an issue.

The Questions

In order to have time to prepare my thoughts, I asked to receive the questions beforehand. Here's what he sent:

1. What is your view on cryptozoology? Please explain.
2. What proof do you have that the many pictures and videos of cryptids are fake?
3. How can you explain the legends and myths of native people that are based around cryptids?
4. Is it a possibility that a tall, apelike creature could have avoided human civilization during the thousands of years? Please explain.
5. In cryptozoology scripture, it talks about extinct animals that may not be extinct after all, including the marsupial wolf of Australia. What is your view on this topic?
6. Why do you feel this way about cryptozoology?
7. Cryptozoology is a very rare form of zoology. Do you personally know of any cryptozoologists?
8. Do you think that cryptozoology is just a bunch of

baloney? Explain.

9. When you were younger, did you believe in the cryptids?
10. Many religious ceremonies contradict each other in cryptid legends, but some cultures that never have come in contact have the exact, same explanation for sightings. How could this happen if cryptids weren't real?

The Discussion

When faced with questions like this, how would you respond? One's initial reaction might be to say "*It is all baloney. Don't waste your time. Only kooks believe*…" However, this wouldn't have achieved the main goal of helping the boy think like a scientist and likely would have been ineffective in changing his beliefs. Instead of attacking his beliefs, I helped reconstruct his questions in a scientific manner and got him to evaluate the evidence himself (Please forgive the many double negatives in following. They were necessary because of the nature of the discussion).

Here are some snippets from our discussions:

"*Can you prove that Bigfoot doesn't exist*?" Answer: No. Science can't prove something doesn't exist. Bigfoot may exist. However, I've not seen convincing scientific evidence that Bigfoot exists. The scientific questions are: What scientific evidence do we have of Bigfoot's existence? Do we have skeletons? DNA? Evidence of habitats? Other physical evidence?

Therapy sessions with the Loch Ness monster

As an example, I told him we can never prove that humans don't have green skin. We can say that all available evidence suggests that no one has green skin, but there still might be someone in a remote jungle that has green skin. Also, even if we examine a million or more people, there could be someone we didn't see or someone who lived 100 years ago that had green skin.

How can you explain the legends and myths of native people that are based around cryptids? Could they be true? Answer: Yes, the ancient legends could be true. Ancient people's had many beliefs about the world; some turned out to be true, some were not. As scientists, we evaluate the evidence and conduct experiments

to determine what to believe.

As an example, I discussed that ancient peoples had many beliefs about herbal remedies. As modern scientists, we test these remedies using scientific methods to see if they really work. Some work, some are dangerous. Aspirin was invented by testing an ancient remedy.

Could Bigfoot have evolved from orangutans? Answer: Yes, it could have. However, as a scientist, I would want to know what evidence we have to support this hypothesis. Do we have DNA evidence of Bigfoot? Comparisons of Bigfoot/Orangutan skeletons? Evidence of intermediary species? (A similar approach can be used with Creationists. They tend to attack evidence for evolution rather than to provide evidence for Creation "science." Turn questions back to them and ask for the scientific evidence to support their claims).

What is your opinion on cryptozoology? I asked for the definition which he gave as the "study of unknown and hidden creatures." I explained that "crypto-" is an unnecessary distinction – that the basis of all science is to help us discover and understand the unknown. In par-

ticular, many zoologists spend their days trying to prove the existence of new species. They do so by assembling the scientific evidence and publishing it in a scientific journal that is critiqued by other scientists. That anyone can write anything on a website whereas only articles that have scientific merit are published in scientific journals. If a scientist could prove the existence of Bigfoot, they would become famous.

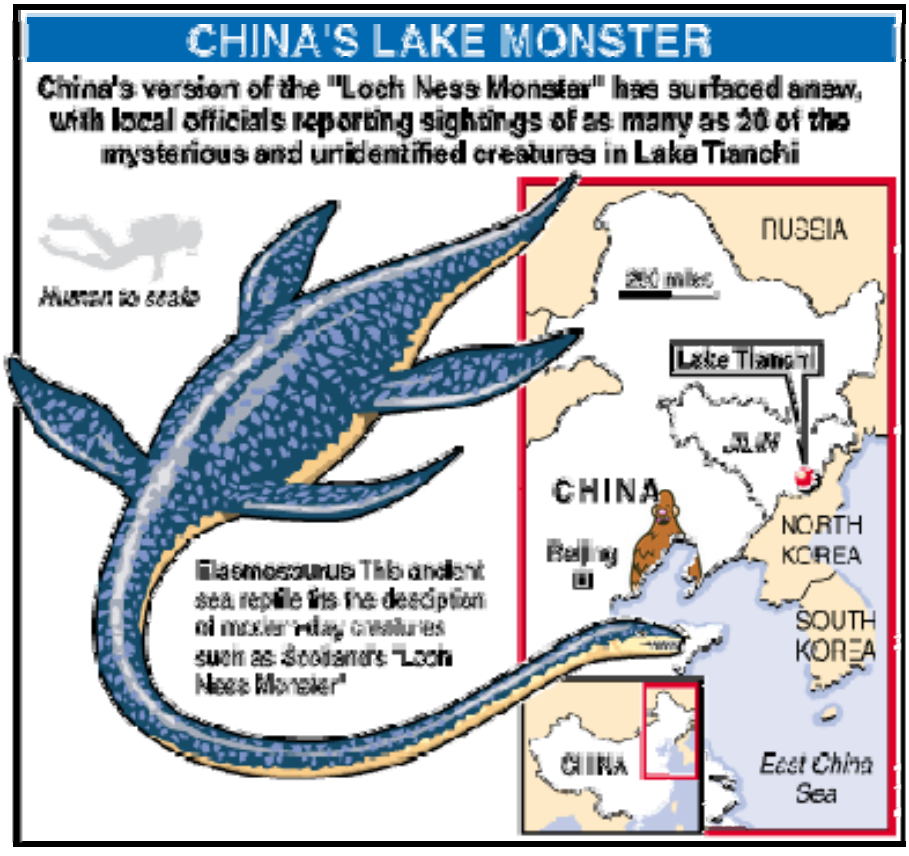
Outcome

After the phone call, one of his parents sent an e-mail saying: "*he told me he never really believed that bigfoot exists but that it's a possibility. That is a complete turnaround for him. Over the last few weeks he's gotten very frustrated with us because we've been trying to tell him bigfoot doesn't exist as far as we're concerned because there is not evidence of it - exactly what you told him in your conversation yesterday. …I am glad he's trying to form more logical ideas. I think being told if something can be proven to exist, it does, was a great way to tell a 13 year old.*

An indication of an effective discussion is that both parties feel that their perspectives were respected and that the conversation was productive. In this case, all three parties felt good about the outcome: PhACT's Council contributed to the critical thinking skills of someone, the boy's parents were happy about the growth of their son's logical thinking skills, and the boy himself made great strides towards thinking like a scientist.

Some suggestions:

1. Avoid disagreeing with statements. Science can't prove the negative, so we can't conclude Bigfoot doesn't exist (or demonstrate that aliens haven't visited earth). We can conclude that the evidence isn't convincing. Explore ways the statements may and may not be true.
2. Decide whether to answer questions, rephrase them, or whether an alternative line of discussion might be more productive. For example, rather than to get into a discussion on whether Bigfoot videos were fake, it was more fruitful to discuss that video evidence is insufficient to prove the existence of a new species. Because videos can easily be faked, we need physical evidence to supplement any video.
3. Look for any & every opportunity to discuss basic principles of science.
4. Point out that anyone can write anything they want on website. In contrast, publication in a scientific journal means that the article underwent review by other scientists.
5. When appropriate, state the obvious. For example, some conspiracy theorists might suggest that mainstream science is suppressing evidence of Bigfoot. It was useful to note the obvious, i.e., that fame would come to a scientist that could scientifically prove the existence of Bigfoot.
6. Ask for questions beforehand so that you can formulate possible responses.



Resources for Critical Thinking

The Foundation for Critical Thinking, at San Diego State University, provides excellent inexpensive booklets on critical thinking (http://www.criticalthinking.org/) . They have booklets appropriate for all ages. Whether I'm teaching my graduate level class or talking with elementary school kids about science, I've found their guidance useful. If you are a teacher/educator, I highly recommend their booklet: "*Critical Thinking: Basic Theory & Instructional Structures.* This booklet describes how to incorporate critical

thinking into any class for any age of student. If you are a student, or have kids that are "*How to study & learn a discipline*" is excellent. Although this latter publication is targeted at older kids (high school+), it will also help parents guide the thinking of their younger kids. The booklet is a "must" for college students.

The author, Dave Cragin, Ph.D., is a Councilor for PhACT and an Adjunct Associate Professor in the Departments of Pharmacology/Toxicology and Health Policy, at the University of Sciences, Philadelphia. At the University, he teaches a course entitled "Risk Assessment, Critical Thinking, and Health." He's been heavily involved in the Society of Toxicology's efforts to teach kids about science and he regularly talks in schools about toxicology and careers in science.

Editors note: PhACT wishes to thank the Franklin Institute and Steve Snyder in particular for getting the ball rolling on this valuable educational experience.

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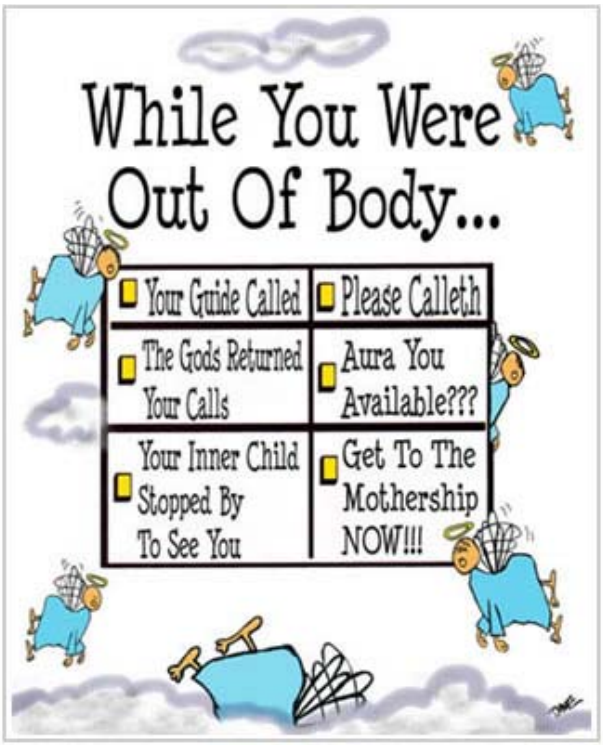
Out of Body - Out of Mind?

By Becky Strickland

Stories of near death and other out-of-body experiences are ubiquitous. Neuroscience has, through careful research, explained these experiences as originating in the brain, but those explanations appear in science magazines and research journals, rarely in the popular media. The August 24th edition of the Philadelphia Inquirer, on page 3, reported that independent research groups have induced out-of-body experiences using virtual-reality goggles, a camera, a rubber hand and a stick. "The sense of having a body, of being in a bodily self, is actually constructed from multiple sensory streams" said Mathew Botvinick of Princeton. When information from these streams - including vision, touch and balance - doesn't match up, the brain can interpret this as a sense of being in a different body. Parts can be separated from the body by manipulating a mismatch between touch and vision.

In one lab, subjects hid one hand in their laps and looked at a rubber had on the table in front of them. As a researcher touched the real and rubber hands simultaneously (with the above mentioned stick), subjects report a sense the rubber hand was theirs. When the rubber hand was whacked with a hammer, they sometimes cried out.



In another experiment subjects wearing virtual-reality goggles watched an illusion of their own backs. When the researcher stroked their backs with a stick while projecting an image of a stick onto the ''virtual body'', subjects reported feeling momentarily in the virtual body. These and other experiments provide a scientific explanation for phenomena that's often attributed to other worldly influences. It's always encouraging when a scientific explanation finds it's way into the popular press.

Becky Strickland is a member of the PhACT Council and is an active participant in the Critical Thinking scene around Philadelphia.

Editors note: This topic was discussed in the Science and Technology section in the August 25, 2007 edition of The Economist.

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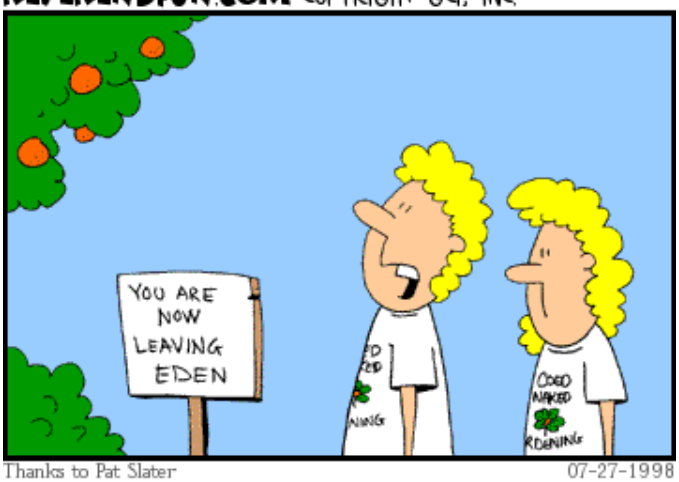
Skeptical Podcasts, Part 2:
Heirs to the Throne
By Greg Lester

Last time I took you on a tour of fairly mainstream skeptical podcasts – radio show-like audio files that you can play on your computer or digital audio device. This time, I will look at two programs that play more closely to the fringes of science and skepticism. Unlike Skepticality *or the* Skeptic's Guide to the Universe*, these shows don't involve panels of skeptics discussing the science and nonsense of the day. Instead, they mostly consist of one-on-one interviews, pitting skeptic vs. believer (or vice-versa, as you will see). The first, Rick Wood's* Audiomartini *(audiomartini.com), takes a skeptic look at fringe scientists and believers, while the other, Alex Tsakiris's* Skeptiko *(skeptiko.com), is from the other side of the looking glass entirely. You can subscribe to either show on iTunes or through their respective websites.*

Skeptics everywhere owe a debt of gratitude to Art Bell, the occasionally-retired host of the *Coast to Coast AM* radio show back in its heyday during the 1990s. Under Bell's hand, *Coast to Coast* was part of the background noise of the conspiracy culture, up there with episodes of *The X-Files* and references to Area 51. His seemingly complete credulity was almost inspirational -- driving some listeners to investigate these claims on their own. It either led them toward the path of critical thinking or to mill about the intellectual swamps found at the fuzzy fringes of science.

On a given night, he could, for example, agree with each caller, in turn with sincerity, that aliens were either demons, angels or time traveling humans. Bell was either a true believer or a true showman. He was alternatively infuriating and engaging and, either way, I loved the show. Personally, I owe Mr. Bell my thanks for keeping me awake while working the third shift as an ER clerk or on a long, late night drive back to Pittsburgh. Bell's replacement, George Noory, is too spiritual and too fluffy, by comparison.

If one person could replace Art in my heart, it would be Rick Wood – a skeptic's skeptic unafraid to deal head-on with spiritualists and conspiracists of all stripes. Wood takes on the same sort of guests you would hear on Art Bell, yet he manages to ask the same sort of questions that I used to shout at the radio at 3 a.m. while barreling down the turnpike. You may have seen Wood's byline in the *Skeptical Inquirer* and he is, if you can trust the web, a member of a number of skeptical organizations.



Wood's *Audiomartini*, despite the lousy sound quality and cheesy opening, is excellent radio. In fact, much like the Penn Jillette podcast I mentioned last issue, it is an actual radio show, broadcast weekly in a precious few markets across the country and reproduced without commercials for download. He does not, however, seem to take callers.

The format of *Audiomartini*, given the tagline "Paranormal Radio with a Twist," consists of a weekly hour-long interview between Wood and a single caller. While he occasionally interviews a Michael Shermer or James Randi, Wood specializes in conversations with paranormalists in which he lets him say their full piece and (mostly) reserves judgment. Wood takes a subtle hand with the show, and I had to listen to a few episodes to catch on to what he was doing – was he a "skeptic" or just playing lip service to the term? *Audiomartini* is just that – a stiff, dry drink of paranormal, best taken in sips and savored.

More often than not, Wood's guests tend to hang themselves on their own absurdities. He seems to trust his listeners enough to get it and doesn't seem too concerned with those that don't. When he does ask a question, it is usually in the form of a direct challenge to his subject's statements and designed to provoke a reaction.

Over the last few episodes, Wood has spoken to spiritualists, ghost hunters, Amityville Horror debunkers (it seems that there are enough of these now to form their own subgroup), UFO believers and Holocaust revisionists. I must admit, however, for that last one, I wanted Wood to hand the smarmy jerk his ass in no uncertain terms. The hands-off approach is really only tolerable when the stakes are trivial.

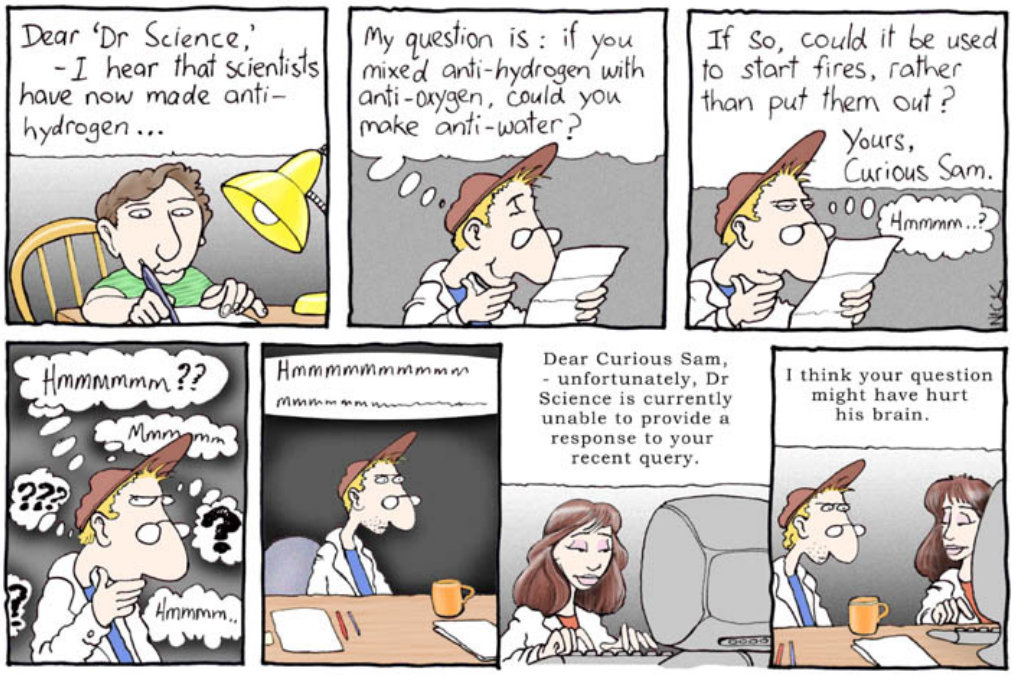
Even if you prefer the full-on debunk mode of podcasts like *The Skeptical Guide to the Universe*, *Audiomartini* is worth a listen and a refreshing change of perspective.

Meanwhile, in a parallel universe is Alex Tsakiris's *Skeptiko (*, a show that is directly in the paranormal camp, and yet focuses on taking a look out at the world of science and skepticism. While I have only been listening for a few months, Tsakiris seems to focus on paranormal explanations of consciousness and is a big believer in Dean Radin and his psi statistics at the blurry edges of detectability.

The show's tagline, "science at the tipping point," seems designed to invoke the notion that there is a pending Gladwellian moment in which the world will accept the fringe evidence for paranormal consciousness and psi. With only a handful of themes, however, I wonder if the

show isn't running out of steam.

Pardon the tangent, but I think it is interesting to note how the paranormal world has moved in this direction over the last few years. True believers aside, many of the other paranormal fields have given up their pretensions of science. Ghost hunters seem more concerned with fielding TV pilots than scientific rigor. Online, cryptozoologists have broken into separate camps for serious fans of legitimate hunts for exotic creatures and fans of tongue-in-cheek searches for monsters and unicorns. It could be me, but I'm sensing an upwelling of Fortean Times-style camp among folks who seem to enjoy pseudoscience and the supernatural but are not burdened by excessive seriousness. This sense of joy has not taken over the entire paranormal "side" of things, of course – conspiracy freaks and charlatans abound – it is refreshing change of pace after the earnest doom and gloom of the Y2K-era UFO nuts and apocalyptoids.



On Skeptiko, Tsakiris interviews bona fide skeptics (like Naturalism proponent Tom Clark or Stephen Novella of the New England Skeptical Society and *Skeptic's Guide to the Universe*) or people involved in studying the fringe notion of consciousness, like Dean Radin or Rupert Sheldrake. Tsakiris beats the drum for psi research, pushing the notion that it is a protoscience (my words, not his) rather than fringe or pseudoscience.

I have no doubts about it; Alex Tsakiris has no love for skeptics. His interviews with fringe researchers often go into protracted whinefests about skeptics, in particular, and mainstream science, in general. You'll hear old standards from "they don't look at the evidence" to somewhat irrational rants "…skeptics fear us, because we'll overturn science." His insistence that the skeptical community is little more than a priesthood protecting the dogma of science is an old – and tired – straw man that will surely win him fans among PhACT's own sub-cabal of Journal of Scientific Exploration fans.

His interviews with skeptics, in comparison, are fun and challenging. While Tsakiris seems less confident when confronted by real live skeptics, he does manage to ask good, thought-provoking questions. He is forced out of his box a bit, and both he and his guests give as good as they get as a result.

Unfortunately, Tsakiris managed to squander my goodwill during an interview this past June with David Lester (no relation), a professor at the Richard Stockton College of New Jersey and author of Is There Life After Death*? An Empirical Examination of the Evidence*. (I haven't read the book, but judging by what Lester says in interview, the answer seems to be "no, not really, sorry.") Tsakiris plays one little underhanded trick, where in editing the interview, he halts the conversation and adds a non-sequitor editorial about how atheism is a religion, attempting to undercut Lester purely on the terms of his atheism. In effect, he puts words into Lester's mouth and does not give Lester the courtesy of an opportunity to reply. I may be biased against Lester abuse, but it was bad form.

I also have yet to forgive Tsakiris for an episode earlier this spring when he promised to pit Sheldrake against Richard Wiseman in a psychic-dog-showdown bloody enough that Michael Vick began taking bets. (What, too soon?) In reality, he simply re-cut his previous Wiseman interview with outtakes from a speech Sheldrake gave, to disappointing effect.

Tsakiris has an obvious chip on his shoulder when it comes to skeptics. Yet when Tsakiris behaves, *Skeptiko* can be very good.

Of course, if you haven't already figured out my view, *Audiomartini* is the better podcast. Not only because of the sincerity of its host – Rick Wood has perfected the skeptical interview, in my opinion – but also because of the scope of its look into the paranormal and fringes of science. Despite his skeptical credentials, Wood is the current king of paranormal radio.

Greg Lester is a mild mannered skeptic who works in Center City and is owed Lunch by the editor of this Propaganda Rag.

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I support the aims of PhACT and would like to join/rejoin for the next year. The annual membership is $15 and $10 for students. I have enclosed a check payable to **PhACT**.

Membership dues of $_____enclosed to pay for _____ years of membership.

Donation of $_____ enclosed for (please indicate)

____ additional support ____ a specific purpose: _____

Name:_____ Phone: _____

Address:_____

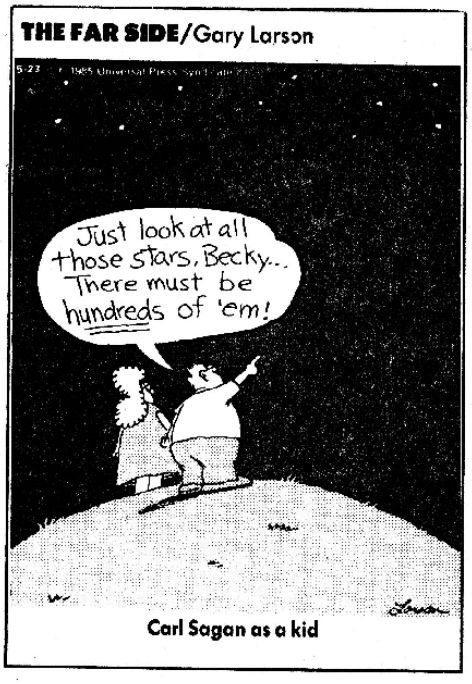
_____ E_mail _____

The **Delaware Valley Amateur Astronomers** is a group of enthusiastic hobbyists who live in and around Philadelphia, Pennsylvania, USA. We love to share our knowledge and enjoyment of astronomy with other amateur astronomers and with the general public.

The DVAA's monthly meetings are **free** and the public is invited to attend. Meetings always feature a short talk on "what's up" in the sky currently, as well as a talk by a professional astronomer or members of the DVAA or a neighboring club. Meetings also provide time for informal socializing, picking up information sheets from the "freebie" table, and browsing the club's sales table and lending library.

The club holds free public star parties every four weeks from April through November at Valley Forge National Historical Park near Philadelphia. The club also runs classes and clinics that provide an opportunity for one-on-one interaction between new and experienced hobbyists.

Website: dvaa.org



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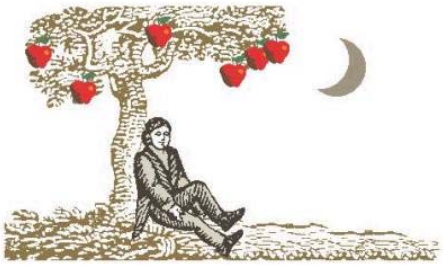

Sir Isaac Newton about to discover gravity

Extravagantly beautiful Fay Wray, who will forever be known as "The Girl With the Problem Boyfriend", was born September 15, 1907. Miss Wray, a native of Cardston, Alberta, Canada, passed away in 2004.