

EDITORIAL

One reason I feel privileged to serve the SSE as *JSE*'s Editor-in-Chief is that the *JSE* fearlessly and non-dogmatically tackles topics that strongly polarize segments of the scientific community. As far as I'm concerned, the *Journal* and its parent organization demonstrate the open-mindedness and intellectual courage that—at least ideally—characterize scientific investigation.

As readers probably know, one of the most scientifically polarizing topics in recent years has been that of “cold fusion,” or as it's more commonly called these days, CMNS (Condensed Matter Nuclear Science) or LENR (Low Energy Nuclear Reactions). (For the sake of completeness, and for the acronym fanciers among you, I should also note that it's sometimes also called CANR [Chemically Assisted Nuclear Reactions]. Moreover, one of this issue's authors prefers LANR [Lattice Assisted Nuclear Reactions].)

The debate over the phenomenon exhibits what *JSE* readers might consider to be an all too familiar pattern. Some researchers claim to obtain a small and elusive effect which, if genuine, would be scientifically revolutionary. But either they or others have trouble replicating the effect. The ensuing controversy then develops along the usual lines. Some continue to report successful experiments and insist the effect is genuine, while others try unsuccessfully to obtain the effect. And before long, the debate degenerates into frequent clashes between recalcitrant believers and non-believers. Of course, that's unfortunate enough, but what makes it worse is that in the process many forget either that others occupy a more reasonable middle ground or at least that some participants in the debate are still willing and able to evaluate evidence and arguments.

Apart from a couple of letters, an obituary, and our usual varied array of book reviews, this journal issue is devoted exclusively to the topic of CF/CMNS/LENR (or whatever), and I'm pleased to say we're offering a thoughtful spectrum of opinions on the topic, free of the stridency or dogmatism one finds elsewhere. Marissa and Scott Little have tried repeatedly, but unsuccessfully, to obtain conclusive evidence of the phenomenon, and they contribute two pieces to this issue. One is an experimental paper in which they provide reasons for thinking that a result that they successfully replicated, and which some consider to be of nuclear origin, might be of chemical origin instead. In their second contribution, they report their own cautious reflections on the current state of the debate. Whether or not one ultimately agrees with Marissa and Scott's views, in my opinion they exemplify something lamentably rare in hotly-contested scientific disputes: a healthy and genuinely open-minded skepticism. Representing those who are more confident in the evidence for CF/CMNS/LENR, we have a large and assorted menu of items. To give *JSE* readers a feel both for the variety of cold fusion research currently underway and also for the diversity of ostensibly positive

results, we're publishing 16 substantive (i.e., long), previously unpublished, abstracts accepted for a recent meeting of the American Chemical Society. In addition to that, Mitchell Swartz (one of the abstract authors) contributes a detailed report of his successful experimental work. Jan Marwan (another abstract author) provided his own brief introduction to the abstracts.

In my previous *JSE* Editorial, I considered to what extent experimenter expectancy effects (exotic or mundane) might be a confounding variable in science generally, not just in the behavioral sciences, or even more specifically in parapsychology, where the phenomena being investigated can—in principle—subvert all conventional experimental controls. And I can only wonder again to what extent experimenter predisposition or expectancy might help account for the bifurcation of cold fusion researchers into either successful or unsuccessful experimenters. I don't doubt that many researchers on both sides of the divide are genuinely open-minded about the reality of cold fusion, and I don't doubt that some of them approach their experiments with as much objectivity as they can muster. But as I noted in my previous Editorial, all scientists approach their work with some beliefs, hunches, inclinations, metaphysical preferences, or even more flagrant biases, of which they can't divest themselves even if they wanted to.

We should also remember that openness to a phenomenon is compatible with a wide range of beliefs. That's why being open to a phenomenon isn't the same thing as being biased in its favor. On the contrary, one can be open to a phenomenon and still think that the phenomenon is highly unlikely. One can even be open to a phenomenon and be biased against it. For example, one can be genuinely open to the possibility that members of alien civilizations have visited the earth but still maintain a firm conviction that the probability of that having happened approaches zero. And as poltergeist victims often illustrate, one can accept a phenomenon as an empirical possibility but still believe that it's something that—at most—happens only to other people. (Similarly, parents often accept, as a stark empirical possibility, that their children might use drugs, but still believe so strongly that their children wouldn't use drugs that they miss all the signs that would be obvious to others.)

So I wouldn't be surprised if the psychodynamics of cold fusion research are far more complex and messy than either its proponents or opponents like to think. And if the effect is real but very fragile, it might be maximally vulnerable to the prevailing attitudes of those trying to elicit it. Probably few physical scientists like to think that their domains might be as context-dependent or situation-sensitive as male penile erection or the ability to be sensual, affectionate, or (more generally) the ability to reveal intimate sides of oneself. But I think we must seriously treat that as a live option. At the very least, our beliefs and attitudes can affect our behavior in extremely subtle ways, some of which might imperceptibly impact a scientist's delicate operations in experimental settings. (That's why Jule Eisenbud [Eisenbud, 1992] plausibly proposed a deep resistance to ESP or PK as one reason for the seemingly unintentional slips or oversights leading to null or otherwise underwhelming parapsychological experimental results.) Moreover, in light of the

evidence in favor of PK on machines or other physical systems, one could argue that scientists' attitudes might even insinuate themselves psychokinetically into experimental results. I'm sure that many or most cold fusion researchers would rather not think along these lines. But while that attitude might be understandable, I doubt that it's defensible.

In rounding up the contributions to this issue, I've relied on the generous assistance of many people. Jan Marwan, Steve Krivit, Mitchell Swartz, and Mahadeva Srinivasan all helped in tracking down abstract authors and securing permissions to publish their ACS abstracts. And thanks to both Mitchell and Srin, I actually had much more material than I could squeeze into this issue. So perhaps we'll be able to revisit the topic of cold fusion from some different angles in a later issue of *JSE*. I've also benefitted greatly from the guidance and editorial assistance of Michael Ibison, Harald Atmanspacher, Scott and Marissa Little, and my colleagues William LaCourse and Joel Liebman from UMBC's chemistry department.

For some time now Carlos Alvarado has performed a valuable service to the *JSE* as editor of our Historical Perspectives articles. I think it's time to recognize his contributions more explicitly and officially by adding Carlos to our ranks of Associate Editors. Thanks to Carlos, we now receive a steady stream of submissions on interesting and relevant historical topics, and he's clearly the right person to have on hand as Associate Editor for those submissions. Equally important (to me at any rate), I now feel free to impose on Carlos for a wider range of editorial duties.

References

Eisenbud, J. (1992). *Parapsychology and the Unconscious*. Berkeley, CA: North Atlantic Books.