National Capital Area
SKEPTICAL EYE
•encourages critical and scientific thinking •serves as an information resource on extraordinary claims
•provides extraordinary evidence that skeptics are cool

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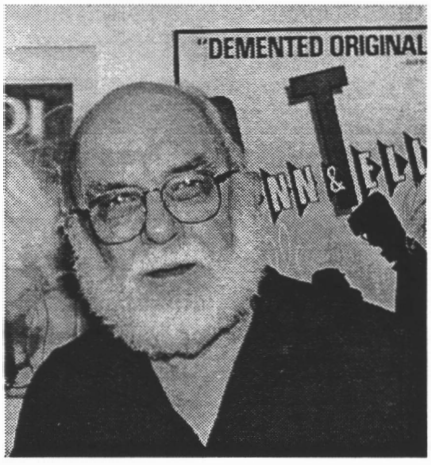
1995

CUCKOOS AND COCOA PUFFS

by Carol Krol



After years of battling spoon-bender and self-proclaimed psychic Uri Geller, James "The Amazing" Randi, finally has reason to celebrate. So do we. The well-deserved personal triumph of this noted magician, author and skeptical rabble-rouser is clearly a triumph for the skeptical community as well. "This is a total victory against Geller," says Michael Kennedy, Randi's New York attorney.

Three judges of the U.S. Court of Appeals for the D.C. Circuit issued a decision in December, 1994, siding with a lower court judge, that ordered Uri Geller to pay sanctions to CSICOP (The Committee for the Scientific Investigation of Claims of the Paranormal) in a 1991 lawsuit brought against both James Randi and CSICOP. In the opinion, written by Judge David B. Sentelle—who was joined in the decision by Judges Patricia M. Wald and Judith W. Rodgers—he states, "Since Geller's rise to prominence in the early 1970's, Randi has set about exposing various Geller feats as the fraudulent tricks of a confidence man." The editorial nature of this statement, along with Sentelle's subsequent reference to Geller's "litigious history," can be seen as particularly significant in light of the fact that the Court's decision was based on a series of technical findings rather than on the merits of the case itself.

Geller was originally ordered to pay $149,000 to CSICOP to cover the cost of CSICOP's legal fees. He made unsuccessful attempts to overturn the sanctions award, and a final settlement was reached in January. Geller has paid the first $40,000 of up to $120,000 as part of this agreement. He has agreed to pay a total of $70,000 over the next three years, in addition to the first $50,000 of any sums he might recover in a new action he is bringing against his former attorneys.

As we go to press, Randi and Geller have hammered out a final agreement as well. "Everything is completely settled," says Michael Kennedy. "It is a global settlement of all disputes." Kennedy adds, "...Geller has dismissed the lawsuit with prejudice rather than appear at a continuation of the deposition of his that I was taking wherein the court ordered him to perform minor miracles." The confidential settlement covers all potential actions in the future undertaken by either party.

In 1991, Geller filed this $15 million suit against James Randi and CSICOP, claiming that Randi was speaking as an agent of CSICOP and alleging that Randi had defamed

Continued on page 3

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editor's remarks

I'm an avid magazine reader. I also work in the publishing industry, so I'm exposed to 20 to 30 magazines each month. My employer, Condé Nast, publishes 13 national titles alone, and I at least scan most or all of them, in addition to the many magazines to which I subscribe.

I enjoy the quick read of a magazine, from humorous first-person essays to investigative pieces to the latest fashion trend. Sadly, though, many magazines promote light reading that is more likely to darken more than illuminate. Articles that promote the pseudo-sciences—homeopathy, aromatherapy, therapeutic touch and herbology—are all too common. It used to be that women's magazines were the primary culprits of this brand of credulous journalism, but these days it can be found in cross-gender publications like *Prevention* and *American Health*, as well as men's magazines like *Men's Health* and *Men's Journal*. Of course, magazines certainly haven't cornered the market on light fare; it pervades all forms of media—television, radio, newspapers, and even the Internet.

Magazines are a powerful medium. They shape ideas and opinions. They adapt to their audience and their marketplace in order to compete and build toward the future. The ever-increasing number of magazines available today on-line is one testament to this adaptability. The magazine industry, like any other industry, exists to fulfill a need — in this case, to bring the public information and entertainment. However, magazine publishers are primarily in the business of making money. They are publishing words and images that *sell*. Consumers create the demand and magazines supply the product. What sells, however, may not necessarily be "good science."

All is not lost, and we skeptics may find hope in a significant trend in the publishing industry today. More and more magazines strive to strengthen the relationship with their readers through subscriber studies, focus groups, and reader surveys. It's a marketing issue. What better way to get closer to the pulse of the readership than through communicating directly with them? Every publisher wants to adapt and improve what they sell to their readership, so more people will buy more of it and they can sell more product and more advertising. It's simply smart marketing. In the process, readers have gained a more powerful voice. This trend is important and useful to us. It gives us a valuable opportunity to be heard.

Of course, traditional opportunities to voice our opinions have always been there. We can write letters, make phone calls or send e-mail. If you read a magazine article or see a television program that's evenhanded and skeptical, write to that magazine or TV station and praise them for it. If you see something that smacks of pseudo-scientific drivel, let them know you're not pleased. Affecting change will be a Sisyphian task, but better to take an active role in trying to move the stone than to wring one's hands and abandon the world to crystal worship and faith healing. NCAS Board member Chip Denman did just that. Chip found a general posting from NBC-TV in the Skeptic Listserve, an electronic discussion group, that asked for anyone with personal experiences with "spirit guides" to

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24-hour phone number: 301-587-3827
BBS: 703-280-1446, 2400-N-8-1-F
Email: ncas@cs.umd.edu

contact them for possible inclusion in an upcoming program. Chip responded by presenting NBC with a skeptical viewpoint (see text of letter below). His response resulted in a phone message from the producer of the show who was interested in flying Chip out to Los Angeles to appear on their program. It was very last minute, and Chip wasn't able to make the trip on such short notice, but there was no doubt his message was heard.

The *Skeptical Eye*'s ongoing feature, "The Watchful Eye," was created under the editorial leadership of Elena Watson. It has been the "current events" page of the newsletter, a way to stay informed about what's going on in the media. We intend to continue this tradition, because it's important for all of us to be ever-watchful.

Write to us here at the *Skeptical Eye* and tell us about what you see in the media—good and bad. It can be easier to find examples of the bad—perhaps too easy!—But it's equally important to champion more of the good. Let's continue our activist role and make ourselves heard. After all, we're all part of the marketplace—of ideas.

—Carol Krol

Letter to NBC:

I understand that NBC is seeking out folks to tell their personal tales of contact with the spirit world. If a show offers such without actively encouraging its audience to think critically about the world, NBC would be doing a disservice to the public.

The history of spiritualism is fascinating. It shows how intellect and academic standing are not proof against tricks flavored well with emotional overtones. The mix of the macabre with humor has been a great hook to get my students (Honors Program, University of Maryland at College Park) to think hard about the way scientists—both 150 years ago and today—examine claims. And in the small theatrical seances that I have 'conducted,' I have found that audiences still respond enthusiastically to ghosts and spirits, even when the overall message of the medium is "be VERY skeptical!"

In the 19th century, Native Americans and pirates materialized as spirit guides in parlor-room seances everywhere. A few years ago, spirits from Atlantis were the rage. Today, guardian angels seem to be in vogue. Only the accents have changed.

Please use your opportunity to educate and entertain.

Sincerely,
Chip Denman

Randi, from page 1

him by comments made to the *International Herald Tribune*. Randi's exact comments were that Geller "tricked even reputable scientists" with tricks that "are the kind that used to be on the back of cereal boxes when I was a kid. Apparently scientists don't eat cornflakes anymore."

Legal battles with Geller are hardly novel to Randi. Geller has hounded Randi for the past several years with lawsuits that span the globe, from Japan to Florida to Hungary to New York. The Japan case in particular would almost make for good comedy.

Randi had granted an interview to a Japanese reporter who spoke no English. There was an interpreter present, and the reporter began asking Randi a series of questions, some of which involved his opinion of Uri Geller. "The spoken Japanese language and the written Japanese language are *not* the same thing," Randi explains. "Characters must be looked at in context to figure out the meaning." At one point, Randi told a story about a supporter of Geller's, Wilbur Franklin. A classic game of "telephone" ensued, and the quotes on the page were quite different from his original comments.

"Wilbur Franklin, a parapsychologist, was a diabetic who gave up insulin and went to a faith healer and eventually died," says Randi. "I said Franklin had a way of shooting himself in the foot, because every time he would make a statement about Geller, it would turn out to be not so. And I said he sat down at his typewriter and this time he shot himself in the head, because he wrote in a magazine article that he would stake his entire personal and professional reputation on the reality of Uri Geller's phenomenon. That's shooting yourself in the head; that's not shooting yourself in the foot. The way it got translated was that 'Wilbur Franklin found out Uri Geller was a fake and shot himself.'

"Then they asked me whether I thought Geller knows that what he is doing is a trick. I said there's no other way that it can be done. You have to be conscious of what you do when you do trickery. I said the reason for it is that

Geller doesn't have any sense of what he does to people when he performs these tricks and tells them that they're real. He has no social conscience was my final word. That came out in Japanese as 'Uri Geller is a loathsome social disease.'"

Randi would have been able to prove that he had not made the published statements, since the publishing company had the original tape recording. However, he could not afford to go to Japan, nor pay a lawyer, for the duration of the trial. While Randi communicated all of this in writing to the Japanese court, he received no response, and the case went to trial, whereupon he was convicted of "insult" (as opposed to libel). Randi was ordered to pay $2,000 U.S.; ultimately, however, since the charge of "insult" is not recognized by American law, he was not compelled to pay Geller. The global settlement recently negotiated by Michael Kennedy, in fact, resolves this case as well. These issues were revisited due to the communication difficulties between the Japanese lawyers and Randi.

It has been a long, difficult, expensive process for Randi. However, he's garnered tremendous support from a variety of people—from good friends to total strangers on the Internet. "The support I got was just incredible," says Randi. "I could not have expected this kind of reaction. People were exceedingly generous from the very beginning. Those checks just started to pour in. Every last one of them are saints as far as I'm concerned."

It wasn't just money pouring in either. "If I needed any kind of information, all I had to do was get on-line," says Randi. "For example, look at the Cocoa Puffs box." Randi had been fishing around for an example of a trick printed on the back of a cereal box. He decided to find out if anyone in cyberspace could help. "I just said, 'Anybody got any examples?,' and this guy replied that he had a friend in California who collects cereal boxes as a hobby," says Randi. "The guy immediately came up with a photocopy of [a trick on the back of] a Cocoa Puffs box and said he would send me the original box if I needed it. Bang! Just like that. I got my answer within 48 hours. And I got so many offers from lawyers all over, offering help with references and so forth."

Though they were initially named as codefendants by Geller, Randi and CSICOP fought their legal battles separately in the 1991 suit. As an executive council member and one of CSICOP's founders, Randi constantly promoted the group and spoke on their behalf. "[CSICOP Chairman Paul] Kurtz cut me loose from the very beginning. He told the insurance company that I hadn't been working on behalf of CSICOP when the 'dreadful act' of telling the truth about Geller was actually uttered. And of course I was. That was part of my job."

Although Randi was compelled to defend himself without CSICOP's support, he concedes that it may have benefited him to pursue his own legal battle with Geller. "It may not have been very wise for me to accept CSICOP's lawyers," says Randi. "For instance, they might emphasize certain things in CSICOP's favor that might not be in my favor. And CSICOP obviously recognized that they had different interests."

CSICOP also ran an advertisement in the *Skeptical Inquirer*, appealing for contributions to help fight the 1991 case. Randi's name was mentioned in the advertisement, and he feels this was misleading to the skeptical community. "CSICOP did me a disservice by running that ad with my name attached to it. I got a lot of response from people, especially on e-mail, who thought they were contributing toward my defense as well when they sent checks to CSICOP. Not one cent that was ever given to CSICOP defended me except, I believe, in two cases where the check itself was made payable to CSICOP and Randi. Otherwise, it all went to CSICOP."

Randi is in good company when it comes to being sued by Geller. "Litigious" indeed. Geller has sued Timex, the watch company; Prometheus Books and Victor Stenger (an author for Prometheus); and Michael Hutchinson (a book distributor in England), to name a few. His beef with Timex arose from a commercial they ran which featured a psychic; Geller claimed the psychic looked

like him. The psychic tries to stop a Timex watch, but can't do it. It, of course, keeps on tickin'. The case never went to court.

So what now? What's left after years of battling Geller? "Nothing," says Randi. "Just me going after the insurance company for the money." Legal counsel in Baltimore are currently reviewing the possibility of recovery of at least a portion of Randi's litigation expenses.

Randi concludes, "The bottom line on this whole Geller thing is that I didn't yield an inch. I didn't back up once. I never gave him the satisfaction of ever seeing me flinch, ever. Any time that he really threw the gauntlet at me, I hit him right back."

Randi's legal battles with Geller are finally over. That's the good news. The bad news is that his legal costs are still sizable, and any and all contributions are welcome.

Contributions to The James Randi Fund may be sent to:

The James Randi Fund
3555 West Reno Avenue, Suite L
Las Vegas, NV 89118.

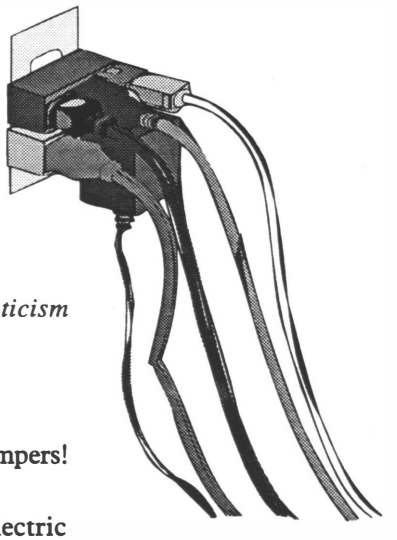
In Search of:

We are always looking for ideas for future NCAS programs and activities. Are there topics that you'd like to see covered? Can you suggest a possible speaker? Would you like to participate in more social and/or action-oriented meetings? Please give a call at 301-587-3827 or send e-mail to ncas@cs.umd.edu.

Keep Your *Eye* Open

Send your articles, letters, and original artwork for future publication in the *Skeptical Eye*. Contributions should be typed, not handwritten. If you use a computer, please send hard copy along with your floppy disk (5.25" or 3.5", DOS preferred.) Please be sure to include your name, address, and telephone number. Send all contributions to *Skeptical Eye*, 8006 Valley Street, Silver Spring, MD 20910.

The Electric Skeptic



occasional articles about skepticism on the electronic frontier

by Chris Ragaisis

Greetings, electronic campers! It's time for another installment of The Electric Skeptic! Excitement and exclamation points abound!

I thought that it was about time to address one of the major reasons that the Internet has gained more massive popularity within the last year than at all previous times - the World Wide Web. Let's run through a brief bit of history.

In the beginning, there was nothing - the VOID. Then, the U.S. defense industrial complex decided that it would be beneficial to have a way to communicate that wouldn't be so susceptible to enemy disruption. Hence, the "Net" was born. And it was good. Then it expanded to scientific research institutions. And it was good. Then it expanded to certain academic institutions. And it was *still* good.

Then e-mail was invented. This caused a monstrous explosion in Net population, since we had something good combined with an easily conceptualized way to communicate (people have a hard time dealing with things for which they can't create a mental metaphor). Now the net was *better*.

Life went along in this "better" mode for quite some time. Lots of people were exchanging ideas, but it was mostly limited to techno-geeks, computer science students, and the precious few companies who recognized that Net-borne communications could possibly save time and/or cash over the alternate methods.

An *extremely* easy way to browse the World Wide Web was introduced by the National Center for Supercomputing Applications. Suddenly, the Net went from better to *cool*. It

made the previously complex and arcane method of navigating through the morass of Internet sites virtually obsolete. This tool made those people who were formerly afraid to match wits with the UNIX command line interface some of the boldest explorers of the virtual jungle. The Net population rocketed skyward (far more than anyone imagined). With this grand tool of World Wide Web browsing, there was no more fear. It was easy to use. It was easy to understand.

And it was *free*.

That's right trendsetters, we're talking about Mosaic.

Why did I digress? What could have possessed me to load you up with all of this esoterica? I think it always helps to know where you're coming from to understand where you're going (or, to put it in the more common parlance, "Study history or become history.") What all of this leads to is how to use the Mosaic Web browser (or any other of the host of other Mosaic-style browsers that are hitting the market daily) to satiate your skeptical appetite.

First, a couple of words about Web browsers. The reason so many people got into Mosaic (or Netscape or any of the other Web browsers) was that the user interface was *graphical*. It was all point and click. You almost *never* had to type. Now, in order to use this type of tool, you need a special kind of Net connection. Chances are, if you are using Mosaic from the office or school, the proper kind of connection is there. Where you have to watch out is if you use a modem to dial up to an Internet service provider. All hope is not lost, since you can sometimes get a SLIP or PPP connection through a dial-up line (you can ask your Internet service provider if this is possible) or you can break down and purchase an all-in-one commercial package. Everyone is getting into the act; Prodigy is already touting their Web connection, and others like Compuserve and America OnLine aren't far behind.

If all of this is impossible with your resources, you can *still* browse the Web. There is a UNIX command line Web browser called "lynx." This program is a standard and probably exists on your current Internet server. You can browse the Web by typing "lynx" before any Web address. Then just follow the directions on the bottom of your screen.

Okay, back to skeptic stuff. The World Wide Web is thick with what is known as "home pages." Essentially, a home page is a document that holds any combination of text, graphics, sounds, and links to *other* home pages. The Web is comprised of these pages all linked at the whim of each page's creator. The trick is to know where to look to get a good start on your search.

The first stop-off site I can suggest is NCSA's home page (that's National Center for Supercomputing Application). You can get a good feel of what the Web is like from there, as well as obtain the latest version of the Mosaic browser for whatever computer flavor you prefer. The address is:

```
http://www.ncsa.uiuc.edu/SDG/
      Software/Mosaic/
      StartingPoints/
      NetworkStartingPoints.html
```

I know, it's a mouthful. Just trust me and try it.

The next step is to know how to find things on the Web. With the hundreds of thousands of documents available, there has to be something to help you find what you need. Well, you're in luck. There are several of these somethings. They're called Web search engines. A number of them can be accessed by typing:

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http://home.mcom.com/home/
      internet-search.html
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All the instructions you need are right there on the screen.

Okay, now we can get the latest software from NCSA (the people who brought us Mosaic) and we can search for documents on the Web. How about a couple of skeptic-specific sites? I'm glad you asked (one of the reasons I like to write is that *I* get to direct the conversation). There are a few that you should

know about and check out often. The first (hey, we may as well toot our own horn!) is the NCAS page:

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http://www.inform.umd.edu/EdRes/
      ReadingRoom/
      Skeptics/ncas.html
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It's only a start; let us know what other cool stuff NCAS should tie into this.

The second is The Skeptics Society page:

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http://www.skeptic.com/
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(For those of you familiar with such things, this used to be the Lippard site, but was moved.) You'll find links here to other skeptics sites as well as links to articles of interest to skeptics.

The next place to check out is a site that resides in Sweden:

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http://gopher.lysator.liu.se:70/
      information/Skeptical/
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It is a hypertexted gopher site for various skeptic newsletters and frequently-asked questions lists (FAQs) for the Internet skeptics newsgroup and some of the folklore newsgroups.

The Skeptics page is also a treasure trove for the Web browsing skeptic. It has links to a number of the sites discussed in this article, as well as links to pages dealing with famous magicians who were also skeptics. Its address:

```
http://dragon.acadiau.ca:1667/
      ~860099w/skeptic/
      skeptic.html
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While you're at it, try getting into the Electronic Newsstand:

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gopher://gopher.enews.com:2100/
      11/magazines/alphabetic/
      all/skep_inq
```

You can get an on-line (and incomplete) version of *The Skeptical Inquirer* here.

Okay, all work and no play makes Chris a typical defense industrial complex employee, so here are a couple of sites that every skeptic will have a good time with. Snake Oil is listed as your guide to "Kooky Kontemporary Kristian Kulture." Check it out:

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http://fender.onramp.net/
      ~analyst/snake/
      Snakeoil.html
```

Another site is:

```
http://www.teleport.com/~vx/
      jackhome.html
```

This is the Jack Chick archive. Mr. Chick is a noted hard-core, angry, fundamentalist Christian cartoonist, and this archive has a skeptical spin on his stuff. This is truly fun stuff.

Gaah! Looking back, that's a lot more than I thought I'd have to say. And there's still one more thing I'd like to discuss. Where do we get our hands on the cool software that makes all this happen? Once again, I'm glad you asked. Mosaic is available for free from its creators at the University of Illinois. Just do an anonymous ftp to:

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ftp.ncsa.uiuc.edu
```

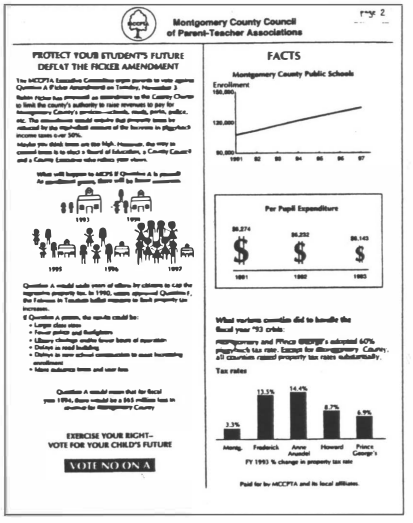
That's it. Next time I'll talk about gopher and ftp archives, and how you can use Mosaic to access them, as well as Internet newsgroups. As always, you can reach me with questions, comments, or just plain harassment at ragaisis@netcom.com or, for those of you without Internet access, dial into the Skeptic Tank BBS at (703) 280-1446. I'm the Sysop.

Till next time, don't forget what the power switch is for...

By The Numbers

by Chip Denman

What's Wrong With This Picture?


Montgomery County Council of Parent-Teacher Associations

PROTECT YOUR STUDENT'S FUTURE
DEFEAT THE PICKEL AMENDMENT

FACTS

Montgomery County Public Schools

Enrollment

Per Pupil Expenditure

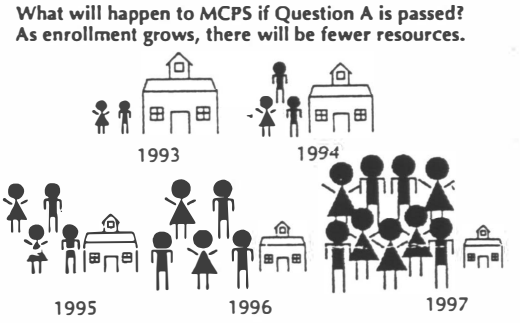
EXERCISE YOUR RIGHT–
VOTE FOR YOUR CHILD'S FUTURE

VOTE NO ON A

I talk to a fair number of reporters who are looking for a skeptical, scientific perspective on all sorts of stories. Most of the time the questions have to do with ESP, coincidences, religious miracles, and things that go bump in the night. But one determined reporter called to get the "official skeptics" position on Washington politics. Other than explaining that I was a skeptic and not a cynic, I was pretty much stumped. Political ideologies, like religious faiths, do not usually lend themselves to scientific scrutiny. But every once in a while something specific begs to be put under the microscope. The quasi-experiments in Transcendental Meditation which form the core of the Natural Law Party literature will be the focus of a future column. But first, let us examine a more general problem.

This gem of a political flyer was circulating in my home county in the Fall of 1992. Prepared by the Montgomery County Council of Parent-Teacher Associations, the flyer deals with an amendment to the County Charter which would have had implications regarding tax revenues and services. I'm not going to address the pros or cons of the amendment itself; rather, let's look at the way in which it uses visual images to sell its message.

Four distinct graphical areas jump up and call for our attention. The "schoolhouse" section graphically represents dwindling resources not only by increasing numbers of students, but also by students who are getting physically larger and a schoolhouse that is



getting smaller. I'm happy to chalk up this teacher's nightmare to metaphorical license, but even visual metaphors should be well connected to real numbers if they want to be quantitatively correct. If we put aside the physical distortion (which *does* have an impact on our psychological perception of the image), the numbers are *still* strange.

In numbers of students alone, the picture depicts the following percentage increases in enrollment:

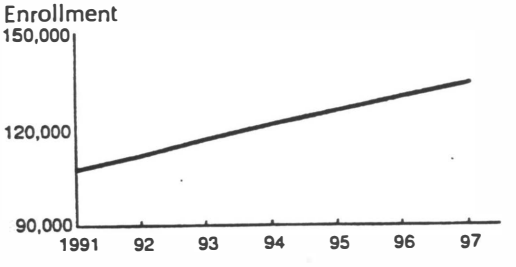
	increase relative to '93	increase relative to previous year
'94	50%	50%
'95	100%	33%
'96	150%	25%
'97	350%	80%

You don't need to be an expert in population dynamics to realize that increases like this are absurd. Already the flyer has undermined its credibility by presenting an impossible image.

I'll grant that the schoolhouse graphic is intended to be emotional propaganda rather than an informational chart. The next section, boldly labeled "FACTS," promises more substance about school enrollment and expenditures.

FACTS

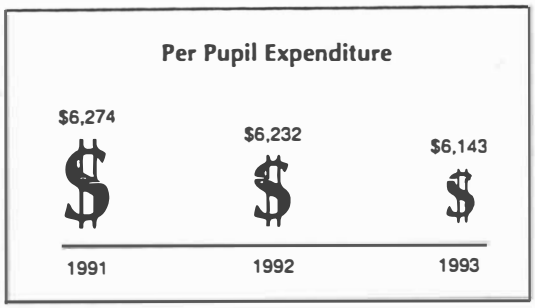
Montgomery County Public Schools



This seems clear enough. From 1991 to 1997, enrollment goes up as a ruler straight line. Where does this information come from? The flyer was made in 1993; the enrollment isn't a fact at all, but a prediction, without so much as a hint at uncertainty or a reference source. The constant linear increase doesn't even agree with the odd dynamics portrayed in the schoolhouse picture.

There is another subtle difficulty with the picture. Quick...without looking back at the graph, the enrollment is changing from what to what? The chart axis has labels from 90,000 to 150,000. Given the spartan nature of the chart, it is all to easy to remember just those numbers and an increase of 67%. Now look more closely. The enrollment line actually begins somewhere around 110,000 and goes up to about 135,000, a much less dramatic increase of 23%. A quick reading of the graph—even taken at face value—gives a wrong impression.

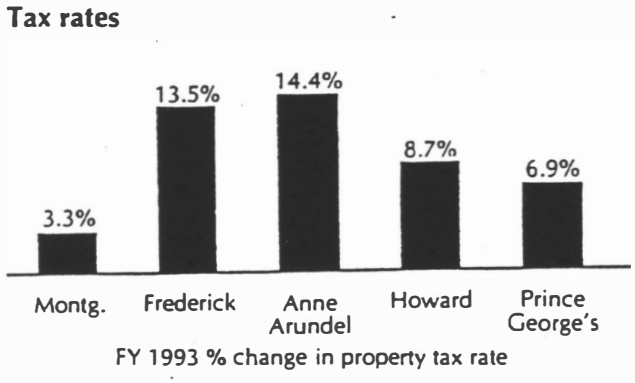
The next pictograph visually sells a strong message: our education dollars are shrinking.



The visual metaphor of the dwindling dollar signs is effective, but is it fair? This time the facts are all there for the world to see. In 1991 the county spent $6,274 per student, and in 1993 that was shrinking to $6,143. That's a decline of $131, or about two percent. A quick check with a ruler shows those dollar signs have shrunk by 40% in height—a rather different impression. Edward Tufte coined the term "lie factor" as the ratio of the apparent change in the visual image to the true change in the numbers. Here the lie factor would be a whopping 20.

The actual impact of the distortion may even be worse. Shapes on a page have both height and width. If we form our visual impression from the ink on the page of the whole image, we see those dollar signs as shrinking by 64%.

This kind of visual distortion has been decried by statisticians for ages. Thanks to well-read books by Darrell Huff and Edward Tufte, more and more chart designers appreciate the problem. Examples this blatant are refreshingly hard to find. Increasingly, chart designers are using visually effective bar and line charts rather than shrinking/growing glyphs or the inefficient pie chart. But even simple bar charts can be mangled.



The accompanying text talks about "piggyback tax rates," property tax rates, and how the various counties would deal with crises in Fiscal Year 1993. The chart is labeled "Tax rates" in bold print, and Montgomery County is shown as the shortest bar. Presumably, the message is that Montgomery County residents shouldn't feel too pinched, at least compared to their neighbors. However, in much smaller print at the bottom, we are told that the chart actually represents "% change in the property tax rates"—quite a different measure. Without actually knowing what the actual property tax rates were, simply reporting the percent change may create a false impression.

At least one other subtle effect is at work here. The flyer is all about Montgomery County, and fairly enough, that bar comes first. But the other counties are arranged so that the two tallest bars (Frederick and Anne Arundel) are placed next, while Howard and Prince George's are further away to the right.

How to do it right

1. Make sure the visual metaphor agrees with the data. Charts can be decorated and adorned and still be honest.

2. The eye does a good job of comparing positions drawn on a common scale and a bad job of accurately estimating angles. Use bars or even simple dots; avoid pie charts.

3. When representing time trends, go ahead and connect the dots with lines. Bar charts aren't the solution for everything.

4. Labels should be accurate and provide sufficient detail so that the reader doesn't have to guess about the meaning.

5. Save 3-D effects for three-dimensional data. Bogus 3-D boxes and exploding pie charts may look glitzy, but a non-informative third dimension usually detracts from the eye's ability to use the chart.

6. If you want to fairly show a difference or a change relative to the whole, don't cut the bottom off of a chart. A trivial change can look important if the chart hides the whole scale.

7. Use color with restraint to focus attention. Too much rich color is distracting.

8. Remember...you *don't* always need a picture. Good graphics effectively take advantage of our ability to recognize complex visual patterns. When data is sparse—like in the dollar sign graphic—a simple table is usually more effective.

The eye tends to respond to the large difference between the short Montgomery bar and the tall ones next to it. If the order of the other counties had been reversed, the visual comparison with Montgomery would not seem quite so extreme.

Political flyers are not scientific papers, and different standards of objectivity apply. Fortunately, virtually everyone recognizes the need for skepticism when encountering political messages from whatever side or position. Let the presses—and the copy machines—roll, and let the reader beware! But I found it particularly irksome that a parent-teacher group would use such quantitatively illiterate charts. These charts flunk.

Suggested reading

Darrell Huff, *How To Lie With Statistics*. Originally published in 1954, with numerous reprintings, this wonderful little volume is still a great introduction.

Edward Tufte, *The Visual Display of Quantitative Information* (1983) and *Envisioning Information* (1990). These volumes have done more to bring the issues of visual information design to the public attention than any others. They should be read by all who need to design or interpret data graphics.

William Cleveland, *The Elements of Graphing Data* (1985) and *Visualizing Data* (1993). These are more technical works by a statistician who draws extensively on studies in human visual perception.

X Marks a Spot...In Our Own Backyard

Sure, it's fiction. But Fox's *The X-Files* usually tries for a "inspired-by-something-real" feeling when it portrays FBI investigations into the supernatural. And the University of Maryland in College Park—our own nexus of weirdness—has figured prominently in the series.

The leading female character, FBI agent Dana Scully (played by actress Gillian Anderson), has been established as a College Park alumna. The series has shot scenes on campus, as in last season's finale when Agent Scully came seeking advice from the Biology Department.

If the producers really want a dose of reality, perhaps they should advise Scully to drop in on the "Science vs. Pseudoscience" course in the University Honors Program.

Impact of Fragment K of Comet Shoemaker-Levy on Jupiter. Original image from Peter McGregor and Mark Allen, ANU 2.3m telescope.

COULD IT HAPPEN HERE?

The Return of Comet Shoemaker-Levy 9

by Neil L. Inglis

In a bitingly sexist *New Yorker* cartoon of the early postwar period, an Eisenhower-era defense contractor fumes at his wife as they leave a Georgetown cocktail party: "It's deterrent, sweetie, not detergent."

As the danger of nuclear war has faded, other doomsday scenarios have taken its place. Until recently, the threat of a major comet impact on Earth has seemed remote and faintly ludicrous. Yet ever since Comet Shoemaker-Levy 9 was smashed to smithereens on the Jovian surface, people have stopped laughing.

Alas, popular misconceptions abound. Ask the average man in the street if he knows what a "comet" is, and he's liable to say: (a) a popular brand of bathroom cleanser; or (b) that lovable golden retriever on ABC's Tuesday night comedy show, *Full House*.

How can the international scientific community hope to combat such ignorance? The answer, it seems, is through public education.

One organization active in such educational efforts is The Planetary Society (65 North Catalina Avenue, Pasadena, CA 91106-2301). The list of The Planetary Society's directors and advisors reads like a "Who's Who" of space science, starting at the top with Carl Sagan, the Society's president. While its board of advisors includes some unusual names (actor Paul Newman and author Diane Ackerman), most of those mentioned have distinguished reputations for scientific achievement (Roald Sagdeev, Sally Ride). Still others, like astrophysicist Dr. Richard Berendzen, have a distinguished reputation for scientific achievement and a few other things as well.

On October 30, 1994, I paid a visit to the Crystal Ballroom at Bethesda's Hyatt Regency hotel to attend "Cosmic Impacts on Earth and Jupiter," a public science program organized by The Planetary Society. The program was presented in cooperation with the 26th Annual Meeting of the Division of Planetary Sciences of the American Astronomical Society. At five dollars per ticket, "Cosmic Impacts" was vastly more affordable than another astronomy symposium held in Crystal City, Virginia, the following month by the National Conference of the American Astronautical Society, for which the registration fees were truly "astronautical!" As a veteran of many moderately-priced CSICOP and Free Inquiry conferences,

I wondered what newly-enrolling AAS members could possibly get for their five hundred and fifteen dollars apiece: a tastier, juicier variety of rubber chicken to chew on, perhaps?

All four speakers at "Cosmic Impacts" gave fluent and persuasive presentations, expressing tricky scientific concepts in terms the intelligent layman could understand. The most entertaining (if also the most jargon-ridden) presentation was given by Dr. Chris Chyba, a planetary scientist currently on staff at the White House Office of Science and Technology Policy. Chyba is a young-ish whiz kid (a bit like George Stephanopoulos, but with more charm). Describing the 10/15 megaton meteor that exploded over Tunguska (Siberia) in 1908, Chyba explained that early Russian research expeditions weren't quick off the mark, and that as a result, our understanding of the Tunguska episode may have lacked the necessary "ground truth" (whatever that may be).

Time was, of course, when news of an asteroid explosion over Russia would have been greeted with howls of satisfaction. Today, however, the Russians are our friends. Chyba gave a hilarious, firsthand account of the joint US/USSR research expedition to Tunguska in 1991. Indescribably cold in winter, an insect-infested morass in summer, Tunguska is a place drawn from the pages of Hell itself. Chyba and his colleagues carried out their fieldwork encrusted in mosquitoes. "Well," I thought, "Siberia may have mosquitoes ... but they don't have chiggers." (Chiggers, by the way, are the tiny red larva of certain mites—the Trombiculidae family, common in the Midwest—whose bite causes horrible itching.) Perhaps Chris Chyba should ask his boss to send a breeding population of Missouri chiggers to Moscow, in much the same way the Chinese Government might donate a panda to the National Zoo. I can see it now: "Chiggers for Siberia!" But I digress...

Contrary to what you might suppose, the trees located directly beneath the 1908 meteor explosion were left standing. This is because the Tunguska meteor never made it to the ground; the shock wave from its explosion traveled straight down, shock-heating the trees underneath and encrusting them with soot, but not knocking them flat. Chyba's forlorn slide projection of "ground zero" in Hiroshima in 1945 illustrated much the same effect. Hurtling to earth, the 30-meter Tunguska meteor built up a wall of intense air pressure in front of itself, which was unable to dissipate naturally around the back of the meteor because of the high speeds involved; when that air pressure exceeded the strength of the meteor, the meteor shattered to calamitous effect.

"Shooting stars" have been magnets for terror and superstition since the dawn of man; and as *Skeptical Eye* readers might imagine, the incident at Tunguska quickly acquired a veil of superstitious legend, in which the Abominable Snowman, UFOs, and antimatter explosions have all made cameo appearances. No paranormal explanations are needed, however, because the hypothesis carefully outlined by Chyba fits the observed data.

What is the likelihood of a cosmic impact of much larger magnitude occurring on Planet Earth in the near future? What calamities would accrue from such an episode? Dr. William Boynton, Professor of Planetary Sciences at the University of Arizona, and Dr. David Morrison, at NASA Ames Research Center, outlined the classic doomsday scenarios — the extinction of species; the Sun's rays blacked out for months on end; nitrogen oxides, created atmospherically by the explosion shock wave, dissolving and lowering the pH of the oceans; 100-foot-high tsunamis inflicting havoc in coastal areas; and—lest we forget—mass crop failure and mass starvation. However, although crops would fail, natural ecosystems would recover. And, as Morrison explained, while inland areas would freeze, the seawater in coastal areas would serve to minimize the temperature reductions resulting from the blackout of the Sun's rays.

Skillful though Morrison's presentation had been, I began to grow skeptical. In my mind, I pictured a wealthy K Street lawyer returning to his home in Potomac after a comet impact, only to find his house, his wife and children, and his pet golden retriever being slooshed away into oblivion by 100-foot-high tsunamis, and then heaving a sigh of relief and saying, "Aaaaaaaaaaaaaa, thank

goodness the anticipated temperature reductions will be minimized by all this clear blue water!"

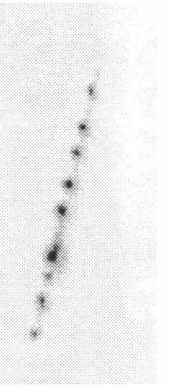
The bulk of Dr. Boynton's presentation concerned a discussion of the Cretaceous/Tertiary (K/T) meteor impact boundary. According to Boynton, much detective work was needed to identify the site of the K/T impact crater. The so-called "ejecta layer" thickens steadily the further south one travels in the United States. The trail eventually led to a Mexican village by name of Chicxulub, a Mayan word which means, fittingly, "tail of the devil." A shock quartz crystal from Chicxulub was subjected to Argon 39/40 dating, which revealed the soothingly satisfying figure of 65 million years. With this analysis, coupled with the fact that the K/T boundary displays high levels of iridium (an element common in meteorites but rare on Planet Earth), Boynton convincingly disposed of the volcanic explanation for the K/T layer once propounded by some scientists.

The keynote speaker of the evening was Dr. Gene Shoemaker, who recounted his role in the discovery of Comet Shoemaker-Levy 9. When I last heard Gene Shoemaker speak, at the Carl Sagan symposium at the end of the comet impact week last July, he came across as perhaps just a tad punchy—natural enough, in light of that exhausting week's events. Here at the "Cosmic Impacts" program, he was in good form. Shoemaker began his talk with ritual acknowledgment to Carolyn, his wife and fellow comet discoverer ("Eagle Eyes"), and a plug for the very wonderful Mount Palomar telescope, still the "fastest gun in the West" after almost sixty years in business. With the wealth of data generated by the comet's impact, much more is now known, for example, about the physics of plume formation on planet surfaces in the aftermath of comet impacts—"it backfires out of the entry tunnel, buoyant as a bubble." Although Shoemaker's verbal account of Shoemaker-Levy 9's discovery and subsequent collision with Jupiter added little new information, his presentation was complemented by slides, photographs and graphics of crystalline beauty and magnificence. My personal favorite was a startlingly vivid portrait of the sequence of nuclei in the comet's tail, forever immortalized as "the string of pearls."

What conclusions are we to draw from all of this? Well, I have now attended two of these Planetary Society comet conferences; perhaps there will be a string of such conferences, rather like the "string of pearls" in the comet's tail. If they maintain their present standards of polish and professionalism, everyone will benefit. Reaching a diverse audience of young and old, male and female, layman and specialist, these public education forums play a vital role in raising public awareness and correcting popular misconceptions. "Above all," as Dr. Shoemaker says, "they will help dissipate the 'giggle factor' surrounding such issues as comet impacts." These issues show remarkable contrasts and parallels with matters of concern to skeptics. While a skeptic will tend to say "This didn't happen to you, and it couldn't happen anywhere else," the comet scientists are telling us this certainly did happen somewhere else, and now it could happen to us! And as members of the human race, we must heed their call.

There are limits, however, to what an organization like The Planetary Society can be expected to accomplish in matters of this kind. It is one thing to discuss sending up nuclear warheads into space to deflect onrushing asteroids. In the social chaos that would break out down here on Earth after any comet impact, with food hoarding, looting, and race riots, astronomers would have little if anything practical to contribute.

Such thoughts of doomsday must have been on the mind of one earnest Planetary Society-type who turned to me when the evening's program was complete, and inquired "What would happen, I wonder, if there were a mass stampede down here and everybody tried to leave this conference hall at once?" (The Crystal Ballroom at the Hyatt Regency is located below ground, and is accessible by elevator only.) I replied: "What you've told me sounds very much like RFK Stadium after a Redskins game." With a worried look on his face, he corrected me: "No sir, it's like any major-league stadium after any NFL game!" And that had a way of putting all the doomsday language into healthy perspective!



Pre-impact image of Shoemaker-Levy 9 taken by the Hubble Space Telescope

Book Reviews

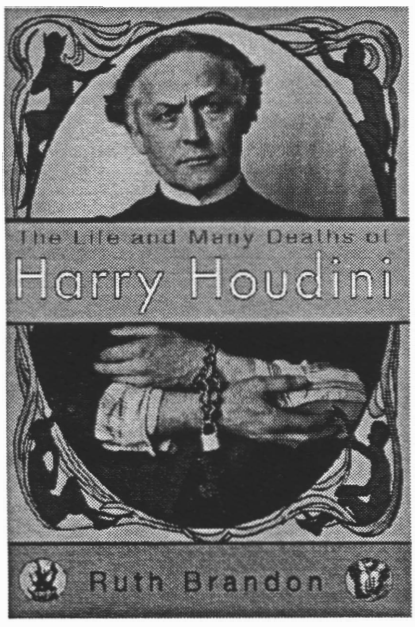
The Life and Many Deaths of Harry Houdini
by Ruth Brandon
Random House, New York, 1993, 335 pages, hardcover, $25.

Review by Jamy Ian Swiss

Was Harry Houdini the greatest magician of all time? This is probably among the top ten questions laymen ask of professional magicians. But the answer is problematic. One can no more make such a definitive statement about magic as about any other profession.

In Houdini's case, prominent magicians who saw him perform have often been quick to deride his conjuring skills. But if fooling the public is at least one measure of a magician, then in some ways, Harry was and still is the greatest. Sixty-eight years beyond his death, Harry continues to effectively deceive not only magicians, not only the public at large, but in particular, researchers and historians who attempt to profile his life in depth. Houdini's latest success is with chronicler Ruth Brandon, whom Harry has fooled as effectively as he did any audience member of his own time.

Ms. Brandon is a British television and print journalist, the author of four volumes of fiction and six works of nonfiction. Her history of spiritualism, *The Spiritualists* (Prometheus, 1984) is a sometimes strident, occasionally mistaken, but nevertheless insightful and highly-readable work, and perhaps served to introduce her to Houdini, whose debunking of mediumistic fraud she discusses. In this biography of Houdini, the author embraces a form often referred to as "psychohistory," in which she attempts to shackle her subject to an analyst's couch—albeit an imaginary one—and to penetrate the mystery of not merely his magic, but of his mind. As ever, our intrepid hero escapes, although perhaps not entirely unscathed.



That he does escape is evident in the title of the book. When Ms. Brandon addresses the subject of Houdini's "Life and Many Deaths," she speaks not entirely in the figurative sense. Her profile is built in large part upon the premise that Harry habitually risked his life throughout his career.

What an utterly quaint notion.

I asked some experts what they thought of Brandon's assumption. James "The Amazing" Randi has been a Houdini biographer as well as an escapologist himself, having performed Houdini's milk can escape, and having escaped from a straitjacket while suspended from a crane over Niagara Falls. He says, "Houdini was too smart to take chances. For example, I have personally examined the milk can and the water torture cell, and it would have been impossible for Houdini to lose his life in either." Penn and Teller have built a formidable portion of their public profiles by seeming to take each other's lives into their hands, and more often than not, Teller is the victim, whether he is being run over by an 18-wheel tractor trailer (driven by Penn), apparently drowning in a tank of water, or currently performing that most legendary and occasionally fatal exploit, the bullet catch. In response to the claim that Houdini legitimately jeopardized his life on a regular basis, Teller flatly states, "He would have been dead at twenty. You can't, night after night, go out and do something that actually has danger involved in it and not sooner or later get hurt. Tightrope walkers get hurt. They fall eventually. People who do crossbow acts get shot. I'm 45. I have all ten fingers, both eyes, and my face is more or less intact. And the reason is that I think we're as careful as Houdini was. Houdini survived to 52, and did not fall to one of his death-defying experiments. He fell more or less to vanity."

Houdini clearly took every professional precaution toward minimizing threats to himself, while exploiting every opportunity to maximize the impression, indeed the illusion, of danger. The ability to maintain these two parallel tracks lies at the heart of conjuring, and therein lay Houdini's creative genius. Certainly there were the exceptional occasions

when danger came a little too close for comfort, as when Harry duplicated a stunt, being performed by an Indian fakir then touring the States, of being buried alive in a coffin for over an hour. Houdini proved that it could be done without the aid of the yogic skills claimed by the fakir, but the experience frightened Harry nonetheless. Were Houdini sincerely courting death, instead of merely flirting with it, he would have repeated his professional interment. Yet he abandoned it immediately upon realizing that it presented genuine risks. Houdini certainly could have capitalized on the aura of danger surrounding the bullet catch—a feat which had resulted in the death of a number of prominent magicians—and yet he never attempted it. Are these the choices of a man entrapped by a compulsive suicide wish, as Ms. Brandon would have us believe?

And so the author's fundamental hypothesis is a fallacy, but this is not the book's only defect. About Houdini's pursuit of mediumistic charlatanism, Ms. Brandon posits that Houdini was never truly a skeptic, and that he desperately hoped for a successful spiritualistic contact around every seance corner. She supports this belief with an excerpt from a letter Harry wrote to Arthur Conan Doyle, in which Houdini commented, after describing numerous spiritualistic frauds he had witnessed, that "...still I want to believe there is such a thing." Surely this is paltry support for the idea that Houdini was so internally conflicted that he wished for a reality other than the one he so passionately and rationally embraced. It is one thing to say that one keeps a mind open to other possibilities—any rationalist must always be open to the potential of new discovery. It is quite another to suggest that this frustrated wish was the engine that drove Houdini's spiritualistic exploits. Harry was courting Doyle's friendship, and at the same time was keenly aware that Doyle was a passionate believer in spirit phenomena. Would Harry have chosen to merely insult and offend his friend directly? No, he would have stated his open-mindedness in the hope that they could continue their amicable association—a hope that, as it turned out, was ultimately doomed. However, one sentence in a letter laden with an obvious personal agenda cannot fairly characterize Houdini's true motives. There is no reason to second guess Harry's body of work on the subject, both in word and deed, nor to even assume that he needed to find a supernatural success in order to achieve his own personal peace of mind. It is one thing to acknowledge that Harry would have been delighted to have contacted his mother's spirit. That he continued to hope for success at every turn, that his misery was compounded by every "failure," is mere speculation, and beyond belief.

Ms. Brandon appears not merely satisfied by speculation; she seems to delight in it. That Harry regularly endangered his own life, or that he was driven by the pressing need to find truth in spiritualism—these are far from the most fantastic claims of her book. On page 52 we learn that the author's "...own guess...is that Houdini may have been impotent." The evidence? Harry's "...effusive daily—sometimes thrice-daily—outpouring of love-declarations..." to his wife, along with the fact of his and Bess Houdini's childlessness.

And under the heading of speculation, there is much more. Apparently it makes sense for Jews to become magicians, because "Do not conjuring tricks of one sort or another lie at the very roots of Jewish history?" (No wonder gospel magic is so awful. It's practitioners are bucking a trend.) We learn that "Houdini's whole act could be seen as an expression of anger..." We are told that in escaping from jails, Houdini "...identified deeply with the prisoners who had languished, powerless, in those very places; and the worse the crime—the more it placed its perpetrator outside the bounds of society—the greater its fascination for Houdini." Apparently, anyone who has read or watched "The Silence of the Lambs" is operating from a deep-seated psychological dysfunction. And we find, repeated from psychiatrist Bernard Meyer's own ludicrous Houdini psychohistory, *Houdini: A Mind in Chains* (E.P. Dutton & Co., 1976), that "... the origin of Houdini's lifelong inability to sleep [was] brought on by the consciousness that his parents were waiting for the children to go to sleep before they could indulge in sex." It's a wonder any of us ever gets any sleep at all.

The Meyer book is not the only questionable source to which Ms. Brandon turns in search of guidance. Mere pages into "Life and Many Deaths," I found myself reminded of the

"When the apparently trivial is endowed with the weight of emotion Houdini brought to his act, it is no longer trivial; and nor, therefore, is the performer."

work of Joseph Campbell, wherein symbology veers out of control; nothing is ever as it seems, everything means something else, and eventually everything can mean anything at all. I turned to investigate Ms. Brandon's bibliography, where—lo and behold—I discovered two of Mr. Campbell's titles, along with works by Erich Fromm and Carl Jung (apparently Dr. Meyer provides sufficient Freudian input so as to render Freud's inclusion in the bibliography unnecessary). As with Campbell, *et al*, Ms. Brandon's work is appealing and seductive at times, until one drags one's self out of the murky pages into the light of day, shakes off the cobwebs of mythological interpretation, and realizes that "sometimes a cigar is just a cigar"—and sometimes a magician is just trying to make a buck. That is a useful motivation to examine in considering Houdini's life.

One of ten children born of a poor, immigrant family, Houdini set out to be that family's personal savior, and indeed succeeded in this genuine pursuit of heroic ideals in the only way he knew how. Lacking formal education, he withstood the hardships of show business in the hope that its potential rewards would eventually be his. His relentless pursuit of success—personal, professional, and financial—was eventually won. His feats became ever more spectacular because he needed to sell tickets. His stalking of seance trickery, endowed by expertise and moral perspective, was fueled as well by the need to find new ways to produce fresh publicity and fill more theater seats even as he was aging beyond bridge jumps and suspended straitjacket escapes. Perhaps some mysteries seem impenetrable because there is no mystery to solve in the first place.

We are repeatedly told that Houdini and his theatrical successes were essentially mysteries even to himself. This is perhaps the most glaring error of historical revisionism; namely, to judge the past by the standards and assumptions of the present—and to assume that the inhabitants of the past are invariably inarticulate dullards when compared to our clever, contemporary selves. Could it possibly be that Houdini, despite a lifetime of tapping directly into the well of public consciousness, was completely unaware of the currents which swept his audience up and carried him to the heights of success? The author quotes from a letter from Europe in which Houdini comments that in parts of Europe "...the Police are all Mighty, and I am the first man that has ever dared them, that is my success." Yet Ms. Brandon maintains that Harry was not sufficiently sophisticated, about himself or others or the world at large, to recognize the reasons for his own appeal. Houdini habitually allowed himself to be strip-searched to prove that he could not conceal keys and lock-picking devices, and his publicity photos often depicted him clad in little more than chains and other constraints. Could he have been entirely unaware of the provocative nature of such frequent public nudity? Could he have been blind to the mechanisms, which he consistently tripped so skillfully, that drove his audience to a worshipful frenzy? It is a far cry—but apparently not too far for Ms. Brandon—between autodidact and autistic savant.

Such questionable assumptions abound throughout. We are told that "At least one school of psychoanalytic thought sees birth, that earliest of all separations, as the causation of all the neuroses." The author fails to tell us her stand on this particular curriculum, but thanks for sharing. And once the author is on a roll, there is little stopping her. Consider this excerpt: "There were other possible delights. It seems probable that Houdini took a sexual pleasure in bondage. And near-asphyxiation can reputedly induce exquisite pleasure." Possible...probably...can reputedly. Well, perhaps, perchance...please, when do we get to the facts?

These glaring flaws almost overwhelm the multitude of smaller errors that drift throughout Ms. Brandon's narrative. Despite the fact that I am given to understand that the author corrected a number of historical inaccuracies in this American edition following the book's earlier publication in England, errors still remain. Houdini never jumped off the Golden Gate Bridge (and a glance at the height of that structure would be enough to establish this fact). Houdini did not introduce

the Water Torture Cell at Hammerstein's Roof Garden in New York City. On the subject of conjuring, the author mis-labels classic magic tricks, and confuses the methods of others. She repeatedly refers to the idea that Houdini's bowlegged stance was an essential aid to his escapology skills, as if there could never be a pigeon-toed escape artist. Certainly the author had the opportunity to consult with countless authorities, many of whom she names in the acknowledgments, who could have corrected these errors. That she failed to do so further calls her scholarship into question. She is not a conjuror, but as well, she is not a psychiatrist, and her lack of savvy in both these areas leaves very little solid ground upon which to construct her account.

As I write this, more than a dozen Houdini-related volumes sit on nearby shelves. Most are flawed in some, if not many, ways. The Meyer book is laughable in its basic theses, but there is interesting historical material revealed within. Noted magic historian, the late Milbourne Christopher, is openly worshipful in *Houdini: The Untold Story* (1969), but this volume endures as perhaps the most significant to date. *Houdini, His Life Story* by Harold Kellock (1928) is decidedly colored by Bess's agenda, but remains indelibly charming. And Harry's own written legacy, including *A Magician Among the Spirits* (1924), despite its sometimes tortured prose still makes for fascinating reading.

Similarly, the book at hand offers some valuable insights. When the author turns to the historical context—as in her analysis of the evolution of the relationship between theatrical performers and audiences—the device, while often inelegantly executed, is nevertheless useful and intriguing. Other interesting subjects briefly touched upon include the birth of motion pictures, and a delightfully skeptical view of Old Testament magic. And when the author turns her eye to Bess and the subject of the Houdini marriage, she offers a cogent perspective that has heretofore been given little consideration, at least in the written record; this is the strongest element of the book. There is new historical material to be found here as well, especially from Houdini correspondence in private collections, along with material from the Library of Congress, that has not previously been widely circulated. There are some excellent photographs included. And in general, the book is entertaining, if lacking in cohesive structure. But the flaws are so pervasive, and touch upon so many subjects and aspects of the tale, that ultimately the entire work must be called into question. The author begins with a premise, indeed a prejudice one suspects, and having laid that template upon a life, allows only that which fits the premise to poke through, obscuring all else.

It is not news, nor can one deny, that Houdini was inordinately attached to his mother; that he was possessed of an insufferably monstrous ego; that he was less than a master conjuror; or that he was a live entertainer who, bereft of humor or irony, could not begin to compete on a purely artistic level with some of the great magicians of the vaudeville era. It would be easy, and perhaps interesting, to examine these limitations, free of the weight of psycho-babble and pseudo-analysis with which the author weighs down her account. There is even a hint of mean-spiritedness as she sets upon the task of taking her subject down a notch, with her repeated focus on Houdini's twisted syntax (apparently confusing grammatical skills with intelligence) or when she suggests that "...had he possessed an iota of creative imagination..." then perhaps his efforts in motion pictures would not have suffered from the (hardly undetectable) failings which eventually frustrated his film career. While the author wisely dismisses the oft-repeated suggestion that Houdini's penchant for publicity accounted entirely for his success, nevertheless, she seems to want to hold anyone and anything responsible for that success other than the man himself and his own abilities. But if Harry Houdini had not "possessed an iota of creative imagination," then I submit we would not be discussing him this very day.

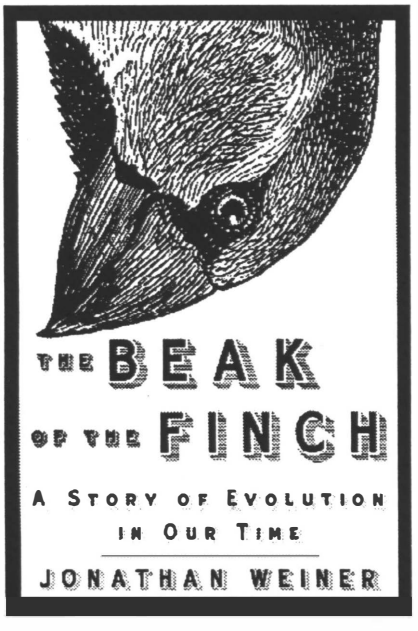
Ruth Brandon provides excerpts from a letter in which Houdini recounts a verbal contest which he stumbled into, during the course of a performance, against the then world heavyweight boxing champion, Jess Willard. At the climax of the encounter, Houdini landed the final verbal blow by thundering, "I will be Harry Houdini when you are not the heavyweight champion of the world." When this book is a minor footnote to history and legend, Harry Houdini will still be Harry Houdini.

The Beak of the Finch: A Story of Evolution in Our Time
by Jonathan Weiner
Alfred A. Knopf, New York, 1994, 332 pages, hardcover, $25.

Review by Rob Pike

A saw used against the Creationists goes, "Evolution is a fact; natural selection is a theory." The saying is all too accurate, because, as many hardened evolutionists critical of Darwin have noted, although the evidence for evolution may be overwhelming, the evidence for natural selection is really rather scanty; even leaders of the field come perilously close to assuming their conclusions when they present their arguments. Where are the experiments? Where are the numbers? How could there even be experiments, when the pace of evolution is measured in millennia, even eons? Science without experiment is just speculation, so the theory of natural selection is, or was, an undefended theory, a hypothesis at best.

In the center of the Galapagos, Darwin's own islands, is a tiny, isolated volcanic crater jutting from the water called Daphne Major. On it live a couple of thousand finches in a good year, a few hundred in a bad year, mostly of two species. Since the 1970's, Peter and Rosemary Grant and generations of their students have been patiently measuring and monitoring the finches on Daphne. They know their subjects so well that they can recognize every individual finch on the island by sight, and they have records that read like the Book of Numbers, saying who begat whom for generations. They have learned, among other things, that who begat whom depends in large part on the weather.



In 1977, Peter Boag was in charge of the census taking on the island, in preparation for an idea for his Ph.D. thesis. He intended to test the balance between nature and nurture by swapping eggs between nests of birds with relatively large and small beaks, to see if he could influence the offspring's beak size by changing who reared it. But that research was never completed, because in 1978 the worst drought in decades hit the Galapagos and Boag watched his subjects die by the hundreds. Being seedeaters, the finches depended on an annual growth season among the cacti and other plants to replenish their food. But in 1978, they instead needed to live on the pickings left on the ground from the year before. Naturally, the easiest seeds to eat were consumed first, but as the dry months wore on most of what was left were larger, harder seeds of some of the cacti, much like unopened pistachios left at the bottom of the bowl at a party. Finches with larger beaks were more successful at opening these seeds, and therefore survived more often than smaller-beaked finches. (Coincidentally, this meant males outlived females by a wide margin.) Eighty percent of the birds died. A few pairs of one species mated early, but none of their fledglings survived. No members of the other species, the one Boag was interested in, mated at all.

After the drought, the average finch on the island was five percent larger than before the drought. The average beak changed from 9.42 millimeters deep to 9.96 millimeters. Natural selection, in one season, had added half a millimeter to the beaks of the finches. Then the rains returned, and the finches bred, and their full-grown offspring had beaks on average half a millimeter larger than those before the drought. Natural selection had resulted in an evolutionary step. Darwin's theory had survived its first experimental test.

In *The Beak of the Finch*, Jonathan Weiner tells the story of the Grants and their (Darwin's) finches in clear and elegant prose.

As Weiner explains, there is a delicious irony here: the speciation of the Galapagos finches was so mysterious to Darwin that he left them out of his *Origin of Species* entirely. But there is also an explanation, because Darwin saw the finches only briefly, after the normal rains of that year, when food was plentiful and the different beaks of the finches had little bearing on the birds' fitness. It is only when the pressure of selection becomes acute, as in the drought of 1978, that the pace of evolution becomes visible. Darwin's inexplicable finches became the first real test of his theory, which is not only fitting but an example of science working at its best.

As the years went by, the Grants studied more aspects of the finches, developed better models of the inheritance of the birds' features, and can now predict with astonishing precision the structure of the population from year to year. Darwin now has his numbers, too.

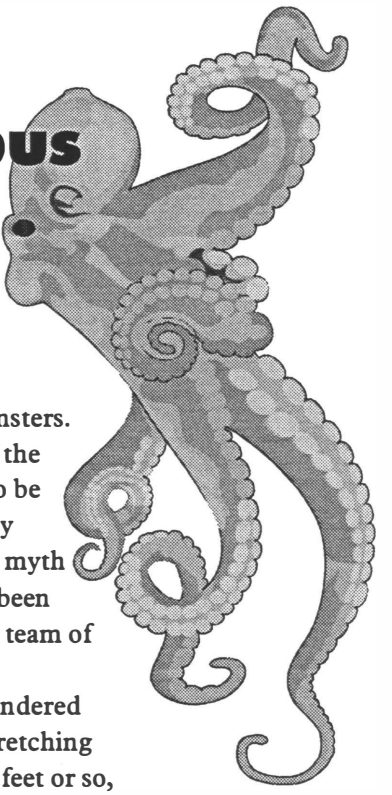
The Beak of the Finch is as good as science writing gets. Stephen Jay Gould has always been the standard bearer for popular writing about evolution, but I find him windy and insistent. Weiner gets the tone and the style right. The prose is effortless, and he lets the case present itself. The story is too good, too rich, to be told any other way.

Half a millimeter can be the difference between life and death for a finch. It's a tiny distance, but it can be measured, and it's enough to show that Darwin was, as we all believed, absolutely right. *The Origin of Species* is perhaps the most important book in the history of science, and *The Beak of the Finch* does it justice.

"Only a Theory"

The April 7, 1995 issue of Science *reports that the state of Alabama has recently revised its textbook guidelines for grades K-12. The guidelines, which will apply to books to be used next fall, state that "explanations of the origins of life and major groups of plants and animals, including humans, shall be treated as theory and not as fact."*

Giant Octopus Disappears With Nessie



It's been a bad year for sea monsters. Last year the most famous photo of the Loch Ness Monster was admitted to be a hoax by the man who faked the toy model. And now another enduring myth of the deep, the giant octopus, has been dealt a serious credibility blow by a team of University of Maryland biologists.

Cryptozoologists have long wondered whether sea legends of octopuses stretching hundreds of feet, rather than thirty feet or so, could have any basis in fact. The few tangible pieces of evidence have been the 150-foot fleshy remains beached near St. Augustine, Florida in 1896, and a similar mess known as Bermuda Bob which appeared in 1988. Both events were well-documented and puzzling to marine biologists. The more recent blob matched descriptions of the St. Augustine tissue: white, tough, rubbery and lacking internal structure. Reports from St. Augustine described a tentacle-like shape which lent credence to the giant octopus speculation.

Fortunately, tissue samples from both mysteries were preserved. According to the *Washington Post* (April 2, 1995), Eugenie Clark, an esteemed University of Maryland marine zoologist who also teaches "Sharks and Sea Monsters" for the Honors Program, organized an effort to analyze the samples. Sidney K. Pierce, professor of zoology in College Park, led the study. Although microscopic analysis indicated that both samples were pure collagen (connective tissue), amino acids showed differences. The 19th century sample contained amino acids typical of a whale or other marine mammal, while the Bermuda sample clearly came from a cold-blooded creature such as a shark or a ray. The analyses are reported in the April 1995, issue of *Biological Bulletin*, published by the Marine Biological Laboratory, Woods Hole, Massachusetts.

Watchful Eye

The NCAS Media Watch

The Human Potential Foundation (HPF) "Project and Program Summary," June 1994, under the heading, "Center for Intercultural Medical Exchange":

"Qi Gong. The Foundation has a joint agreement with the Chinese Academy of Somatic Science in Beijing to demonstrate and research in the United States the use of external qi gong in accelerated bone healing. The protocol to be used has been validated and is in clinical use in China. The Academy will provide highly qualified qi gong masters for this comparative study of Eastern and Western medical techniques."

As a practitioner of traditional Chinese boxing (and a skeptic), I am familiar with chi gung (Magnetic Girl) tricks and the "motivation salesmen" that push such things. HPF seems to be another "Newage" groupie. Alas ... remember that a walk through the ocean of most souls would scarcely get your feet wet! I have collected a small number of chi gung tricks and am always looking for more. If any other members have a similar collection, I'd be interested in getting in touch with them.

—Steven J. Goodson, Silver Spring, MD

also sent in by Steven Goodson:

"Say What?"* Jeannette R. Scollard, Entrepreneur, November 1994. *An acerbic look at the latest trend in corporate pop-psychology blather in which, according to the author, "many words are being used to say very little. This vacuous vocabulary is the hallmark of motivational consultants ... these professional 'motivators' are at best diverting and innocuous; at worst, irrelevant and distracting."

Scollard compiled a humorous "synopsis of current poppycock" (see excerpt below). She advises choosing one word from each category, and "you'll be able to obfuscate as well as the best pundit ... your bankers will be impressed, and your corporate clients will assume you have an MBA."

VERBS	ADJECTIVES	NOUNS
Visualize	Cultural	Mosaic
Empower	Gender-based	Paradigm
Strategize	Implementor	Enhancement

"A No-Touch Therapy: Critics Attack a Mystical Hand-Motion Treatment Spreading Through Nursing Schools and Hospitals,"* Leon Jaroff, Time, November 21, 1994. *A highly-skeptical, well-researched piece on "therapeutic touch," or "TT," and its rise in popularity.

"Health funding is in crisis," says Kathy Butler, a Melbourne geneticist concerned about the spread of TT in Australia. "Surely valuable nursing hours are better used with scientifically proven, genuinely useful nursing methods." Other skeptics quoted include William Jarvis of the National Council Against Health Fraud and Béla Schieber, president of Rocky Mountain Skeptics in Boulder, Colorado.

Neil Inglis brought this article to the Eye's *attention.* *See also the special letter to NCAS from the Rocky Mountain Skeptics on page 24.*

"Homeopathy Effective in Study of Asthmatics,"* Rick Weiss, Washington Post, Health Section, December 13, 1994. *A synopsis of a new double-blind study of 24 asthma patients designed by David Reilly, professor of medicine at the University of Glasgow, and his colleagues. "The research adds to a small but growing body of evidence that there may indeed be something to homeopathy," says Reilly. "Larger studies should help settle the question of homeopathy's real value."

For further reading, the study was described in detail in a December, 1994, issue of the British medical journal, *The Lancet.* Skeptics should expect to hear about this study for a long time to come. It already figures prominently in discussions of homeopathy, pro and con, on the Internet and in print.

"Stemming Your Ills: The Skeptic's Guide to Herbal Medicine," **Lamar Graham, Men's Journal, February 1995.** ***A review of herbal concoctions and their purported "benefits."***

The story's headline is deceptive. This one-sided piece fails on all counts. Not only is it not skeptical; it's also anti-science. "Herbs fit in with the concept of prevention and wellness," says Rob McCaleb, an ethnobotanist and president of the Herb Research Foundation in Colorado. "They're health-building, health-promoting; they help us to slowly build the body's natural defenses rather than try to destroy some pathogen once it's arisen." The author also draws inaccurate and misleading correlations between herbal medicine and plant-based prescription drugs.

and a thought for NCAS members...

"It's Not What You Do That Counts, It's What You Belong To," **Bruce Watson, Smithsonian Magazine, April 1995.**

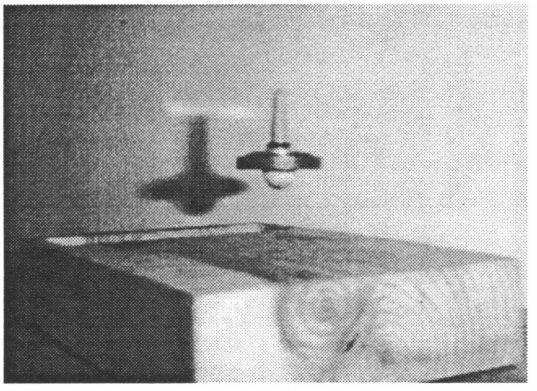
"Even aliens can be joiners, thanks to [Otomar Tllak's] Society of Earthbound Extraterrestrials (SEE). Most of SEE's 500-plus members are merely UFO watchers, but some claim to be UFO pilots—'Star People,' with an accelerated body temperature and extra vertebrae. 'We believe them because, after all, we are a nondenominational extraterrestrial organization,' Tllak says."

The article goes on to point out that dowsers, werewolf researchers, dolphin communicators, and flat-earthers all have their own societies and newsletters. Skeptics were conspicuously absent in the piece.

Last November *The Washington Post* inaugurated a monthly section devoted to learning, with an emphasis on science and critical thinking. Edited by Boyce Rensberger, who was recognized for excellence in science reporting in 1986 by CSICOP, "Horizon: The Learning Section" features a series of articles on good thinking skills and do-try-this-at-home experiments.

Skeptics everywhere should applaud this effort. Few enough newspapers have a regular science section; Horizon goes even further by putting the focus as much on the process of thinking and fact-checking, as on the facts themselves. We offer our compliments and thanks to Boyce Rensberger and the *Post*.

Skeptic Demonstrates Levitation!



The picture here is for real— no hidden wires, mirrors, or batteries, and no psychokinesis either. NCAS doesn't do product endorsements, but if we can make fun of Life Force Disks, we ought to be able to tell you about something that's genuinely cool.

This little toy is sold under the name Levitron at the Nature Company. It's a small, finger-spun top that will twirl happily a couple of inches above a wooden base with no visible means of support. Yup, it just hangs there, not connected to anything. It does take some practice, but here at NCAS headquarters we've had spins that kept it floating for about 3 minutes.

Maybe I'm easily impressed, but it looks more like real magic than anything I've played with before. It shows how cool real science can be.

What's going on? The best part is that the science is all simple. The principles are all the ones you probably learned in grade school, combined in an unexpected way. I demonstrated the toy in my "Science vs. Pseudoscience" class at the University of Maryland and gave my students the following assignment: (1) describe what you saw, (2) propose an explanation, and (3) tell how you'd test that explanation. Only one out of twenty put forward a complete, succinct explanation, although most had part of the answer. Send in your thoughts and we'll publish the best in the next issue.

—Chip Denman

Wonder Bra?

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It's EASY! Drop the Life Force Disk over your body daily to maintain 100% Life Force. **It's AMAZING!** At maximum Life Force, you become more YOU! With greater clarity, sense of well-being, "get up and go" and stamina, your efforts are 400,000 times more effective. **It's FUN!** Many feel the electro-magnetic vortex produced by the Disk and see results in their lives immediately. **It's INSPIRING!** The Life Force Disk is attuned to the Universe using Wave Transformation Symbols (like symbol below). With meanings beautiful and profound, these symbols produce changes according to your Divine Blueprint — your individualized map for creating Heaven On Earth. **It's DIVINE!** Part of the Universal Language of Light, these symbols are newly available on Earth under St. Germain.

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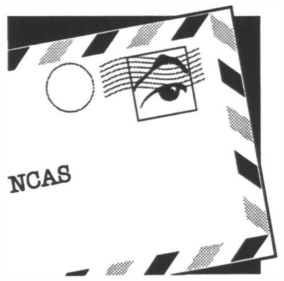
(And note the modesty of the claims in that there is no mention made as to the rather obvious breast-enhancing capabilities, as shown by the user demo!)

—Leo H. Elliot, Charlottesville, VA

This gizmo promises "At maximum Life Force, you become more YOU!...your efforts are 400,000 times more effective....Many feel the electro-magnetic vortex produced by the Disk and see results in their lives immediately." We call it a fashion don't.

Have you found any articles, broadcasts, advertising or other weird science which ring your skeptic's alarm? Share it with the Eye, and we'll feature it here.

Letters



I liked Mike Epstein's review of Joe Nickell's book, *Looking for a Miracle, Weeping Icons, Relics, Stigmata, Visions & Healing Cures.* He added a lot through his expertise. It is important that the natural explanations we skeptics give be sound. That we can get blood when we say we will, and not water. However, for me, miracles are not a scientific phenomenon. In science, natural cause is an assumption; it can never be disproved. Look at it this way: at what point do we stop searching for the real natural causes of cancer, schizophrenia, or Alzheimer's? And, at what point do we say God has caused them and declare a miracle? In the past, we have tried to find their causes many times and still not succeeded. But we have never thrown up our hands. It is true science does not look for causes where it will have a hard time finding them. With quanta, for instance, where you cannot measure velocity and position at the same time. Or with gravity, where the force is too weak except on a planetary scale. Then it is not useful to make an assumption of cause, and best to be satisfied with describing the phenomenon. For instance, to describe about gravity that its force decreases by the square of the distance. Yet, there is no scientific reason why, once we assume a natural cause, we should not throw up our hands and assume a miracle. This is true even for stigmata on a "holy" person, weeping "religious" icons, or a spring arising where someone had a vision of the Virgin Mary. But, in these cases, there is a religious reason for throwing up our hands: it upholds the religious doctrine of miracles. Thus, miracles are not really a scientific concept; they are a religious concept. They should be left to the Pope and Billy Graham, and not the Jet Propulsion Laboratory or STURP. Anyway, that is the way I see miracles.

Richard Dengrove
Alexandria, VA

Special letter from the Rocky Mountain Skeptics

As you may know by now, the Rocky Mountain Skeptics have been featured in many publications, including the *Time* article [see "Watchful Eye" on page 20—ed.], for leading the charge in exposing "Therapeutic Touch" (TT). What began as our local effort to expose TT in Colorado institutions for the anti-science that it is, soon took on an international life of its own.

We would like to engage your organization in contributing to the worthwhile effort of exposing what amounts to an institutionalized declaration of war against science. If you think this is an exaggeration, read what Patricia Moccia, Chief Executive Officer of the National League for Nursing (the major accrediting agency for nursing schools) wrote in *Time* in response to the original article:

> *"The National League for Nursing, mentioned in your story, remains committed to supporting those who explore alternatives to the traditional approaches of Western medicine, which, for all its science, continues to make profits by assaulting the mind, body and spirit of patients. There is indeed more in the struggles around teaching Therapeutic Touch to nurses than meets the eye....It's the fear of losing control on the part of those who have personal and professional investments in health care's status quo."*

What we propose is that your organization survey hospitals and nursing schools to determine the extent TT has been institutionalized. If you think you can help with this, please contact me as we are already working with skeptics in England, Australia and Canada.

Also, could you please announce to your members the formation of a new group that we hope can eventually become independent and dedicated to dealing with nursing issues. The group is Nurses For Rational Therapies. At this time, their address is the same as ours. We hope to find nursing professionals who can become national leaders promoting sanity in this important area. Please write or call me at the above numbers to discuss further any questions you may have.

Best wishes,
Béla Scheiber
President

The Rocky Mountain Skeptics have been leaders in bringing skeptical scrutiny to TT. Anyone who would like to be involved in an NCAS effort to assist, please contact Chip Denman at the NCAS address. The Rocky Mountain Skeptics can be reached c/o Béla Scheiber, Rocky Mountain Skeptics, Box 7277, Boulder, Colorado 80306, email: rescentral@aol.com.

Check the mailing label for your membership date ... a renewal form is on page 23

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