

letters

parably more valuable than one detailing all the known information, replete with formulas and equations arriving on the legislator's desk one hour after roll-call vote.

But it is precisely in establishing this close working relationship based on mutual trust and regard for each other where the payoffs both to the scientists and the politicians can be the most rewarding, and this is why I am so enthusiastic about the Congressional Fellowship Program.

ANNE H. CAHN

Massachusetts Institute of Technology
Cambridge, Massachusetts

Bethe still at Cornell

I am writing to correct an announcement made in the "We Hear That" column for May 1973 (page 77). It was noted that Hans A. Bethe "has been named Battelle Distinguished Professor of Physics at the University of Washington following his retirement from Cornell University." This information is partially correct in that I believe Bethe did serve as Battelle Distinguished Professor of Physics during the Spring term 1973. However, I am happy to assert that Professor Bethe is not retired from Cornell. He will be spending one term away from Cornell in each of the three years from 1973 through 1975. During this period, Professor Bethe retains his regular faculty responsibilities while in residence in Ithaca.

D. F. HOLCOMB
Cornell University
Ithaca, New York

Teleneural physics

I am writing this letter to defend and to stimulate interest in the physics of teleneural phenomena. My scientific background includes work on the phonon theory of transport in solids and light scattering, diffusion and collective-mode theory in liquid crystals. However, over the last year or so I have found an intriguing new avocation that is rapidly developing into the possibility of a professional area of endeavor. The work of the Russian physicist and cyberneticist, I. M. Kogan,¹ has shown that, using information theory together with electromagnetic theory, the propagation of a telepathic signal is feasible. Information transfer rates were found to be small so that the process is a subtle one not amenable to high communication rates. Evidently the frequencies are low. Various possibilities for the reception of an electromagnetic signal that have been proposed include inter-

action with the proton resonance frequency in the body's magnetic field and an electrohydrodynamic liquid-crystal model of the cell membrane. The electromagnetic theory of telepathy envisions the body of the sender as an antenna and the requisite biocurrents for signal transmission range from approximately 10^{-12} to 10^{-6} amp for distance of 1 and 10^6 meters, respectively, for a typical transmission time and typical number of possible issues.

However, telepathy has been done in a Faraday cage^{2,3} with results that signified improved transmission rates inside the cage. If this work is correct, and if the cage effectively screened even long wavelengths, then telepathy may be the result of some non-electromagnetic mechanism, and the electromagnetic theory, which appears very plausible, may account rather for noise due mostly to electronic equipment in telepathic reception. In addition, direct electromagnetic effects on the neural system may be a cause, in some people, of neurological disturbances and would be a significant factor to consider in the present electromagnetic pollution of the environment. One of my graduate students and I have done telepathy experiments, and after checking the theories and postulating a mechanism for reception, we don't find telepathy so hard to accept.

One of the primary reasons for writing a letter at this time is to comment on the recent article in *Time* magazine⁴ concerning laboratory work with Uri Geller, a young Israeli psychic, at the Stanford Research Institute (SRI). In my estimation, based on my participation in a portion of those experiments, the traditional stance of most of the scientific community toward teleneural phenomena of complete disbelief and noninvolvement is certainly open to question. From the variety of experimental results with Uri Geller and, in addition, other evidence from outside the laboratory, I would say that, in my estimation, the physics community and scientists in general should reconsider their positions with respect to the possibility of science in teleneural phenomena. The laboratory evidence, while not what it could be for convincing proof, indicated that "magic" or sleight of hand could not explain most of what Geller did and that further work should be attempted and carefully controlled experiments performed with a view toward isolating the many variables in experiments with the most complex of subjects—the human being. A lot of credit should go to the SRI management and scientists and to former astronaut Edgar Mitchell (who was part of the team at SRI) for taking a step, in the face of considerable adversity and strong criticism, toward what may become a new

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