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On "Science and the Supernatural"

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I have read with some amazement the article "Science and the supernatural" (*1*). In this paper George Price suggests fraudulent collusion between the chief experimenter (presumably myself) and a number of highly respectable people as an explanation of the significant results obtained in the card-guessing work carried out with Basil Shackleton and Gloria Stewart reported by F. Bateman and myself (*2*). Moreover, Price makes these suggestions without being able to produce the least fragment of factual evidence that any such fraudulent malpractice ever took place. It is, I think, safe to say that no English scientific journal would have published such a diatribe of unsupported conjecture. *Nature,* the leading English scientific weekly, has nothing but praise for our work, in a recent book review (*3*).

Price begins by saying that "In his early work as a psychic investigator, Soal published excellent papers reporting negative findings and showed himself to be a meticulous and ingenious experimenter, expert at uncovering trickery." But every competent critic has admitted that the Shackleton experiments, for instance, were on a higher level of technical efficiency than any of the earlier 1934–39 card-guessing experiments. In the earlier work, for example, the guesser and sender were in the same room separated only by a screen, whereas elaborate precautions were taken in the later work to eliminate all sensory cues. Apparently Price considers the early experiments to be "excellent" merely because they produced only negative findings. In much the same way critics hostile to extrasensory perception pronounced Coover's (*4*) very defective experiments to be "a notable example of painstaking, thorough research and exact treatment of numerical data" (*5*). There is little doubt that if Coover had obtained positive results of high significance his experimental methods would have been described in far less flattering terms.

It is very significant and somewhat comforting to learn that Price admits that "most of Soal's work" cannot be accounted for by any combination of statistical artifact and sensory leakage. He is convinced, for instance, of the inadequacy of Rawcliffe's theory of "double whispering" in disposing of the Shackleton results (*6*) or of Spencer Brown's suggestion (*7*) that the extrachance scores are due to nonrandomness in the target series or to defects in probability theory (*2*).

He is therefore driven, as a last resort, to suggest that the experimenters have deliberately organized fraudulent techniques that have been successfully practiced in the case of Mrs. Stewart over a period of 4 years without detection by the numerous academic people who have taken part in the experiments. In taking this attitude Price would appear to be trading on the prejudice and hostility that a majority of American scientists bear toward the subject of telepathy. In England the attitude of scientific men and philosophers is far more tolerant and open-minded, and such an attack as that of Price would be considered grossly unfair unless he could produce actual evidence that cheating had taken place.

Price has suggested several methods by which the experiments could have been faked. I propose to examine these suggestions in some detail.

In at least three of the procedures described the Agent or sender and the Percipient (as well as EA, the chief Experimenter) are in the trick. The Agent, sitting behind the screen arranges the five animal cards in an order that has been decided beforehand by EA. Or in another variation the Agent lays out the cards in any order and communicates this order to EA on the other side of the screen by means of some code concealed in a phrase such as "I am now ready." EA then communicates this order (or certain partial constituents of it) to the Percipient in the next room by means of a code contained in some commonplace phrase or by means of inflections of his voice, and so forth. The Percipient who is in collusion with EA has previously memorized certain numbers chosen by EA from certain key positions of his list of random numbers. As EA calls aloud the serial numbers of the 25 guesses, the Percipient decodes the numbers in the key positions into the corresponding initials of the animals' names.

Price goes to great length in devising variations on this theme, but they all depend on the Agent being in collusion with the chief Experimenter or with the Percipient. Now four of the Agents with whom Mrs. Stewart was highly successful were lecturers of high academic standing at Queen Mary College in the University of London. Two were senior lecturers and the other two were mathematicians who had done distinguished creative work. A fifth Agent who was brilliantly successful over a long period was a senior civil servant, in fact an assistant director of mathematical examinations in the Civil Service. Now is it plausible to suppose that I, as chief Experimenter, could persuade any of these men to enter into a stupid and pointless collusion to fake the experiments over a period of years? What had any of them to gain from such deplorable conduct? If I had gone to any of them and suggested (as Price recommends) that in a good cause a little deception would do

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no harm, I know quite plainly that the result would have been a first-class scandal in university circles. These men had no burning desire to prove extrasensory perception and no religious axes to grind. They had everything to lose by besmirching their academic reputations. Their only motive was scientific curiosity. It is idle, therefore, for Price to assume that these five Agents would consent to arrange the cards at the bidding of myself or deliberately to communicate the code either to me or to the Percipient, Mrs. Stewart. Certainly, one might find obscure people with no conscience who would, if they were paid for doing it, assist in faking an experiment, but not in the ranks of University of London lecturers.

If then, these Agents were not in the trick, how did EA get hold of the code in order to communicate it to Mrs. Stewart? Since in many such experiments another academic man was sitting by Mrs. Stewart handing her numbered record sheets to fill in one by one, it would be clearly too late for her to receive the code *after* her 50 guesses had been completed. Nor could she draw prepared lists of guesses from a drawer, since there was no accessible drawer at the table where she sat, and even if there had been one her every movement was under observation by the academic man sitting beside her. EA might, of course, *ask* the Agent innocently for the order of the code at the commencement of each run of 50 guesses, but all 30 Agents would swear emphatically that no such thing ever happened and that during a run EA never left his own side of the screen. Moreover, asking for the code would excite immediate suspicion. Price has made the suggestion that EA, looking through the hole in the screen, might see the reflection of the five cards in the Agent's spectacles. But with the lighting of the room as it was and the position of the hole and the size of the box, it can easily be verified that such a thing would be impossible. I have always been on guard against reflections in card experiments, and since the main object of my setup was to insure that EA who gave the signals to Shackleton or Mrs. Stewart should have no knowledge of what card the Agent was looking at, I naturally took special precautions to see that reflections in spectacles, window panes, and so forth, were impossible. I am ready to demonstrate to anyone that the spectacle theory is an erroneous one under our particular conditions.

If then the Agent is not in the trick, it would appear to be impossible for the code to have been communicated to Mrs. Stewart until she had recorded her guesses. I could cite large numbers of highly successful experiments in which both the Agent and the person who sat with Mrs. Stewart were people of academic standing. Let me give only two examples.

At sitting No. 52 on 23 April 1948, Louise Morgan (2, p. 225), a well-known journalist on the staff of the *News Chronicle,* visited us for the first time and took part as Agent. Brendel of Queen Mary College sat by Mrs. Stewart for the whole time while she was making her guesses. The checking of scores was done by Brendel, watched by Morgan and R. A. M. Kearney, a mathematician. Mrs. Stewart made a score of 109 hits in 400 guesses. This gives an excess over chance expectation of more than 3.5 standard deviations. Now no one will suggest that I could be such a fool as to attempt a collusion with Morgan. If I had done so I should have seen my name in letters of infamy in next morning's *News Chronicle.*

And here is an experiment in pure telepathy (2, pp. 252–253) in which Rozelaar of Queen Mary College was the Agent. In this case no actual cards were used, but the Agent imagined a code to be printed on five blank pieces of paper and did not divulge it until Mrs. Stewart's guess sheet was safely in the hands of Bateman (assistant director of examinations to the Civil Service Commission) who sat by Mrs. Stewart. In 200 trials she obtained 60 hits—the equivalent of 3.5 standard deviations. Here there was no question of EA (myself) reading the code in Rozelaar's glasses. (Actually at that time he did not wear spectacles). And as I have said it would be absurd to suppose that a senior lecturer of the University of London would lower himself to assist in faking an experiment. Rozelaar had no connection whatever with any psychical organization. The guesses were decoded by Bateman and checked by Mrs. Hales (a highly respectable professional pianist), and Rozelaar himself checked me as I called aloud Mrs. Stewart's guesses.

I could multiply examples of experiments of this kind. Moreover, Mrs. Stewart was successful with 15 Agents out of 30 that were tried. Price's assumption of collusion between myself and fellow-lecturers at the University of London has no basis in reality and is a fantastic product of his own imagination. Many people would consider such a hypothesis to be more improbable than the existence of telepathy itself, for which there is a vast amount of spontaneous evidence of good quality quite apart from card-guessing. Indeed in formulating his themes of collusion, Price has not taken sufficiently into account the high quality of the personnel connected with these experiments. Nor has he any acquaintance with the mentalities of the Percipients themselves. No one, for instance, who knew Shackleton would credit him with the ability to memorize accurately certain random numbers located in varying key positions in as many as 12 or 16 columns and, in addition, to transpose these numbers into code letters at the rate of one every 2 seconds. I should experience the greatest difficulty in performing such a task myself, even at the normal rate of calling, and at the rapid rate of a call every second I should find the thing impossible. With an observer watching every movement, I should be unable to pull from my pocket any lists with which to refresh my memory. And to have to carry out such a nerve-racking performance week after week would be intolerable.

Then again the reproduction of the many subtle position effects described in Chapter XIX of *Modern Experiments in Telepathy* would be very difficult to fake.

In certain of the Shackleton experiments the lists of random numbers were prepared by Wassermann, a mathematical physicist, and I had no opportunity to see them until the experiment was over. Most people in England who know Wassermann would have little doubt about the sort of reaction that would be induced in him by a request to assist in faking an experiment!

Price evidently thinks that extrasensory perception should be established once for all by an absolutely fraudproof, cast-iron experiment. The late F. C. S. Schiller, the Oxford philosopher, used to argue that such a hope was illusory. Even if such an experiment were feasible, we should find that, as the years passed and the experiment faded into history, fresh doubts would begin to be raised about the reliability of the experimenters or the possibilities of collusion.

Another experiment would then be necessary, and the arguments would begin all over again. On this question I am in agreement with Schiller, and I favor a quite different method of approach.

The main obstacle to the acceptance of parapsychological phenomena is the apparent rarity of the people who can produce them under even reasonable conditions of control. Now this rarity I believe to be apparent rather than real. We do not know the signs by which to distinguish these exceptional card-guessers and so we waste time and effort in testing the wrong kind of people. There is increasing reason to believe that we shall not discover them in university populations and that it is a waste of time to experiment with students. But experience of the last few months has indicated that it is among the less sophisticated types that we should pursue our search—especially among children living in rural communities or in backward countries.

I think there is little doubt that with

an increasing number of such high-scoring subjects much of the prejudice of ordinary scientific workers will disappear. When more and more competent Experimenters report on cases of high-scoring subjects, the hypothesis of collusion will become as extinct as the dodo. While it is, in the last resort, possible to suggest that two or three Experimenters have faked their results, this will not be possible when scores of competent investigators produce their reports on similar cases. I suggest to Price, therefore, that efforts should be directed toward the discovery of the personality characteristics of these people who make averages of 8 or 10 hits per 25 over considerable periods, the sort of communities in which they may be successfully found, and so on. In other words we should aim at repeatability by more and more investigators.

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Comments on "Science and the Supernatural"

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Credit Side

Strange though it may seem, the publication of the George Price paper, "Science and the supernatural," is, on the whole, a good event for parapsychology. It is not merely that it is better to be attacked than it is to be ignored. According to the ways of American science, a revolutionary finding has to be cuffed and kicked through the entrance in order to gain admittance. When unorthodox issues are concerned, only critical articles, and the rougher the better, are likely to be accepted by the scientific periodicals. In fact, one can easily fancy (as some readers have) that Price deliberately undertook to sell parapsychology to American science by disguising a really informative article as a slanderous critique, with charges so utterly exaggerated that they would not be believed even by skeptics of ESP. At any rate, as a way to get a lot of instruction on parapsychology into *Science*, it worked as well as if it had been planted.

It is also of value to parapsychology to have Price portray so vividly the potential importance of psi abilities. He has even more clearly appreciated the great potential applications of ESP than have many of the workers in the field. It is true that he has overlooked the limitation owing to the unconscious level on which this elusive function operates; but if (as is not unreasonable to expect) that limitation can be overcome through future investigation, his picture of the utility of psi will be entirely realistic.

Again, credit goes to Price for his coverage of the older criticisms of the psi research. Although they have been answered many times in the literature of parapsychology by others, Price has summed up the case rather well—so well, in fact, that but for the philosophical blockage from which he reveals he suffers, he sees nothing to prevent the acceptance of ESP. It is true that, rather than to question the mechanistic philosophy that he recognizes is at issue, he oddly professes to believe that all parapsychologists are liars and montebanks; but such a wild charge, even if Price really intended it to apply to the dozens of university and other scientists involved, is not likely to be taken seriously. On the other hand, his effective answers to the earlier criticisms of ESP work will and should carry weight with them. In a word, he has himself rounded out a fair case for ESP for all but the utter cynics who can accept his fantastic suspicion of a vicious conspiracy among academic research workers and a monstrous half-century-long hoax.

Finally, and best of all, comes the point that most concerns Price himself. He has focused more neatly than any other reviewer the deadly, menacing sting of the psi research findings. It is of great importance, indeed, for parapsychology to have the point of this issue brought out sharply and clearly in the pages of *Science* itself! I myself, in a voice scarcely audible in conventional science, have been shouting from the housetops the very same issue that Price has drawn. It is the head-on collision between the facts of parapsychology and the prevailing physicalistic theory of man (or call it mechanism as he does, or materialism, or physical monism, or whatnot). The fact is that this philosophy, on the one hand, and these experimental facts, on the other hand, directly contradict each other in an inescapable, horn-locking manner. Walker (*1*) and Boring (*2*), among others, while they have sparingly admitted in recent publications that there are some experimental results in parapsychology that have to be dealt with, have failed to see the lethal blow that these research results give to the belief in physicalism that both authors espouse. They hold out, rather, for some future, more elastic, physicalistic concept that may eventually account for these puzzling findings of today.

Ignoring his language, I prefer Price's forthright demand for the balancing of the books right now. He, even more than any other critical reviewer, gives indication of having felt the force of the evidence for ESP. When he turns then—albeit a bit too emotionally—and says that, according to the current concept of nature, ESP is impossible and therefore the parapsychologists must all be fakers, he at least draws the issue where it can be squarely met. The answer of the parapsychologist is: "Yes, either the present mechanistic theory of man *is* wrong—that is, fundamentally incomplete—or, of course, the parapsychologists *are* all utterly mistaken." *One* of these opponents is wrong; take it, now, from the pages of *Science!* This recognition of the issue gives point to the findings of parapsychology in a way none can easily miss.

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