ESP: A Conceptual Analysis

Target-guessing experiments make no case for ESP. This is a matter of logic, not empirical deficiency.

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I have two aims. First, I want to explain why, as a philosopher, I find nothing impressive in any of the ESP literature that concerns target-guessing experiments. Second, I hope to make plausible the view that some sorts of parapsychological phenomena cannot be taken seriously at all—hence there is not much point in evaluating the experiments or the putative evidence these experiments produce.

My skepticism about these target-guessing experiments has little to do with suspicions about the adequacy of experimental controls or with worries about the possibility of fraud. The problem is more fundamental than that. Typical target-guessing experiments, such as those that make use of Zener cards or their equivalent, simply don't do anything to establish ESP; and this, it seems to me, is a matter of logic and not one of mere empirical deficiency. Much of what I have to say is taken up with explaining and defending this thesis.

I shall confine the discussion to the experimental literature. Frankly, the anecdotal literature is much more interesting but, unfortunately, it is hard to give credence to any of the amazing tales. It is not only that it is wise not to put trust in stories told by others but that it is wise not to put trust in strange experiences even if they are one’s own. Indeed, it is positively egotistical in the extreme to suppose that what is wrong with the anecdotes is that they are always someone else’s. On the other hand, I certainly reject the notion that scientists have some peculiar competence to investigate anecdotes after the fact with the alleged aim of confirming or disconfirm-

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ing them. In no university, at least on this planet, is any such course offered as "Physics 200: The Fundamentals of Fraud." Nor do scientists take any course called "Specialized Techniques for Discovering Alternative Explanations." Of course every scientist who understands the logic of explanation realizes that for any phenomenon there is more than one possible explanation. But no scientist learns as part of his formal education how, say, to examine ceilings so as to be able to figure out how it rained through an apparently sound ceiling. A roofer would have much more competence.

I

There is a limit to the use of statistics. For example, no amount of underrepresentation of a minority group in a given industry could establish even a weak case for racial discrimination unless we already had some independent reasons for thinking there is a phenomenon of racial discrimination. Of course we do have reasons. But suppose, reader, that you yourself were completely free of any bigotry, had never met a bigot, had never even heard of such things as racial jokes. Moreover, suppose that the history of Jews and blacks and others were entirely different and that you could not point to a single instance of demonstrated discrimination or prejudice. What would you then make of underrepresentation? Imagine that someone were to maintain that the underrepresentation established a case, at least a weak case, for the following: many black people are frightened off from applying for jobs in the industry by leprechauns who threaten to kill them and who further threaten to kill them if they reveal the first threat. I take it that it is uncontroversial that underrepresentation does not make even a weak case for this bizarre hypothesis.

I am not claiming that it is because we have never seen leprechauns that they make a bad explanation. Rather, we have no reasons over and above the underrepresentation to believe in them. Physicists postulate the existence of certain sub-microscopic events as the best explanation for certain macrolevel events, and we do not balk at that. What makes them the best is their predictive power and their power to explain data beyond those for which they were originally postulated. All this is well known. I am claiming that mere statistics do not make ESP a rational explanation for certain surprising happenings any more than mere statistics could make discrimination a rational explanation for underrepresentation.

Consider the case where ESP investigators performed experiments and got results for which they claimed, "The odds against this happening by chance are . . . [something astronomically high]." Even if these experiments are flawless and the statistical analyses are correct, they do not go the slightest way toward establishing that the results were due to ESP, unless we have independent reasons to suppose there is such a thing as ESP.

Now many researchers, following a suggestion by Thouless, have
dispensed with the terminology of ESP and prefer to talk about psi phenomena. The intent is to adopt an umbrella term that signifies only that something interesting is going on and not the specific nature(s) of these goings-on. This shows admirable restraint, but if “psi” is only a label for “statistically interesting results” then it is not used to pick out any phenomenon at all, much less to pick out any process for explaining any phenomenon.

In using “psi” as a label for an expression like “whatever it is that is going on,” we should keep in mind the distinction between the attributive and referential uses of terms. For example, if the police are interested in catching the man who committed the crime but haven’t the foggiest idea who did commit the crime, then we are using the expression in its attributive sense. But if a policeman says to his partner, “Look, there’s the man who committed the crime!” then the policeman is using the expression referentially. Now, if psi is understood as merely whatever it is that causes interesting results, then it does not constitute any kind of explanation. Hence it isn’t even a weak competitor with other explanations. I am not saying that attributive expressions never figure in genuine explanations (although that is arguable), but certainly this particular type of attributive expression is no kind of explanation—not even a bad kind.

I prefer such terms as ESP and its various species: telepathy, clairvoyance, precognition, and psychokinesis. If nothing else, these are labels for certain alleged kinds of phenomena. But considered as processes, we know nothing about their machinery. This, of course, is the very point of adopting the term psi. Naturally there are many speculations about how they might operate, but here I rely on Gauld’s excellent review explaining the failure of every presumptive model.

It is with astonishment (and a certain degree of despondency) that I read John Beloff’s claim that a good experiment should produce a scoring rate at such a high level as to “exclude any counter-explanation.” What could such a level be? A score of 100 percent is certainly not high enough, for that would at best establish “something interesting is going on.” Even if we had reason to believe in ESP, why should we suppose that a very high level of scoring would exclude any counterexplanation? Suppose we had reason to believe both in racial discrimination and in vicious leprechauns. What degree of underrepresentation (in our previous example) best fits each hypothesis? Clearly we need auxiliary hypotheses, but given that we don’t know how ESP is supposed to work it isn’t clear why we should be more favorably disposed to ESP as the true explanation of a high scoring rate than to some other explanation.

Suppose we grant for the sake of argument that target-guessing experiments have shown there are phenomena worth investigating. And suppose it is claimed that these experiments prove at least a prima facie case for ESP in one or more of its forms as the process accounting for the interesting statistical results. Can we move beyond a prima facie case to a
real one? Only if certain conditions are met. For surely many other supernatural and paranormal non-ESP hypotheses may be concocted to account for the interesting results. It doesn't matter in the slightest that we have no reason to believe in these things, because in that regard they are on all fours along with ESP. So long as they are the kind of things that, if they existed, could account for the results, then the results are as much prima facie evidence for any of them as for ESP. Only if we have independent evidence for our favored alternative can we justifiably take the statistics as further evidence for it and not for them.

I emphasize that I am discussing ESP in particular and not the paranormal in general. ESP is a subset of the set of alleged paranormal phenomena (vampires, UFOs, etc.), and one need not admit there is any specific evidence for ESP over and above whatever the evidence is for there being something paranormal. But even to concede the existence of the paranormal is to concede quite a lot. So it is time to address ourselves directly to the question of whether something interesting is actually going on in any of the target-guessing experiments.

II

Sometimes, when certain events are extremely unlikely to have happened by chance, we conclude that they didn't happen by chance. Other times, we conclude only that "the odds against this having happened by chance are ..." and we leave it at that. This is to be explained, I think, by the relative differences in our knowledge concerning how the phenomena work. For example, if we learn that a man has run the mile in 3 minutes 48 seconds, we conclude without further ado that he is a serious runner. We could put our conclusion more modestly: "The odds against this having been a lucky performance by an obese nonrunner are quite high," but this is carrying philosophic caution to a ludicrous extreme.

Imagine that from a deck of one thousand cards, no two of which are alike, I predict correctly the card I will draw. The chances of doing so are, naturally, only one in a thousand. Nevertheless, the most reasonable conclusion after this has happened is that I was lucky. Despite the improbability of my making a correct hit by chance, we conclude that probably it was due to chance. This is extremely important because it shows that we not only believe that events that are very unlikely are bound to happen from time to time but that we also believe that sometimes chance is the best explanation. However, to admit that \( X \) has happened by chance is to admit it probably won't happen again. Suppose we run the card experiment ten more times. This will increase the improbability of making all correct hits. But it also does something more—it provides confirmation for a claim of having an extraordinary ability. The repetition of success must have some force over and above its effects on probability, otherwise we would never have to abandon the hypotheses of luck.
Consider the fact that there must be some number of cards such that one hit from that enormous deck is of equal improbability to ten hits from a deck of one thousand. If the most plausible explanation of the correct hit from the enormous deck is luck and if there was nothing else but an extraordinary improbability to reckon with in the case of the ten consecutive hits from the deck of one thousand, then, given that the improbabilities are the same for the two cases, I should take the same view of the ten consecutive hits as I do of the single hit from the enormous deck. In truth, however, I would be loath to bet against the person who has just made ten hits in a row, and so the repetition of his successes does seem to have a force over and above its effect on probability. And this is just the force of confirmation. But what counts as confirmation? In the example of the ten consecutive hits we clearly have a repetition of successes, but we settle for something much less if we also count as successes repetitions of experiments that yield only results contrary to what is expectable by chance.

Suppose a subject has correctly guessed the outcome of coin-tossing 51 percent of the time in each of six experiments given at three-month intervals. Since each of these “successes” is itself a matter for debate, the repetitions add nothing of value. (To think otherwise would be thinking that six dubious arguments for the existence of Santa Claus are better than one.) We ought simply to total up the sum of the subject’s guesses and calculate the chances of correctly guessing 51 percent of that total. If the odds against getting 51 percent right from that grand total are enormous then we should note it, but we still can’t rule chance out unless, as in the case of the runner, we have sufficient background knowledge to do so.

For ESP to be a stronger contender than chance we need to know what degree of scoring success it ought to yield. Should a person with clairvoyance predict coin tosses with 100 percent accuracy or with 51 percent accuracy? Without this knowledge, ESP is only an ad hoc hypothesis of the lucky average. But which hypothesis is preferable? The lucky-run hypothesis—because it is an instance of a phenomenon we already have independent reasons for believing in.

Some ESP researchers want to leave open the possibility that the “extra” in “extrasensory” refers not to some mysterious abilities beyond the perceptual but to some as yet unknown perceptual apparatus. However, if we are to take this possibility seriously, then we must bring to bear all our background knowledge concerning the nature of perception. We can characterize ESP as a form of perception only if it shares the salient characteristics of other forms of perception. This fact creates another problem about the statistical anomalies. Since perceptions in good working order are paradigmatically sources of correct information, it follows that if ESP is a form of perception then we ought not to take strong
negative correlations between hits and guesses as evidence of an ESP ability. Perceptions do not work by leading us consistently to error.

Perceptions are not merely sources of belief but are the means by which we confirm beliefs. There are reports of people who "perceive" colors through sensations in their fingertips, regardless of the tactile qualities of the surfaces they are feeling. How, if at all, do they confirm their claims? Presumably by looking and seeing that their beliefs are correct. It is never the other way around. People who see that a surface is red do not confirm their perceptions by shutting their eyes and testing the object with their fingertips. Different phenomena are the prerogatives of different senses. This is a logical matter, not an empirical one. (I do not mean that it is a logical matter that the eyes be the seat of vision.) There are no phenomena that are the prerogatives of ESP. That is, there are no phenomena for which an ESP experience is the ultimate court of appeal. Given a dispute about whether an object in the distance is crayon or chalk, it is inconceivable that the ultimate determiner might be some ESP experience.

In philosophic circles, it is a fairly commonly accepted notion that
knowledge is to be analyzed as, at the very least, justified true belief. Since normal perceptions confirm beliefs, they typically do yield knowledge. However, ESP does not provide confirmation but only the experiences that stand in the need of confirmation. Accordingly, at best, ESP yields true beliefs. In the Zener card test, any subject who consistently averaged 9 hits out of 25 over a very long haul would be regarded as extraordinary, but by definition, a person cannot be said to know what cards are coming up if he goes wrong more often than he goes right—which is the case for anyone who averages less than 13 hits out of 25. In every standard multiple target-guessing experiment known to me, “good subjects” generally go wrong far more often than they go right. Hence ESP cannot be regarded as a form of perception.

Suppose, then, that in this context “perception” is just a figure of speech and that it is not a model for ESP. So it may be said that we have no idea how a good subject should score. We have no idea whether a coin-guesser should score about 52 percent or 100 percent or even whether negative correlations count as good evidence. But, if this is true, it still isn’t clear why ESP researchers should put the onus on the skeptic by asking, “How do you explain this result when the odds are ten million to one against its happening by chance?” Rather, the ESP researcher should formulate some plausible hypothesis about the modus operandi of ESP in order to explain intelligibly why every good subject is wrong far more often than right. Instead, after 50 years, we have not progressed beyond tedious target-guessing and statistical analysis. The only change has been in the sophistication (and cost) of the equipment.

I am prepared to accept the idea that the “perception” in “extrasensory perception” is a figure of speech and that, for all I know, if there is ESP, then a person who had it would be right in about 52 percent of his guesses of ten thousand coin-tosses. Still, there is no reason we know of antecedently to take 52 percent as solid evidence and, say, 59 percent as evidence of fraud. For all we know, 52 percent is compatible with second-rate fraud. To date, we have no reason to take any statistical result as peculiarly well suited to the ESP hypothesis.

I want now to say something about such phenomena as precognition, psychokinesis, and disembodied survival after death. To begin with, let us consider the matter of disembodied survival after death. Some ESP researchers seem to think all that is at issue is whether it is true that we, or some of us, survive death. But some philosophers have offered penetrating arguments for the proposition that disembodied survival is conceptually impossible. If A asks B to keep an open mind as to the possibility that X exists, this request can make sense to B only if he regards X as conceptually possible. If A knows that B has an argument against this possibility, then
A's asking B to keep an open mind and to take a look at the evidence shows that A is confused about the nature of philosophical analysis. This point also applies to other kinds of analysis. For example, if some mathematicians think they have a proof that an angle cannot be trisected with compass and straightedge alone, then it is pointless for them to examine someone's claim that he has succeeded in performing the trisection.

Certainly the complexities of the issues surrounding disembodied survival preclude the likelihood of a knock-down, drag-out proof of impossibility in the way that there can be for the mathematical case. Still, the way to counter the philosophical analysis is not dissimilar to the way one counters a mathematical analysis—by finding error with the analysis. Presumably the person who thinks disembodied survival is impossible has already considered what would count as evidence against his thesis by reflecting on hypothetical examples. Very likely the kinds of examples he will have considered are more powerful than any evidence actually mustered by those who believe in disembodied survival. If the skeptic thinks he has a good way to handle his own hypothetical counterexamples, then he hardly has any reason to examine the less powerful examples that the believer has to offer.

Empirical evidence of precognition does not, in the opinion of many philosophers, fare any better than evidence for survival. If precognition involves the idea that future events determine present events, then precognition is logically impossible. At any rate, there are many good arguments that causes cannot follow their effects. Why suppose that cognitive acts are the only effects that could precede their causes? Why not suppose that a window that breaks at 3 P.M. has not yet been caused to break but at 3:15 P.M. the cause will occur? The idea is perfectly senseless, but I suppose it is one of the tiresome tasks of philosophers to detail its senselessness.

Perhaps, though, precognition does not entail that the future causes the past. "Precognition" may be just a label for the fact that certain people are able to predict events beyond what it seems possible to do. But the evidence for this is unwarrantable because the experiments designed to prove this have been replicated with subjects that cannot possibly have ESP abilities. Helmut Schmidt has made precognition and psychokinesis experiments on cockroaches; Cleve Backster has made experiments on yogurt; and W. J. Levy has made them on chicken eggs. If Levy had made his experiments on cigarette ashes I trust no one who is rational would accept his interpretation of the results as evidence for the precognitive or psychokinetic power of ashes. What is at stake, then, is whether I am right in considering the testing of chicken eggs to be as absurd as the testing of cigarette ashes. The fundamental argument is that not every entity is a possible subject when "subject" denotes something able to have experiences. One might concede this but ask how we know eggs don't have experiences. I suppose one might ask the same about ashes. In either case I think the answer is that we are not really in such dark ages and that if we
understand what *having an experience* is we can rule out both immediately. Moreover, we have good reasons to believe certain mental abilities are conceptually related to having a language. Precognition and psychokinesis are amazing abilities, if they exist, and not the kind of abilities a thing could have if it lacked even a rudimentary language, but it is senseless to suppose it could be trying to influence the course of the world without its possessing some conceptual machinery.

Schmidt's experiments are widely regarded in ESP circles as among the most impressive experiments establishing ESP. However, if experiments performed on entities that can have no experiences are similar in design and results to experiments on humans, then if the former experiments do not establish ESP for the entities incapable of experiences the experiments done on humans cannot rightly be taken as establishing ESP for humans. To illustrate this point consider the experiments done by Clarence Leuba. Leuba first machine-shuffled decks of cards and then matched the cards from the different decks. The first deck was the "subject" predicting the cards of the second deck. The matchings gave results so statistically significant that a less rational person than Leuba might have attributed precognitive powers to the first deck. Leuba, however, realized he was dealing with "subjects," not subjects. Suppose one performed the experiment substituting humans for the first deck. Then, if Leuba's experiment does not show precognitive abilities for a deck of cards, the second experiment, being structurally identical, does not establish precognitive abilities for the humans.

Let me now turn to the third member of this triumvirate—psychokinesis (PK). What makes PK so wildly implausible is that no one knows even how to try to exert a psychokinetic effect on things. One can't bring about an outcome without bringing about the means to that outcome. If I will the face-up of a die to be a six, my willing must come to nought unless I can also bring about the movements of the die. For surely how the die ends up is determined by its movements. And I take it that it is an indisputable fact that those who will the outcome of dice do not also bother to will the movements of the dice. One can take the matter further and say that nobody knows even how to try to will the movements of the dice. For in order to try one must know what constitutes a try. A try is not a mere tensing of muscles, a screwing-up of the brow, or a focusing of attention on some desired result. Try, for instance, to will Mt. Everest to move four inches to the left. Now try willing it to move five inches to the left. What did you do differently? Why would someone regard thinking of Everest and saying "Move, Everest, move!" as constituting a try, even if only an exceedingly poor one? To believe you are trying is no guarantee that you are trying. Or, at best, mere belief that you are trying guarantees trying in only the most jejune sense of the term; so there is no relationship between believing you are trying and succeeding. Consider someone who tries to move Everest by putting sugar in his coffee. Is this more or less ludicrous
than saying “Move, Everest, move!”? Neither “try” is part of a rational plan, and no one can succeed without a rational plan except by luck (unless the act is a particularly simple one).

If willing an event to happen is to have any chance of being efficacious, then it must have logical features that distinguish it from mere wishing. If I merely wish that this paper gets written, nothing will happen. Clearly every case of psychokinesis described in the ESP literature amounts to nothing else but wishing. A man who says to himself, “Six, six, six!” is not trying to influence the outcome of a roll of the die; he is merely wishing for an outcome. Suppose, in any case that sixes come up one-third of the time over a very long haul whenever Smith wishes for sixes. What should we make of this? Well, what should we make of the following? Smith has no idea I am rolling dice, but I subsequently learn that during the course of my phenomenal run of sixes he has been putting sugar in his coffee. If sanity requires my not drawing any connection between Smith’s sugar addiction and my successes, then it equally requires my not drawing any connection between his wishing for successes and getting successes. Perhaps we would have a mystery to unravel if a person’s wishes correlated highly with successes; but, given what we know about the logic of wishing and trying, we have no good reason to postulate that the mystery would point to psychokinesis.

V

Lastly, a few words about experimental precautions. First, any experiment is unsatisfactory if it is agreed to beforehand by the subject, for the experiment then becomes his, not the investigator’s. This is the fundamental lesson to be learned from the history of magic. The ingeniousness of magicians can never be overestimated. Second, there can be no compromising with half-baked ideas about the “need for sympathetic observers” or with the claim that “the subject performs well only for certain tasks and not necessarily for others.” (He is excellent working with pinochle decks but not rummy decks.) The fact is that the subjects and experimenters, if nonfraudulent, know nothing about what conditions are good for ESP, and it is noteworthy that the most impressive nonexperimental anecdotes are unrelated to “favorable conditions.” So the best place to conduct a seance is on a sandy beach in broad daylight, with all eyes wide open and no tables or other props present. Mediums who refuse to work under these conditions should be dismissed without further ado.

The best experiments will bypass the need for statistical analysis and, indeed, not be susceptible to it. Up until now statistical analyses have been used because investigators have been testing for ESP ability, a term that implies a disposition to get results above chance expectations. But a decisive experiment would provide confirmation that a person has had an ESP experience regardless of whether he is able to repeat his performance.
When certain phenomena are genuinely established, then talk of “odds against chance” is downright silly. What, for example, is the probability that Woodrow Wilson was once President of the United States?

The kinds of experiments that would be impressive have never been done, and I fear the reason is obvious—there is not the slightest chance that any subject would have an ESP experience. When I say the reason is obvious, I mean it quite literally. It is obvious to ESP investigators, too. However, they would say that perhaps ESP doesn’t occur under such unfavorable conditions. Perhaps indeed.

Notes

4. For Schmidt, see “Clairvoyance Tests with a Machine,” Journal of Parapsychology, 1969, and also “PK Experiments with Animals as Subjects,” Journal of Parapsychology, 1974. For Levy, see “Possible PK by Chicken Embryos to Obtain Warmth.” Journal of Parapsychology, 1971. Backster’s work has been reported in the popular press but I cannot now locate any specific references. Marcello Truzzi, editor of Zetetic Scholar, informs me that Backster’s work is not highly regarded in the ESP community and hence I ought not to try to capitalize on his follies.
5. See, for example, Beloff’s “Seven Evidential Experiments,” Zetetic Scholar, op. cit.

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