

# BREAKING THROUGH EDITORIAL



## Finding Awe: At MIT, When “Being Taken for a Ride,” and with Our “Scars”

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On August 18, 2007, I gave a lecture about my cold fusion theory at the Lattice-Assisted Nuclear Reactions in Deuterated Metals Colloquium, organized by Mitchell Swartz and Peter Hagelstein and held on the first floor of the building where the MIT Electrical Engineering Department is located. (See brief summary on p. 20.) At one point during my presentation, I explained, “Recently, I began voice lessons. During my last voice lesson, my teacher Jon Lackey reminded me that in order to sing well, I had to find my ‘awe.’” Literally, he was referring to singing the word “awe,” in such a way that the word sung correctly (and felt in a special way, as when lowercase “awe” becomes uppercase “AWE”) involves a natural form of resonance that can occur when air circulates through the throat, voice box, and lungs, in a gentle but powerful way.

I then began to follow the procedure that can make this possible. After taking a deep breath, you should maintain a constant posture, in which air flows at a constant but slow velocity from the force that you exert below your waist, driven by tension provided by the muscles in your diaphragm. Do this with as little obstruction as possible along the path where the air flows through your body, by maintaining your upper torso in a motionless position without moving your upper body, and keeping your stomach firm and inflated. Initially, begin by slowly creating an “s” through your teeth and build the diaphragm pressure rather than allowing it to diminish—and when a strong presence is felt in the body, open the mouth quickly to an “awe” shape while maintaining the diaphragm pressure throughout the holding of a musical tone singing “awe.”

When I attempted this process, I built up the pressure and my “awe” did appear out of, seemingly, nowhere—almost if by magic. But almost as soon as I did this, I also stopped, suddenly, and said, “a lattice, in perfect resonance, also finds its awe in how it can accelerate, absorb momentum, and transfer momentum, in a way that is similar to the way my ‘awe’ resonates.”

In a literal sense, my voice teacher taught me that by finding my awe, I would (through a harmony of motion involving how and where I breathe) be able to allow my breath to move through my body to create a form of resonance in which my voice would project the word “awe” in an extremely powerful way that I would not be able to do without the associated harmony of the other breathing factors.

In a similar way, during my lecture at MIT I suggested that small variations in the way deuterons move, over time, in palladium-deuteride could also create similar forms of resonance. In both forms of resonance, small amounts of momentum are added to waves at regular intervals; constructively and with time, the momentum from this process increases the magnitude of the force that the waves can impart if they collide with something.

Historically, the word “awe” has referred to something powerful that possibly is dreaded, or feared. The apparent coincidence that the word “awe” could also relate to something powerful and the fact that a singer uses the idea of “finding his or her own ‘awe’” as a way of projecting a powerful voice might not be entirely a coincidence. Symbolically, singing itself has a mysterious spirituality associated with it. The fact that singing the word “awe” resonantly can lead to a magnificently projected “AWE” actually may be related to how languages have evolved from their primordial origins. How, or if, in a literal sense, finding harmony by finding one’s awe is relevant to this is related to the mystery associated with the word “awe.” In the end, the answer to this question depends on the belief system that any individual uses to interpret reality. But an interesting point is that, in potentially one of its crudest forms, the word “awe” can be used to create resonant forms of harmony, and the same word has been used to invoke powerful forms of strength that transcend the human condition.

A very positive outlook, in this context, is that *forms of hope*—in the calamity of what seems to have taken place in the cold fusion saga—*do exist*. As in recent events that have occurred in my personal life, I am hopeful that positive forms of awe will win the day. A number of these events do make me feel, at the very least, a sense of awe (as in a sense of some form of harmony), but sprinkled in with this sense of awe is also a sense of comedy, for example, involving one particular event that took place during my recent trip to the 13th International Conference on Condensed Matter Nuclear Science (ICCF13), which took place between June 25 and July 1 in Sochi, Russia. (See full report on p. 16.)

Another conference attendee had the same flight arrangements as I to Russia. En route, we were overtaken by a comical event as we prepared to change planes in Moscow after our long flight from New York. In preparation for the possible forms of calamity that can occur in an airport where nei-

ther of us spoke the local language or could even read the signs (which were written in a different alphabet), we conferred and realized we could help each other out (or so we thought) to accomplish a seemingly trivial task: going from Terminal 2 (where we landed) to Terminal 1 (where both of us had flights to internal points in Russia).

We encountered a situation in which both of us thought we were involved with a seemingly innocent exchange (involving “bargaining” with someone). The events really did seem, superficially, to involve a meaningful form of communication and we never considered that we would be duped. But the outcome, from beginning to end, was almost obvious: Quite literally, we were “taken for a ride.” It certainly is possible to say that because what happened involved human beings, such a grandiose idea as a form of either positive or negative “awe” associated with what happened is patently absurd. However, what happened is so comical that it goes without saying that, at least in my mind, I have a positive sense of awe, in the end, about it.

This began after we arrived in Moscow at Sheremetyevo International Airport, where we were immediately accosted by three to four taxi cab drivers. Instead of accepting any of the offers for rides, I thought I had good sense by first talking to someone associated with the airport, who, presumably, could provide some guidance. With this in mind, I walked up to an information booth and asked the attendant how to go to Terminal 1. The woman said, “To go to Terminal 1, you can either take a taxi-cab or a bus.” She did not say anything else associated with the price of the cab or the bus. My friend and I did not have a preference about how we should get to the terminal (because we assumed there would not be a significant difference in price). For convenience, we decided to take a cab.

One of the more persistent cab drivers had been following us. He pointed to an exit sign and said his cab was immediately outside. As we walked outside, the driver handed me a piece of paper. It said that it was a “45 minute drive” to Terminal 1 and then he said, “The taxi fare for the two of you is 2,000 Rubles, which you can also pay in American dollars, and if you want to do this, the amount is \$80.” My friend, a quick-thinker from New York City, immediately countered, “We’ll give you 60.” He said, “70.” He agreed to our final offer of “65.”

Since we had a limited amount of U.S. dollars, I told the driver that I didn’t have \$65 and he said (in a classically calm way), “That’s okay, 2,000 Rubles will be fine.” Not thinking, I handed over 2,000 Rubles, which is the amount he had requested initially.

Things went from bad to worse. Instead of it being a “45 minute drive” to Terminal 1, the actual drive was over after four minutes. We definitely were “taken for a ride,” though not in terms of actual distance!

After the fact, I find the experience to be absolutely marvelous, in the sense of looking at what happened as a form of comedy. Was this good “awe” or bad “awe”? I like to think about what happened simply with a form of awe that is neither good or bad and believe this is the way we should view unexpected events. I say this because, in hindsight, I think it was unexpected that such an obvious scam took place and how spectacular it was that we allowed this to happen. In fact, the cost of going from Terminal 2 to Terminal 1 at Sheremetyevo International Airport by bus, we learned sev-

eral minutes later, is only 40 cents (10 Rubles) per person.

A second unusual, personal experience occurred two weeks ago, when five months after the fact, I learned I really had been taken, in a figurative sense, for “a ride,” during an emergency situation involving my car. This resulted from a “ride” that could not take place when I tried to start my car and my key simply did not turn. When this occurred five months ago, the situation was absolutely new to me. At the time, I did not even realize that 24 hour locksmith services exist that make it possible to take care of this kind of thing immediately. Worse yet, I did not realize that the locksmiths involved with these services could be unlicensed and that irresponsible people who pretend to be helpful can, in a figurative sense, “take you for a ride.”

My first experience occurred in March. In desperation, I waited for a “locksmith” who was “supposed to help me” for more than 12 hours. At the time, I believed this “locksmith” was honest and that when he came he would actually help me by giving me a correct, new ignition and key. In fact, although superficially his “help” did seem to be valuable, the key and ignition that he gave me weren’t quite right. The key did turn, and the car did move, but other electronically-connected locks did not function as they were supposed to.

He harmed me by not correcting the problem with my vehicle, and he over-charged me for what he did. He “took me for a ride,” but I was not able to “go anywhere,” simply because I was grateful, at the time, that I thought he had helped me. He gave me the wrong lock with the wrong key. Two weeks ago, my car key and ignition did take a turn for the better, after a really responsible person helped me when I had the same kind of problem. This happened after, for a second time, I could not turn my key in the existing ignition. This time, the honest locksmith who came to help me showed me (after he fixed the lock) how badly the first “locksmith” had performed his work. The ignition was for a different kind of Toyota, and when the last locksmith had installed it, he had left a large number of metal filings in a location directly behind the ignition, which probably caused the ignition to become jammed.

In thinking about these experiences, and how remarkable my involvement with cold fusion has been, I have had a sense of awe about how important it is to be ethical in order, simply, to function in life. Our ability to perform even a simple functional task that we take for granted, like being able to drive a car, is by no means guaranteed. The situation involving the wrong key for the wrong lock happens so often in life, but, in specific cases, we often ignore this possibility. In the cold fusion controversy, the “debate” or “lack of debate” has actually evolved from precisely this kind of thing, and this fact has been ignored.

In particular, the entire fiasco associated with how controversial cold fusion has become, symbolically has its origin in physicist’s being “taken for a ride” by being confused by results involving seemingly related experiments that were conducted by different groups (Pons and Fleischmann’s and Steven Jones’), that actually were not related at all. Further compounding the situation were scientists who had vested interests and who, like the cab driver who took us for a ride, were concerned about money.

As in any situation where harm is done, human beings do have a remarkable resilience. When we are “taken for a ride” we are “scarred” by the experience. But we can learn from

our scars. There certainly is, in the end, a form of awe that we should share both in being taken for a ride and in the scars we receive from this—provided we have the power to accept this awe and use it in a powerful way. To paraphrase the well-known “Serenity Prayer,” we should all accept the things we cannot change, have courage to change the things we can, and have the wisdom to know the difference between the two.

We cannot change the past. The cold fusion controversy began with utter confusion. Although we cannot change this, it is wrong to not accept this fact and to continue to blame the people who were involved for their errors in judgment. In Issue 66 I pointed out that “Charles Barnes, Steven Koonin, and Nathan Lewis gave particularly flawed presentations on May 1, 1989,” during a raucously conducted, late night session of the American Physical Society. This certainly is true, and it was appropriate, in the context of what is presented in this magazine, to bring out this fact. However, I feel it was belaboring a negative when we included pictures of Richard Garwin, Ronald Parker, and Steven Koonin in a “Wall of Shame.” Historical fact will remain, but as individuals we should all try to move forward and beyond our own and others’ mistakes.

We all would like to look back at what we truly wish we could change but cannot change. It is especially poignant to identify people we really miss in this context. In the case of cold fusion, Gene Mallove of course stood out as a beacon of hope. And I want to state publicly that Eugene Mallove was the most idealistic man I have ever known. His grace in life continues, here in this magazine. In terms of intellectual vibrancy, forthrightness and individualism, Giuliano Preparata is an individual who has not been recognized by fellow theorists, like me. And I wish I had been able to tell him this, but I will do it now.

I finally have learned that the intuitive ideas that he held so dear, involving electromagnetism and simple pictures associated with coherent forms of electromagnetism, are misunderstood. Thank you, Giuliano, for knowing me and for the privilege that I knew you; we are kindred spirits. I have learned so much about simplicity and complexity through all of what has taken place. You did identify the nature of the interaction and its limitations. It is sad to say that most physicists still do not appreciate your genius and why what you said applies. Electromagnetism, of course, is key. I am carrying on, in presenting this. I do think that with time, physicists, chemists, and—possibly most importantly—electrical engineers will recognize this. I do miss you, and I wish I could talk to you about all of this. But although I can’t, I do know that saying so makes a difference. Thank you for allowing me to know you—my colleague, friend, and fellow scientist; I do remain, always, true to science and recognize great science when it occurs, and I want to express my highest regard for you, now and always.

In Issue 71, I wrote about two people, Major Todd Hathaway and Nora Maccoby. These two people are extraordinary. It is my pleasure to wish them great happiness as they embark on a new life, as husband and wife. On August 20, Hathaway and Maccoby (author, screenwriter and New Energy Congress member) graciously hosted an event at their home in Bethesda, Maryland, in which a number of presentations were given associated with alternative energy technologies (including a presentation by me about cold

fusion). Hathaway made videos of these presentations, which are available online at:

<http://www.green-salon.com/presentations.htm>

Through a series of questions and comments during my presentation, the founder of the Washington, D.C. Energy Consensus Group, Mitzi Wertheim, initiated a valuable conversation and discussion concerning an important source of confusion related to cold fusion—its name. The name “cold fusion” simply is wrong. The process appears to be dynamical in nature and has little to do with temperature, as a consequence.

Mitzi Wertheim pointed out, as well, that although the name “low energy nuclear reactions” is acceptable in scientific circles, the general public (and, in particular, individuals involved with conservation groups including, for example, the Green Party) would be “turned off” by this name because it involves the term “nuclear.” In fact, the term nuclear is actually extremely vague and confusion about the use of this term, in the context of what has happened in the cold fusion controversy, certainly has taken place. In thinking about these issues, three of my colleagues (Ashraf Imam, Chandra Pande, and Robert Hindsley) and I thought of an alternative name that would seem to be appropriate, assuming that the associated effects are related to the kinds of phenomena that Giuliano Preparata, Peter Hagelstein, and I have suggested might be involved. Essentially, the three of us have identified potential coherent forms of resonance that are induced from interactions between deuterons and a palladium lattice and that these forms of interactions could be responsible for the observed effects. With this in mind, Ashraf Imam, Chandra Pande, Robert Hindsley, and I thought a more appropriate name would be Lattice Assisted Resonant Deuterons (LARD)—though the acronym “lard” may not be ideal! Alternatively, a new area of science has been discovered, Lattice Assisted Resonance (LAR). LAR includes LARD, as well as a number of related effects: Lattice Assisted Resonant Atoms (LARA), Lattice Assisted Resonant Ions (LARI), and Lattice Assisted Resonant Nuclei (LARN). Whether or not these names will be used will be determined by the relevant science.

During the last several months, a number of events related to LENR, as well as other topics associated with alternative energy and global warming, have taken place. Besides the feature scientific articles that we normally include, in this issue we also have a number of articles that cover some of these events. These include a report by Larry Forsley about an event called “The Blue Salon,” which took place in the Swedish Embassy and was hosted by former Swedish Ambassador Gunnar Lund (p. 29); a separate report by me about ICCF13 (p. 16); a summary of the events that took place at the August 18 MIT colloquium (p. 20); and a brief report by Major Todd Hathaway concerning the event that took place at his and Nora Maccoby’s home on August 20 (p. 25). We are publishing an interview (p. 12) that took place earlier this month, in which John Rudesill asks Ed Storms to give an overview of some of the more interesting topics that Ed covers in his new book, *The Science of Low Energy Nuclear Reaction* (which will soon be available via *Infinite Energy*). We are also pleased to report on the Charles G. Beaudette Cold Fusion Archive at the University of Utah (p. 26).