

his competency or integrity. I listened, and we eventually set up a protocol that satisfied me, and I agreed to carry out the specified procedure.

I received by mail (in batches) a set of thick cardboard sheets. Each sheet had a set of rows, with each row consisting of a pair of short strips of black tape. After receiving a batch I waited for at least a week, and on a day prescribed by the fixed protocol, I extracted from the weather table of *The New York Times*, by a fixed recorded procedure known only to me, a pair of "random numbers" that I then used as seed numbers in a computer program devised by myself and divulged to no one (until after the experiment was completed). This program generated from the seed numbers a set of pairs of (pseudo) random signs (σ_{1i}, σ_{2i}), with one pair of signs for each row i . The sign σ_{1i} specified, according to the preestablished protocol, which one of the two black strips in row i I would peel off. Under the removed strip in row i was a (signed) number n_i , which I multiplied by the sign σ_{2i} . I then computed, by a standard, preestablished procedure, taken from a statistics book, the "positive bias" of the sequence of numbers $\sigma_{2i}n_i$. Since I had multiplied each incoming number n_i by a randomly selected sign σ_{2i} that I had generated independently, I expected no statistically significant positive bias, and that is what I found.

I then sent the set of signs σ_{2i} to Schmidt, and some months later, after receiving a go-ahead from Schmidt, I removed the remaining strips of black tape (in the batch) and computed, by the same preestablished procedure, the positive bias of the sequence $\sigma_{2i}n_i'$ formed from the newly revealed numbers n_i' . I expected, for the same reasons as before, to find no statistically significant positive bias, and that is what I found.

During the interval between the time I sent to Schmidt the signs σ_{2i} and my uncovering of the numbers n_i' Schmidt supposedly had his subjects trying by mental effort to positively bias the numbers $\sigma_{2i}n_i'$. On the basis of four earlier experiments of a generally similar kind, Schmidt predicted that I would find the sequence of numbers $\sigma_{2i}n_i'$, unlike the control sequence $\sigma_{2i}n_i$, to be positively biased to about three standard deviations or more—something that would be expected to occur by chance only once in about a thousand trials.

Schmidt and I had agreed beforehand that the result would be published regardless of whether the outcome confirmed his expectations or not, and hence my *negative result* was duly

published in Jonathan Dowling's reference 4. That reference described also what Schmidt had done; I myself had no involvement in any aspect of the experiment beyond what I did in my office, which I have described above.

The procedure that I myself carried out was purely a "physics experiment." Since all the relevant numbers were in my possession and were stored in a secret and secure place, there was, according to orthodox physical ideas, no way for Schmidt to produce a systematic positive bias in the set of numbers $\sigma_{2i}n_i'$. I described my physics experiment in detail in the original version of the paper I sent to the *Physical Review* but was forced by the referee and editors to exclude that part of my paper from the published version.

It was within the specific context of simple and clean physical experiments of this particular kind that I put forth my quantum mechanical model of how results of the kind predicted by Schmidt could be explained by merely making a small change in the Schrödinger equation that would produce no observable effects in any purely physical experiment heretofore performed by physicists. Because of the existence of this model we cannot *rationaly* rule out the possibility that the "Schmidt effect" exists merely on the grounds that this effect is incompatible with what we already know about the laws of nature.

I believe it would now be useful to perform additional experiments of the kind described here to resolve the discrepancy between the null result that I obtained and the positive combined result of the five experiments reported by Schmidt. From the physicist's point of view the entire system of human beings and physical devices that are producing the cardboard sheets is simply a black box, and no assumptions about its properties are required to draw the conclusion, if the positive bias predicted by Schmidt were to occur systematically, that some aspect of our orthodox understanding of the laws of physics is seriously incorrect. Hence if a significant number of physicists of established high repute were to obtain results in line with the combined results reported by Schmidt, and the effect were to hold up, a finding of first-magnitude importance in physics would be obtained. On the other hand, a negative result would provide direct empirical evidence in support of the widespread view among scientists that experiments that purport to show the existence of "psi" phenomena will fail when sufficiently rigorous conditions are enforced.

Reference

1. D. L. Radin, R. D. Nelson, *Found. Phys.* **19**, 1499 (1989).

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Physics Today Redesign Reaction

With regard to the new design of PHYSICS TODAY, my personal belief is that the cosmetic changes are of little consequence. While the magazine does look slightly more streamlined than before, I did not find the February issue to be significantly different in content from past issues, apart from the essentially uninspired addition of the Physics Update section: One page of a monthly magazine can scarcely do justice to the many physics developments worthy of notice in a timely fashion.

My bigger fear is that in the march toward greater relevance and modernity PHYSICS TODAY will lose some of its importance as a magazine of general interest to the physics community in return for becoming more attractive to advertisers and a readership that may lie outside the physics community. Please do not Tina Brown-ize PHYSICS TODAY. Like the old *New Yorker*, the old PHYSICS TODAY was a venerable and marvelous institution that, with all its faults, served its readership with great distinction.

I also cannot let this opportunity go by without noting the passing of PHYSICS TODAY's editorial leadership from Gloria B. Lubkin to a new editor. Under Gloria's leadership PHYSICS TODAY thrived. She played a major role in consolidating PHYSICS TODAY's reputation and central position in the world of physics. Her contribution should not go unacknowledged.

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(The author is the editor-in-chief of the *American Physical Society*.)

THE EDITOR REPLIES: Acknowledged. Gloria B. Lubkin continues to play a vital role at PHYSICS TODAY as editorial director. Serving 120,000 physicists in ten member societies, PHYSICS TODAY remains the magazine of physics for physicists.

Correction

April, page 106—In the obituary of Odd Dahl the Kennelly–Heaviside layer was incorrectly referred to as the Kennedy–Heaviside layer. ■