

The REALL News*

"It's a very dangerous thing to believe in nonsense." -- James Randi

Volume 4 Issue 2 February 1996

Special 3rd Anniversary Issue

What if I Weren't a Skeptic?

by David Bloomberg

The title of this article may seem to be a bit of an odd question. However, let me assure you that I'm not going to go into a deep philosophical discussion here, just a short examination of the way both skeptics and non-skeptics think.

Let me first say that I consider it an honor to be called a "skeptic." I have seen it used as an implied insult by some, but to me it says that I am a critical thinker, and certainly thinking cannot be a bad thing (unless you're a failed school board candidate, but that's another matter [see "REALLity Check" in Vol. 3, #10 and "REALLity Checklist," this issue])

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But, getting back to the title of this article, what if I weren't a skeptic? This is, in many ways, a difficult question to answer. It is kind of like Michael Jordan asking what if he were short, or a politician asking what if he were always truthful. I am a skeptic, Michael Jordan is rather tall, and politicians, well, never mind. For the remainder of this article, though, I'm going to consider a situation which actually happened to me and how I might have viewed it were I not a skeptic.

About a year and half ago, I strained or sprained (I never did figure out exactly which) my right neck/shoulder muscle. It was incredibly painful, and when it happened I felt like somebody was sticking an ice pick into my neck. When it didn't get better after a short while, I went to a doctor, who put me on anti-inflammatory medication and sent me to a physical therapist.

I went to the physical therapist regularly for several months, until we determined that continued treatment wouldn't get me any further. I kept taking the medication, which generally helped keep the pain down, for over a year. Finally, I caught the flu and had to stop taking the medication, which had to be taken with food and could add to stomach upset.

To my surprise, I wasn't immediately hit by a wave of stabbing pain. I had some aches for a day or two, but then it subsided back to the same levels that I had while I'd been taking the medication. So, I'd been taking the medication for a while and it hadn't really been helping.

But what does this do with being skeptical? This is where hypotheticals come into play. While I had my neck pain, I was urged by people who didn't know me all that well to try numerous different alternative "therapies." What if I weren't a skeptic? What if I had tried one of these unproven methods? What would I have found?

I would likely have found that after a day or two off the medicine, the pain subsided back to the level it was at while I was on the medicine. If I weren't a skeptic, I might have seen this correlation as cause and effect. Cause: I went to an alternative practitioner. Effect: The pain went away, just like when I'd been using the medicine.

In fact, because I didn't try one of these methods, I know that the pain subsided anyway. But I wouldn't have known that under the hypothetical scenario above.

So, let me put myself into the shoes of somebody who is not a skeptic. This certainly doesn't mean they're stupid, but perhaps they don't use critical thinking in all aspects of their lives. I think this is one reason "alternative medicine" survives and, indeed, thrives. Some symptoms simply go away as the body heals. If a person gets a worthless treatment, such as homeopathy, while the body is healing, it may still seem like that treatment did some good, as the person confuses correlation with causation.

Considering that I frequently see such confusion, perhaps it is one of the main problems skeptics must face. Consider dowsing: Did the stick point down because there was water there, or is it merely that there is likely to be water just about anywhere, if you dig far enough, and so there is a correlation instead?

I'm sure there are numerous such examples, and perhaps I'll keep an eye on them in my life and make this into an occasional series. Certainly, if any readers have stories of their own, please send them in and we'll relate them to the rest of REALL.

The Sacrament of Confirmation

by Bob Ladendorf

Speaking to a standing-room only crowd of more than 50 people at the February REALL meeting, Prof. Charles Schweighauser lambasted astrology and alleged UFO evidence based on principles of physics and astronomy.

Citing various scientific reasons for disproving astrology, Schweighauser asserted that a human desire to know what the future holds and outright charlatanism motivated by money are the two main reasons for its continuing appeal. As for UFOs, he pointed out the high improbability of any physical visitations by aliens based on the vast distances to travel, extreme mass of fuel to launch a spacecraft at the speed of light, and the friction of atoms that would tear any craft apart. More

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"We're not going anywhere," he said, "and nobody's coming to visit us, given the laws of physics as we currently understand them."

Schweighauser, a professor of astronomy and physics at the University of Illinois at Springfield and well-known for his "Star Parties" — lectures on astronomy and telescope viewing for the public, spoke about the nature of science and non-science, or nonsense. An opera lover and a voracious reader (3,000 technical abstract pages monthly), Schweighauser brought an enthusiasm for science and its methods to the meeting held at the university there.

Starting off his two-part talk on the nature of science, Schweighauser emphasized scientific methodology — that "scientific perceptions of the world ... are the products of the methods we use." Scientists find only what they look for in nature. The second point about scientific methodology is that "the final test of a concept is empirical. Science ultimately

has to be concerned with the measurable we have to be able to gather data."

Science can't prove that something never existed or ever will, he said. "Put it another way, if you will allow me to use a well-worn aphorism, 'absence of evidence is not evidence of absence.' " Consequently, science cannot prove that alien ships don't exist.

Schweighauser emphasized that science is continually revising its hypotheses and theories based on new observations, a view espoused by Karl Popper who asserted that humans need to make mistakes as quick as possible in order to perfect their ideas and theories.

Indicating that falsifiability is important for evaluating scientific concepts, Schweighauser pointed out that certain concepts, such as Ptolemaic geocentrism, that have been made into doctrines can have detrimental effects on human activities. In addition, the necessity for the repeatability of experiments and observations is paramount. "Science proceeds by comparison of data and facts," he said, " or as Voltaire observed in 1760: 'In the case of news, we should always wait for the sacrament of confirmation.'"

In the second part of his talk, Schweighauser listed the problems with astrology: predictions are vague, ill-defined; zodiac doesn't correspond to anything in the natural world; constellations no longer aligned with the sun's location; negligible effects of solar or planetary influences ["The gravitational effect of Mars on a newborn baby is less than the gravitational effects of the doctor who is delivering the baby."]; and the discovery of new planets in the past 200 years, well after the origins of astrology.

In an instructive and entertaining demonstration of the third point, Schweighauser showed with a special globe and gyroscope how the earth's "wobble" has changed the alignment of the sun with the constellations in the zodiac — thus showing that the "system the astrologers use today is out of whack with what is going on in the real universe."

After discussing the appeal of astrology, he cast doubt on the existence of alien visitations to earth based on the fact that the distances between our solar system and the nearest star is immense. A spacecraft travelling at 10,000 mph (similar to the Voyager 1 and 2 speed) to Alpha Centauri would take 300,000 years, enough time for 10,000 generations of humans to have evolved! Traveling at the speed of light (a much faster way to get there) presents its own problems, he added. It would take an amount of fuel greater than the mass of earth just to launch the spacecraft, and an even greater mass to brake it! Even atoms striking a craft at that speed would blow it apart.

Following a question-and-answer period, the audience gave Prof. Schweighauser a round of applause. Throughout his talk, he had talked of the abilities of the human mind.

A fitting summary for his night of sharing knowledge and wisdom with REALL can be found back in the first part of his speech: "The important point to remember is that scientific theories and laws are human constructs. They are not sacred, they are not doctrine; they are the products of our minds."