Outracing the Evidence: The Muddled 'Mind Race'

Targ and Harary's much-publicized case for the reality of psi and the validity of remote viewing is filled with exaggerated and unsupported conclusions. Their careless scholarship leads to new deceptions.

Ray Hyman

RUSSELL TARG is a physicist with patents in optics and laser physics. He also has devoted much of his adult life to research on psychic abilities. In collaboration with Harold Puthoff, in 1972 he originated the experiments on remote viewing at the Stanford Research Institute (now SRI International). He and Puthoff also gained considerable publicity for their experiments with Uri Geller. Targ and Puthoff summarized their earlier work on remote viewing and Uri Geller in their book *Mind Reach* (1977).

In many respects Targ's new book, *Mind Race: Understanding and Using Psychic Abilities,* co-authored with Keith Harary (1984), is an updated version of the earlier book.

Harary, a psychologist, is well known both as a parapsychologist and as an apparently successful percipient in parapsychological experiments. He and Targ founded Delphi Associates, an organization that sells psychic consulting services to individuals and businesses seeking advice on investments, exploration, or other important decisions.

Although Targ and Harary inform us that both the Soviet and the American defense establishments spend millions of dollars on psychical research, the "race" of the title does not refer to the competition for psychic superiority between the superpowers. Instead, as the authors put it:

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> The Mind Race is a race to determine the future of your own consciousness before other forces decide that future for you. We must develop our ability to experience compassion and empathy with our fellow creatures, before we lose contact with our own humanity and exterminate one another over an ideological difference of opinion, or for some similarly foolish reason. The Mind Race is not a race between nations. Though the U.S. and Soviet governments are heavily involved in psi research, we are all in a more vital and personal race to determine whether we will be able to wake up to our deeper potential before we have exhausted the limited time available to us.
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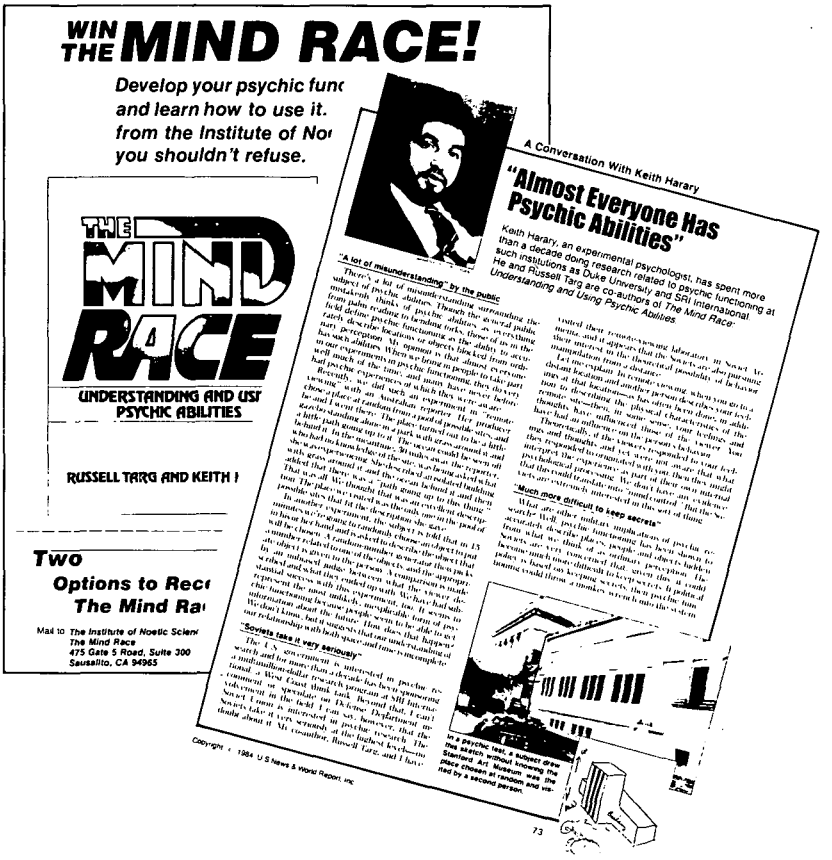
> As a society we are in the process of making wide-ranging decisions about our evolutionary future. This decision is in our hands right now. The quality of future life on this planet will be determined for us by others if we do not choose to participate actively in determining our own destiny. We do not believe that any psychically sensitive human being would choose to live in a future that is dominated by robots, especially if we are to be the robots. We believe that our future must include psychic functioning if we are to achieve our full potential as human beings. We call this requirement the psi imperative. [p. 246]

The stakes are high. If Targ and Harary are correct, we have to enter the Mind Race and develop our psychic powers or end up as robots subject to the manipulation of others. But what if we lack psychic abilities? Or, if we have them, how can we develop them? Not to worry. The authors assure us that we all possess such powers. Furthermore, they supply directions for developing them. "It is past time for bringing psi into the open, where everyone can benefit from a realistic awareness of it. We believe it is time for all of us to claim our right to function psychically. You own your own mind. It is important not to give it away, or fail to use it to its full potential. So get going! You have to enter the Mind Race in order to win" (p. 246).

The authors' intentions are clear. They would like each of us to follow their directions and develop our inherent psychic faculties. They imply that some form of world utopia would automatically follow once each of us has heeded their advice.

But, as they see it, obstacles prevent many of us from making this commitment. Gurus, superpsychics, and occultists frighten and mislead many of us by depicting psychic functioning as special, abnormal, or available only to the initiated. The media portray psychic powers as weird, evil, or dangerous. Organized religion views such powers as satanic in origin. And critics, for what the authors assert are ulterior religious and philosophical motives, loudly proclaim that psi does not exist. "To those who refuse to develop their psychic abilities it makes little difference whether the force that manipulates them into repressing their human potential is organized religion, cults, materialistic critics, or the mass media. The end result of such repression is the same no matter where it originates"



Promotion for *The Mind Race* and interview with Harary in *U.S. News* and *World Report*

(pp. 245-246).

Targ and Harary's goals of creating a better world by helping us gain access to our psychic powers assume the truth of a number of propositions. I would list them as follows:

1. Psychic functioning, or psi, is real.

2. The reality of psi has been scientifically established beyond any reasonable doubt.

3. The individual reader can test the reality of psi by personal experience in demonstrations suggested by the authors.

4. Psi is normal. It is a natural human function and does not depend on secret or occult rites, special states of mind, or abnormal circumstances.

5. Psi is universal. It is not a special gift. We all have the potential for psychic functioning.

6. Psi can be developed through simple exercises that help to discriminate valid psychic signals from "mental noise."

7. Psi can be put to practical use in any situation where decisions must be made with inadequate information, such as gambling, investing, finding parking spaces, etc.

8. It is important that we all develop and employ our psychic powers to the fullest.

The most basic claim, of course, is that psi is real. The arguments of the book make sense only if this claim is true. This "totally convincing book" (according to the dust jacket) employs a number of different grounds to convince the reader of the existence of psychic functioning. For the scientific justification they point to the list of 28 "published formal experiments" on remote viewing that they append to the book. Even more compelling, as far as the average reader is concerned, are the authors' accounts of the many impressive qualitative descriptions of targets by viewers and the successful applications of psi to predicting silver futures and the outcome of gambling choices. Readers are also urged to follow the directions and experience their own psychic success.

The Scientific Case for Psi

Let's look first at the scientific case they present. This is supported entirely by the published experiments on remote viewing. The phrase "remote viewing" was coined by Targ and Puthoff in 1972 as a neutral term to describe the phenomenon they believed they were capturing in their experiments at the Stanford Research Institute. These experiments employed at least three participants. A viewer, or percipient (the psychic), was isolated with an experimenter (the interviewer) in the laboratory. A second experimenter (the out-bound experimenter, or "beacon") then drove to a randomly selected geographical location (the target site) within a 30-minute drive from the laboratory. While the beacon was at the target site, the viewer described his or her impressions of the scene to the interviewer, and often made drawings as well. When the trial was over, the beacon would return to the laboratory and then all the participants would visit the target site to give the viewer feedback about how well the impressions had matched the actual target.

After a series of such trials (usually 7 or 9) had been conducted with a given viewer, the descriptions and drawings made by the viewer for each session were given to a judge, who then visited each site and ranked all the descriptions from best (a low score) to worst (a high score) according to how well each matched the target. If the agreement between the viewer's description and the actual target was simply a matter of guesswork, then, for example, with 9 possible target sites we would expect to find that the average rank of the descriptions would be 5. If the descriptions were

actually related to the targets (by psi or some other means) then we would expect the rankings to be lower. In fact, this is what Targ and Harary claim the data from their own and other experiments on remote viewing have shown. In more than half the series the rankings have correlated significantly with the target sites.

Targ and Harary have no doubts that the scientific case for the reality of remote viewing has been established beyond all reasonable doubt. "In an examination of the twenty-eight formal published reports of attempted replications of remote viewing, Hansen, Schlitz, and Tart at the Institute for Parapsychology found that more than half of the papers reported successful outcomes." Part of this report is included as an appendix to the book. Hansen et al. compiled reports of remote-viewing experiments conducted during the years 1973 through 1982. They concluded: "We have found that more than half (fifteen out of twenty-eight) of the published formal experiments have been successful, where only one in twenty would be expected by chance."

To both the casual and scientifically trained reader the fact that 15 of 28 "published formal experiments have been successful" should seem rather impressive. But a more careful study of the list of experiments suggests that this data-base may not be as strong as implied.

The scientific literature in any given field consists of formal experiments published in scientific journals. Only those papers that survive a rigorous screening and revision procedure make it into print. In fact, many scientific journals reject more than half of the papers submitted to them. Rarely does a paper get published as submitted. Manuscripts are sent to two or more referees who are experts in the subject area of the manuscript. These referees advise the editor about whether the paper is of sufficient merit to be a candidate for publication. They also carefully scrutinize the manuscript for inconsistencies, unsupported claims, adequacy of the statistical analyses, unclear arguments, and so on. Typically, before a manuscript finally is accepted for publication, it has gone through several revisions as a result of this refereeing process. Such a screening process is not perfect and some defective papers do get published. But, for the most part, the process ensures that scientific reports have passed a number of tests.

Only 13, or less than half, of the "published formal experiments" meet the standards of having been published under refereed conditions. The remaining 15 were published under conditions that fall short of scientific acceptability. Some appeared as brief reports or abstracts of papers delivered at Parapsychological Association meetings or some other parapsychological conference. In addition to not having undergone the standard refereeing process, such abstracts present insufficient documentation for scientific evaluation. The same can be said for the other studies that appeared in print only as brief or informal reports in book chapters or letters to the editor.

The scientific case for remote viewing, then, rests upon 13 scientifically reported experiments, 9 of which are classified as "successful." Seven of these experiments were conducted by Targ and Puthoff. The remaining 2 came from two other laboratories. This harvest of 9 "successful" scientifically reported experiments emerging from just three different laboratories over the past 12 years hardly seems to justify the strong impression conveyed by the authors that remote-viewing studies have been successfully carried out in large numbers in laboratories all over the world. ("In laboratories across this country, and in many other nations as well, forty-six experimental series have investigated remote viewing. Twenty-three of these investigations have reported successful results and produced statistically significant data, where three would be expected" [p. 5].)

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But even 9 "successes" out of 13 tries would not be bad if the successful studies met reasonable standards of adequacy. But all 9 suffer crippling weaknesses. At least 3, and possibly more, are what I would classify as "retrospective experiments"—experiments not explicitly planned in advance but apparently reconstructed from separate trials that were originally conducted simply as demonstrations. According to Kennedy (1979a), remote-viewing experiments have employed the wrong statistical test. When Kennedy applied a more appropriate statistical test he found, for example, that only 2 of 6 experiments reported by Puthoff and Targ were significant, whereas they had concluded that 5 were significant. This alone would reduce the total number of successful remote-viewing experiments to 6. Of these 6, all but one suffer from a "fatal flaw" that I first pointed out in 1977 (Hyman 1977b) and Kennedy (1979b) independently noted two years later. The one experiment that escapes this "fatal flaw" unfortunately suffers from another serious drawback. I will discuss these flaws later in this article.

Marks and Kammann (1978) raised serious questions about the validity of the findings on the remote-viewing experiments with Pat Price (Puthoff and Targ 1976). Marks obtained copies of the five unpublished transcripts from the series with Price. He found a number of clues in the transcripts to target sites without assuming the operation of psi. For example, in one transcript the interviewer mentions the nature reserve that had

been the target for the previous day. Such a clue obviously helps the judge by informing him that the transcript in question should *not* be matched with the nature reserve. In addition, if the judge has information on the order of the target sites, it enables him to uniquely identify the transcript with its intended target. Using such clues within the transcripts Marks successfully matched each description against its intended target without actually visiting any of the sites.

Tart, Puthoff, and Targ (1980) responded to this critique with three rebuttals. Charles Tart, a parapsychologist who had not been involved in the original experiments with Price, reviewed the transcripts and removed "all phrases suggested as potential cues by Marks and Kammann" as well as "any additional phrases for which even the most remote *post hoc* cue argument could be made." The edited series was rejudged by a new and "qualified" judge who was able to successfully match seven of the nine transcripts. The parapsychologists argued that this successful rejudging refuted the "cueing-artifact hypothesis" as it applies to the Price series. Furthermore, they claimed that the hypothesis could not apply to their subsequent successful experiments because the transcripts were carefully edited to avoid such cues. Finally, they argued that the successful replication of their experiment in other laboratories confirms the reality of their psychic interpretation.

There is no need here to discuss the continuation of this controversy (Marks 1981; Puthoff and Targ 1981). Possibly this controversy as well as the critique of the statistical analysis being applied to nonindependent trials has helped to prevent the participants from realizing the full implications of the criticism raised by myself and Kennedy. Neither a more conservative test nor the editing out of obvious cues referring to previous targets can overcome the defect we have pinpointed. Once the viewer and the interviewer have been given feedback about a particular target, then *every* word and phrase in the subsequent descriptions of targets has been tainted. And it is not just the words and phrases that have been included but also those that have been excluded that create the problem.

The problem arises from the fact that the viewer is provided immediate feedback after each session. Say that the target for the first session was the Hoover Tower at Stanford. This will almost certainly influence what both the viewer and the interviewer say during the second and subsequent sessions in the same series. Almost certainly the viewer, during the second session, will not supply an exact description of the Hoover Tower. So, whatever the viewer says during the second session, a judge should find it to be a closer match to the second target site than to the first one. Now, assume that the second target site happened to be the Palo Alto train station. The viewer's descriptions during the third session will avoid describing either the Hoover Tower or the Palo Alto train station. We do not need to hypothesize something as mysterious as psi to predict that a

judge should find this third description a better match to the third target site than either of the first two. As we add sessions, this effect of immediate feedback should continue to make the correlation between the viewer's descriptions and the target sites better and better.

". . . Not one of the several skeptics who have seriously attempted to replicate the remote-viewing experiment has succeeded."

Every experiment that has followed the original SRI protocols with immediate feedback is irrevocably flawed because there is no way of separating out a true psychic signal from the information in the transcripts provided by the fact that the viewer knows the previous target sites. So far as I can tell, only one of the nine "successful" experiments does not contain this fatal error.

This experiment (Schlitz and Gruber 1981) suffers from its own serious problems. Gruber, who was the beacon, also translated the viewer's target descriptions into Italian for the judging process. The translator knew which description went with a given target. With almost an infinite number of choices to be made in translating a description from English to Italian, and with the translator's task of trying to capture in the new language what the viewer "meant," it would seem inevitable that translations by the beacon would match the intended target sites. As just one example, assume that, as a part of her description, the viewer had mentioned "wood." One can translate the English word "wood" into Italian in a number of ways depending upon whether the translator believed the wood in question referred to the trunks of trees, the logs, the finished boards, the wood in furniture, or some other form of wood. If, in this case, the actual target site was a forest, then it seems reasonable that the translator would be strongly influenced to translate the English description to fit this known feature of the target. Given this blatant violation of controls, skeptics should not be surprised to learn that this experiment yielded the highest degree of significance of any remote-viewing experiment.

The foregoing considerations should make it clear that the scientific case for remote viewing rests on very shaky foundations. Further problems could be mentioned. For example, not one of the several skeptics who have seriously attempted to replicate the remote-viewing experiment has succeeded. I even know of two cases, neither yet published, in which a skeptic and a parapsychologist collaborated on a remote-viewing experiment with negative results.

Many problems involve inadequate documentation. In the early years of science, the ideal of a scientific paper was a report that was sufficiently complete so that any competent reader could both fully evaluate the results and repeat the experiment. The same ideal holds today, but with journal space costly and limited some practical compromises have to be made. Not all the data or complicated details of procedure can be included, but to the extent this is so the scientific community understands that the omitted details and data are publicly available and the authors are obligated, within the constraints of expense and practicality, to make them available to serious readers. A hallmark of scientific research is this public availability of the data for scrutiny by all interested parties.

The problem of public availability of the data is especially critical in the case of remote viewing. The raw data upon which the scientific case is built consists of the protocols or individual descriptions of targets provided by the viewers. It would take up a prohibitive amount of journal space to publish the complete set of transcripts from an experiment that consists of the typical nine or so trials. Without access to the original transcripts, the reader gets to read only those one or two exceptional transcripts selected by the authors. And, for the most part, only excerpts from the chosen transcripts are supplied.

"The reader gets to read only those one or two exceptional transcripts selected by the authors. And . . . only excerpts."

The scientific public would never have been aware of the cues available in the Price transcripts if David Marks, overcoming strong resistance from Targ and Puthoff, had not obtained the original data. Because of the controversy that had arisen about those transcripts, Dr. Christopher Scott, an English mathematician and former parapsychologist, requested that Puthoff and Targ send him copies of the transcripts to signal to the scientific community that, in fact, these data were available for public inspection by responsible and qualified scientists. When his initial written inquiries failed to result in his getting the transcripts, Dr. Scott publicly repeated his request to Targ and Puthoff at the Parapsychological Association meeting in Cambridge, England, in August 1982. Puthoff admitted that Scott was entitled to inspect the transcripts and indicated that he would make them available for this purpose. Dr. Scott happened to be visiting California in the spring of 1983. Since, despite further requests, he still had not received copies of the transcripts, he made a special trip to

SRI International to put his request to Puthoff directly. Unfortunately, Puthoff could not meet with Scott because of an illness in his family, but none of his associates would allow Scott to see the transcripts. Scott has persisted in his quest to see the data, but Puthoff and Targ, two years after they promised to make them available, still prevent public scrutiny.

Targ and Harary depict their critics as unreasonable dogmatists. They put all the blame for the failure of their work to gain scientific acceptance upon the religious fanaticism of blind materialists. Tragically, Targ does not realize how much of the blame must be attributed to his own unscientific behavior. By allowing only a small band of select initiates to inspect their raw data, Targ and Puthoff appear more like the leaders of an occult society who jealously guard their secrets rather than scientists who try to make their case in the public arena.

I do not have to develop my psychic powers to anticipate Targ and Harary's next reaction to the preceding critique. They preview their rebuttal, among other places, on pages 174 and 175 of *Mind Race*. Here they describe their reactions upon listening to the critics at the meeting of the Society for Psychical Research and the Parapsychological Association in August 1982:

> One question was repeatedly asked at this centenary conference: What has been accomplished in a hundred years of research? An answer that most of the scientists in the field would support is that as a result of thousands of laboratory experiments, comprising millions of trials, any fair-minded man or woman should be convinced beyond reasonable doubt that psi exists, and might possibly even be important. But many people at the conference did not share that view. Some were critics, and some were psi researchers. . . . It became clear from listening to these critics that any experiment, no matter how carefully carried out, may reveal a flaw in retrospect. There is always something that could have been done better. *This is true in every field of science*—and in recent years there have been many more examples of fraud in medical research than in psi research.
>
> Hearing what the critics have to say, we began to realize that psi may never be accepted into the mainstream of science on the basis of laboratory experimentation alone.

Like many other things the authors have to say, one can find circumstances and contexts in which the foregoing remarks apply. Some critics do fit this description. And not one will deny that after the fact we can always find in any experiment a defect or subtle variable that was overlooked. But the authors have again used an excuse that makes sense in some other context to avoid dealing with legitimate criticism.

The "critics" who gave papers at the 1982 conference were Chris Scott, Susan Blackmore, Piet Hein Hoebens, and myself. Scott is a former parapsychologist who has become a critic, but he is recognized by para-

psychologists and others as scrupulously fair. He maintains good relations with psychic researchers and has written extensively for their journals. Susan Blackmore is a practicing parapsychologist. She has become skeptical of many claims in her field as a result of a decade of research in which she has failed to replicate many of the major findings. She remains in the field because she feels parapsychology badly needs friendly and constructive critics. Hoebens is a Dutch journalist who has gained an international reputation as a skeptic who leans over backwards to give the parapsychologists a fair hearing. All of us on the panel had agreed ahead of time that our task was to provide constructive and responsible criticism.

> *"Targ and Puthoff appear more like the leaders of an occult society who jealously guard their secrets than like scientists. . . ."*

The flaws I have attributed to remote-viewing experiments in this article are definitely not flaws that are found retrospectively as new and better experiments emerge. They are the very same flaws I wrote about seven years ago (Hyman 1977). Kennedy (1979a, 1979b), a parapsychologist, complained about these same flaws along with others. Unfortunately, Targ and Puthoff, in their haste to dismiss any criticism as having ulterior motives, have kept repeating the same mistakes. Other researchers in remote-viewing slavishly followed their example. The tragic result is seven more years of wasted research.

The Nonscientific Case for Psi

The bottom line is that there is no scientifically convincing case for remote viewing. As the preceding quotations indicate, Targ and Harary, while insisting the scientific case for remote viewing is overwhelmingly strong, concede that they have little hope of convincing critics and the scientific establishment with such data. Consequently, the authors employ two other modes of argument to persuade the reader that psi is real. They supply many qualitative and compelling accounts of psychic successes, and they urge their readers to try experiencing psi for themselves.

Many of the qualitative accounts illustrate striking correspondences between portions of a transcript and the actual target during a remote-viewing session. In one example, the target was the Palo Alto Airport tower. The verbatim transcript and drawing made by the viewer, Hella Hammid, indeed seem to match the target well beyond any forced match-

ing that one usually can achieve between a scenic description and a reasonably complex geographic site. But this particular session occurred after three preceding unsuccessful sessions. A skeptic might want to study all the transcripts in this series before jumping to conclusions about possible psychic correspondence.

This particular transcript obviously has been selected from hundreds available to the authors. Presumably it is presented in its entirety just because it appears to be a striking match. The authors present a number of other apparently striking matches between description and target, but in most of these cases only selected portions of the transcript are given. Again, the skeptic would want to study the entire transcript as well as all the other transcripts in the series.

"This tendency to find meaningful and compelling matches between verbal descriptions and arbitrary targets is quite pervasive. It helps account . . . for the success of character-readers and astrologers."

Marks and Kammann (1980) employ the phrase "subjective validation" to label the subjectively compelling matches that viewers and judges discovered in their remote-viewing experiments. When they initiated their series of experiments in an attempt to replicate the remote-viewing experiments, Marks and Kammann first thought remote viewing was, in fact, occurring. Both they and their viewer, after getting the immediate feedback from the visits to the target sites, found amazing correspondences between the viewer's descriptions and the target. When the judging began, the judges also found amazing correspondences between the transcripts and the targets to which they matched them. Unfortunately, the judges' matchings of targets to transcripts did not correspond with the factual pairings in the experiment. Even when told of this, the viewers did not change their belief in the success of their remote viewing.

This tendency to find meaningful and compelling matches between verbal descriptions and arbitrary targets is quite pervasive. It helps account, for example, for the success of character readers and astrologers (Hyman 1977a). Furthermore, once an individual has found such a match, it is difficult to dissuade him or her from believing in the accidental nature of the correspondence (Nisbett and Ross 1980).

For such reasons as these, striking and "meaningful" correspondences

between target and descriptions cannot be accepted as scientific evidence. This is why the elaborate blind-judging and complicated statistical methodologies have been devised. The scientific enterprise aims at separating out true correlations from subjectively compelling, but spurious, ones.

Unfortunately, the lay reader as well as the uncritical scientist will more likely be swayed by the colorful and vivid qualitative illustrations than they will by the abstract and quantitative scientific arguments. Nisbett and Ross (1980) cite abundant evidence to this effect. So we can anticipate that Targ and Harary will succeed in their tactic of bypassing the scientific case in favor of nonscientific arguments. They will succeed, that is, if their goal is to gain the adherence of their readers to their claims rather than to arrive at the truth.

Targ and Harary also describe successful applications of psi. An interesting example is the successful use of remote viewing by Elisabeth Targ to predict the winner of the sixth race at Bay Meadows. She picked a horse named Shamgo, and students from all over her college dormitory contributed to a betting pool. Shamgo won and paid six to one. As in other such accounts in this book, we are not told if this was Elisabeth's first attempt at predicting races or if she ever tried it again. Targ and Harary also retell the story of their venture into psychically predicting the silver-futures market. They claim to have correctly predicted both the magnitude and the direction of the change in all nine forecasts they made in the fall of 1982. Again they fail to tell us about any preceding or future forecasts (although on NOVA's program on ESP, the narrator casually mentioned that Targ and Harary's later attempt to repeat this feat failed).

The Proof of the Pudding Is Not in the Eating

Psychologists also will not be surprised if the readers who follow the authors' recipes for developing their own psychic powers become believers in the reality of psi. The authors write that readers can test the reality of psi for themselves. They supply general guidelines to follow to develop latent psychic abilities. The basic idea makes some sense in terms of general learning principles. If we accept their argument, then at any point in time our conscious experience consists of sensory impressions, memories, and inferences. In addition, some of this content may be impressions that have arrived psychically. If the viewer attempts to describe the psychic impression, the description is often contaminated and transformed by the viewer's expectations, memories, and current sensory impressions. The authors refer to this contamination as "mental noise." Developing one's psychic abilities involves learning to discriminate true psychic signals from "mental noise." This can be achieved, according to the authors' optimistic projections, by indulging in exercises in which immediate feedback supplies

us clues as to which of our impressions were truly psychic and which were mental noise.

One exercise involves finding a parking place. Readers are urged to visualize a certain area of the city in which they want to find a parking place. When they get some sort of impression of a possibility, they drive to that spot. If the spot is occupied, they try again. They are to keep this up until they either find a parking spot or run out of gas. By repeatedly trying this exercise the learner, allegedly, can gradually improve the ability to discriminate between those impressions that work and those that do not. Exercises in playing black-jack, doing remote-viewing, anticipating traffic jams, and so on, are similar.

Targ and Harary confidently put forth such exercises as a way for the readers to find the truth for themselves. But we do not have to postulate psi to predict many of those who try such exercises will end up believing they are experiencing psi. For a sampling of just some of the enormous amount of psychological evidence for this expectation see Nisbett and Ross (1980). The authors do not bother to warn their readers of the traps that await them. Instead of forearming the readers, they *disarm* them. Consequently, instead of a path to the truth, they supply a recipe for self-deception.

Several things are wrong with such exercises. For one thing, one of them can succeed for reasons unrelated to psi. Indeed, the authors talk about developing intuition as if it is the same thing as psychic functioning. Some learners might actually improve their ability to find parking places. In some shopping areas the southern boundary, for example, might tend to have more unoccupied spaces than the other sections (because of prevailing traffic patterns). As learners practice trying to home in psychically on a parking space, they may gradually learn to follow impressions that lead them to the southern boundary. Such learning could take place without any conscious awareness on the learner's part. Very likely, the learner will attribute this increasing success to developing psychic powers. Other unconscious cues, such as hearing a motor start up as an auto vacates a parking place, could also become part of what the learner comes to rely upon as psychic abilities.

But even without any actual learning taking place, several psychological mechanisms can easily contribute to the illusion that psychic abilities are gradually leading to more and more successful outcomes. These are well-known distortions of memory, thinking, and other cognitive processes. And it is dismaying, especially when one of the authors claims to be an experimental psychologist, that Targ and Harary do nothing to protect the reader from such powerful pitfalls.

Furthermore, Targ and Harary provide no evidence that learning to discriminate psychic signals from "mental noise" according to their directions can actually occur. They refer vaguely to their experience with

remote-viewing sessions. But they fail to hint at even one scientific experiment that suggests that such learning can take place.

Additional Problems

So far I have noted some serious weaknesses in the arguments for the propositions being asserted in *Mind Race*. My notes suggest a variety of other difficulties, but it would only make a long article much longer to try to list them all. In this section I want just to point to a few inconsistencies in the arguments of the book.

The key to developing psychic abilities, according to the authors, is learning to discriminate "mental noise" from true psi impressions. The authors repeatedly assert that their viewers become better and better at this with practice. Harary gives examples from his own experience as a viewer where he was actually able to indicate to the judge which of his statements were "mental noise."

Such a claim would seem simple to test, but the authors supply nothing but a few qualitative observations to back up their assertion. As a standard procedure, for example, each viewer, immediately after each trial, could review the transcript and indicate which statements are "mental noise" and which are true impressions. The experimenter could easily quantify such data and see whether the proportion of correctly identified statements increases with practice.

Furthermore, even if their claim is only partially true, it allows for an excellent control for the judging procedure. Each transcript could be divided into two transcripts—one part containing all the items identified by the viewer as "mental noise" and one part containing the items identified as true impressions. The judges should show high accuracy in matching the second transcripts and should be at chance in matching the first.

Nor do the authors face up to another inconsistency raised by their

claim. It is the practice in remote-viewing experiments of employing independent judges to gauge the correspondence between target and description. The researchers who use this paradigm claim that they cannot get adequate results if they employ the viewers as judges because of "mental noise" that interferes with their seeing the correspondences. One inconsistency is that in the Ganzfeld experiments, which started at the same time as the remote-viewing paradigm, the reverse seems to be the case. In those experiments, the percipients are used to judge the correspondence of their own descriptions against the targets. This is done because apparently the results from independent judges do not work as well. Despite this odd reversal, the claims for success in the Ganzfeld experiments equal those for the remote-viewing experiments.

"On almost every page [Targ and Harary] make assertions based on inadequate or nonexistent evidence."

A second inconsistency is that, if in fact the viewer is learning to discriminate true psi signals from "mental noise," then the viewer should be a better judge than an outsider. The independent judge, after all, has to deal with the entire transcript and has no way of gauging which statements should be ignored in trying to match transcript with target.

The claims for gambling successes employing psi also hint at a variety of inconsistencies. Millions of gamblers over the years have presumably employed hunches and intuition in making their bets. They have gained enormous amounts of immediate feedback that should have taught them, according to the theory advanced in this book, which of their impressions should be trustworthy and which should be ignored. Even if such learning is only partial and even if it occurs in only some of the gamblers, it should raise the odds in favor of the players by some percentage. Yet the gambling industry rests on the assumption that odds that are only slightly (one or two percentage points) in their favor along with other restrictions upon the betting will ensure them against serious losses. If Targ and Harary are correct, the casinos in Las Vegas, Reno, Monte Carlo, Atlantic City, and elsewhere should have long ago gone bankrupt.

A third inconsistency arises from evolutionary theory. Targ and Harary assert not only that we all have latent psychic abilities that can easily be developed but that we *must* develop them if we are to realize our human potential and escape becoming robots. This first of all raises the question of the evolutionary forces that allowed such a capacity to develop and yet remain unused. Presumably, it must have had some survival value

to have developed in the first place. But, then, we have to ask why it is now latent and needs special exercises to develop.

I can imagine possible answers to these inconsistencies, but it is strange that the authors have felt no obligation to deal with them.

Going Beyond the Data

In his review of Targ's earlier book *Mind Reach,* Robert Ornstein (1977) wrote:

> Throughout the book the authors state their hope that the study of parapsychology will become primarily a scientific one in which speculations are firmly grounded in the evidence. In their own writing, however, Targ and Puthoff almost always go beyond evidence and claim they have proven their case when they have done nothing of the sort. In writing this book, the authors have done more harm, perhaps, to their own position and to their field of study than they have helped.

These words apply with equal force to the current book. Targ and Harary's most conspicuous faults are hasty generalizations and overstated claims. On almost every page they make assertions based on inadequate or nonexistent evidence. I have already given samples in the preceding sections. But to back up my own assertion, I will list a sample of some of the more blatant cases:

1. As already documented, the authors overstate greatly the strength of the scientific support for remote viewing. They strongly imply that 15 of 28 "formal published experiments" from laboratories all over the world were successful. But, if we deal with papers actually published under accepted scientific standards, only 9 "successes" can be counted. Of these, 7 were conducted by Targ and Puthoff and only 2 come from other laboratories. All but one of these "successful" experiments suffer a fatal flaw that I pointed out in 1977, as did Kennedy in 1979.

2. On the basis of just two remote-viewing trials conducted with the viewers in a submarine, Targ and Harary conclude that ocean water provides no barrier to the psi signal and that remote viewing is unaffected by seasickness. There is just no way such a conclusion can be drawn on the basis of just two data points. Even if the authors want to claim that remote viewing took place under these circumstances, they would need many more data points collected under the underwater conditions before they could say that no difference existed between this and land conditions.

3. Targ and Harary admit that they do not know if evil psychics can implant harmful thoughts in other people, but they do not hesitate to suggest steps that the readers can employ for "psychic self-defense." If we do not know if the disease exists, how in the world can we know if the

cure will work or even if it may cause harmful side-effects?

4. As already indicated, the authors provide elaborate instructions for developing psi but cite not one piece of scientific evidence that suggests that such instruction works.

5. Targ and Harary freely accuse critics of fraud on the basis of undocumented or unsubstantiated allegations. They try to smear Martin Gardner by writing that he

> criticized the NASA-supported ESP-teaching-machine study carried out at SRI in 1974. He falsely alleged that the subjects in this experiment tore up their unsuccessful data tapes, and only handed in the successful ones. He said in his article, "I am not guessing when I say that the paper tape records from Phase I were handed in to Targ in bits and pieces." We now know the reason he could say that he "wasn't guessing." This is because he recently confided to a fellow reporter that he had just made it up, "because that's the way it must have happened." The reporter was so shocked at this disclosure, that even though he is not particularly sympathetic to our work, he felt compelled to call up the SRI researchers to pass on this remarkable piece of news. [p. 157]

On its face this vicious slander does not stand up. First, it is based entirely on an undocumented statement by an unnamed reporter. Second, it just does not make sense for a journalist whose profession is based on the integrity of its members to make such an obviously damaging admission. When I read it, I could tell it was completely false, not only because I know Martin Gardner but also because I am familiar with the circumstances of his having made the claim about the tapes. He felt he could make this statement with confidence because he was given the information by an informant whom he has every reason to trust. To further compound the damage of this slanderous accusation, it was published in *Fate* magazine as the "Quote-of-the-Month." The "fellow reporter" to whom Martin Gardner supposedly confided that he had deliberately lied about the ESP-teaching-machine experiment turns out to be Ron McRae, the author of the recently published book *Mind Wars*. McRae has written to *Fate* magazine that he never made such a statement to Targ or anyone else. Instead, he did happen to mention to Hal Puthoff, who was then Targ's colleague at SRI, that he had overheard another individual make such a claim but did not consider it reliable. As a result of McRae's letter to *Fate*, that magazine published an apology and retraction in its October issue.

Targ and Harary continue this reckless abandon by asserting that CSICOP "was recently caught conspiring to deceive the public about some research results that did not fit their expectations." They go on to say that Randi and the rest of the CSICOP members "were exposed when a member of their group defected and offered documented proof of the deception. . . . It is clear that the goal of the psi-cops is to *control your ability to*

access and interpret information and to walk a beat in your mind" (pp. 157-158). The "documented proof" presumably refers to the charges made by Dennis Rawlins in his long attack upon three members of CSICOP published in *Fate* magazine. The incident refers to a controversy over the interpretation of data from a study by Michel Gauquelin. In cooperation with Gauquelin, three skeptics reanalyzed the original data and published an interpretation that was challenged not only by Gauquelin, but also, on certain obscure technical grounds, by Rawlins. All this was initiated before CSICOP was founded, and the project was never sponsored by the Committee. Randi, whom the authors obviously want to paint black, had nothing to do with the Gauquelin study. In addition, the debate involved complicated and subtle matters of how to interpret trends in the data, and no conspiracy to deceive or any other evils that Targ and Harary so carelessly invent were ever implicated.

6. The authors freely question the motives of those critics who disagree with them. "Some of these critics have ulterior motives for not wanting the public or the academic community to take normal psychic functioning seriously. In that, they are like anyone else who hopes to profit by misleading the public about psychic abilities. Critics, like cultists, can sometimes live off the controversy they generate. For example, one critic, now famous, was a minor entertainer until he began a nationwide crusade against psi research" (p. 156).

The "critic" they are talking about in the last sentence of the quotation is Randi, the magician. Randi was an established and well-known entertainer long before his attacks on Uri Geller. He is probably the best-known escape artist since Harry Houdini. It would be difficult to measure whether he profited or lost either professionally or financially from the publicity emerging from his critiques of psychical research. I know that he often gives up profitable engagements to attend conferences and give talks on his views of contemporary paranormal claims. From my personal acquaintance with Randi, I have little doubt that his motivations involve a love of his craft and a desire to prevent conjuring from being used to exploit scientists and the public. Motivations are of course complicated and elusive. I have been a critic of paranormal claims for at least 35 years. I am sure that my motivations have changed drastically over that period of time. And they are complex. Even today I would have a difficult time trying to give a full account of why I put so much time into it. But the complexities and multidimensionality of motivations do not deter Targ and Harary. Unencumbered by facts or proof, they freely and confidently assert which motivations guide the behavior of their critics.

If the critics were fair and honest, Targ and Harary believe, they would carefully scrutinize the parapsychological data and conclude that psi has been proved. But the critics, without having seriously examined the data, freely criticize the claims. This means, according to the authors, that

they have ulterior motives for not wanting psi to be true and for keeping the public from believing. In the same breath, Targ and Harary acknowledge that some critics, both within and outside the field of psychical research, have examined the data and still debate the claims for psi. No matter. They say that these critics, too, have religious and philosophical motives and deliberately distort the facts so as to mislead the public.

These seem to be the kinds of rationalizations that enable the authors to cope with the fact that many critics deny that the case for psi has been proved. This rationalization seems to provide a protective shell. It keeps Targ and Harary from facing the reality that the case for psi is much shakier than they would like to believe.

". . . Their book does a disservice to the attempts of other parapsychologists to make their field into a respectable and serious branch of science."

In many ways their book does a disservice to the attempts of other parapsychologists to make their field into a respectable and serious branch of science. The authors boldly assert that the accumulated data are sound, consistent, and scientifically impeccable. Only prejudice and ignorance prevents the scientific establishment from recognizing this fact. They fail to realize that the parapsycholgists have much work to do in order to get their house in order before they are ready to withstand the scrutiny of serious scientists.

Some major parapsychologists, fortunately, do recognize this problem. John Beloff (1976), a past president of the Parapsychological Association, told his colleagues: "I think that one thing we have got to recognize is that our field is so much more erratic, anarchic and basically subversive than we like to admit when we are engaged in our public-relations exercises. . . ." And Martin Johnson (1976), who holds the Chair of Parapsychology at the University of Utrecht, wrote: "I must confess that I have some difficulties in understanding the logic of some parapsycholgists when they proclaim the standpoint that findings within our field have wide-ranging consequences for science in general, and especially for our world picture. It is often implied that the research findings within our field constitute a death blow to materialism. I am puzzled by this claim, since I thought that few people were really so unsophisticated as to mistake our concepts for reality. . . . I believe that we should not make extravagant and, as I see it, unwarranted claims about the wide-ranging consequences of our scattered, undigested, indeed rather 'soft' facts, if we can speak at all about facts

within our field. I firmly believe that wide-ranging interpretations based on such scanty data tend to give us, and with some justification, a bad reputation among our colleagues within the more established fields of science."

Without a doubt, Targ and Harary's careless scholarship will contribute to the "bad reputation" that parapsychology still has among many established scientists. Perhaps it is equally unfortunate that this book may very well achieve the opposite of what the authors intend. They hope to demystify psychic functioning, put their readers in touch with themselves and the world, and to free them from false beliefs. Instead they have set the stage for new mystifications and self-deception.

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