

ESP Training

by Charles T. Tart, Ph.D. with Robert Neubert

Strong criticism has been leveled at ESP research over the years because the phenomena could not be repeated regularly. Since they could not, skeptics gloated that they did not exist.

Now, a research breakthrough soon may shelve such criticism. A study carried out under my direction at the University of California at Davis Psychology Department has taken a big step toward repeatability of ESP by helping people understand how ESP works and how it can be controlled.

The psychological processes involved in both ESP and ordinary perception are known to be a sequence of steps and actions assembled into a complex system. But until now, there has been no way to tune the system so subjects could *learn* to use ESP well, producing it under scientific conditions. Most standard experiments have used a deck of cards, with subjects guessing their faces and finding out how they scored after the experiment. Feedback as to whether a particular guess was right or wrong has been so delayed as to be useless. In fact, the lack of feedback has contributed to gradually decreasing ESP ability among subjects initially demonstrating it.

Recent studies of mine indicate that immediate feedback during experiments allows subjects with some initial ESP ability to keep using that ability, or even improve it. This application of learning theory was tested with students who had demonstrated ESP in pre-

liminary tests. Subsequent tests on ESP training machines provided immediate feedback. One was a four-choice Aquarius Trainer, available commercially, the other a Ten-Choice Trainer (TCT) I developed. Students trained on whichever machine they preferred.

Those training on the Aquarius demonstrated significant ESP. In the final study, the number of correct choices averaged by the subjects per run was well above chance— with odds of 2,500 to 1. (Odds of 100 to 1, or even 20 to 1, generally are accepted by parapsychologists as being significantly above chance).

The real breakthrough came with the TCT. Subjects who trained on it showed incredible amounts of ESP. The odds against duplicating their success by mere chance are greater than a million billion billions to 1! Even a skeptic might concede that this enters the realm of the “statistically significant.”

No subjects who showed ESP in the final study showed significant declines with either machine. Almost half showed individually significant ESP ability. At least two actually showed learning.

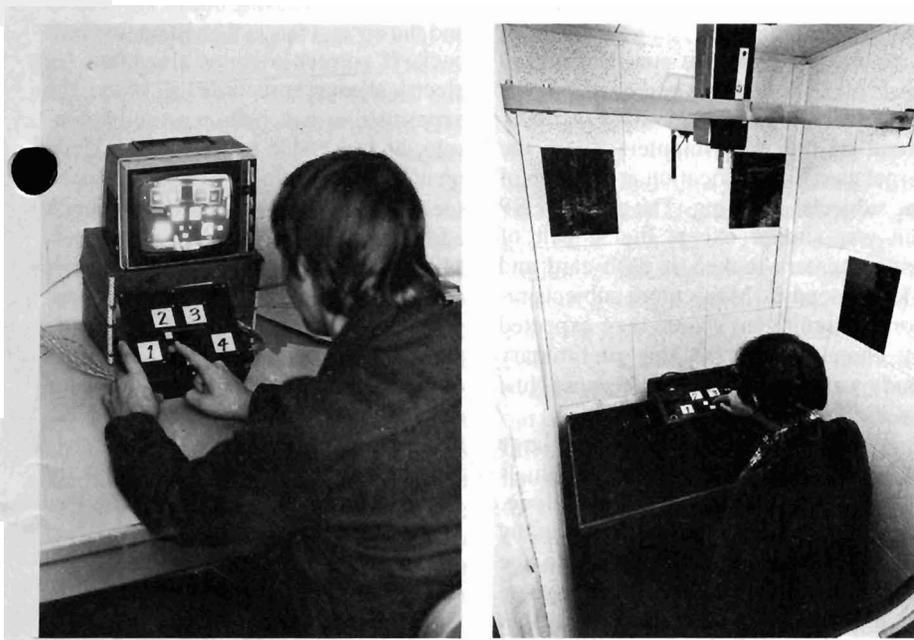
(To test the theory further, a refined version of this study currently is being conducted at the Davis campus. Collaborating with me and my students is John Palmer, a Ph.D. research associate formerly at the University of

Virginia. Our experiments should be concluded and analyzed by summer).

Before getting into details of the feedback study, let's look at some factors affecting ESP. Science progresses by noting that a phenomenon occurs, then systematically varying the conditions under which it occurs to find out what affects it. Our scientific understanding of ESP is poor because in parapsychological research, ESP phenomena occur at a low level or not at all. About a third of all parapsychological experiments yield statistically significant evidence for ESP. This indicates ESP exists, for by chance alone, we would expect only one in 20 or fewer experiments to be significant. But ESP does not occur at will. And when it occurs, often the size of its manifestation is very weak.

In most ESP tests, a sender looks at a target and tries mentally to transmit it to a receiver. Apparently an unknown form of energy is involved in the transmitting and receiving of such telepathic messages. ESP has been shown to work through large amounts of physical shielding. It also can be transmitted over vast distances, even though millions of other people probably are putting out irrelevant and conflicting ESP energy in between. This irrelevant energy is called random noise.

On a more localized level, systematic noise is energy which gives a slanted message between sender and receiver. It is somewhat like a television censor



The experimenter (left) monitors the subject (right) by closed-circuit TV in an experiment with the Aquarius 4-choice Trainer. The experimenter attempts to "send" the right target to the subject. (Photos by John Larsen.)

who cuts out four-letter words but leaves the rest of the program alone. Experiments have indicated that ESP results were affected according to whether or not the experimenter interacted with subjects in a positive or negative manner—thus introducing systematic noise into the relationship. This effect is important, for in almost all experiments, someone (usually the investigator) is around who strongly desires to see the results come out a certain way. The nineteenth century

concept of the detached observer is a myth. Beliefs and desires of experimenters and observers must be accounted for in ESP experiments.

Many possible ways can be theorized for how ESP messages are sent and received. The telepathic process is extremely complicated by itself, with many possible ways for ESP to go from sender to receiver. When almost innumerable noise sources are introduced, it is amazing that ESP works at all! Yet we use processes as compli-

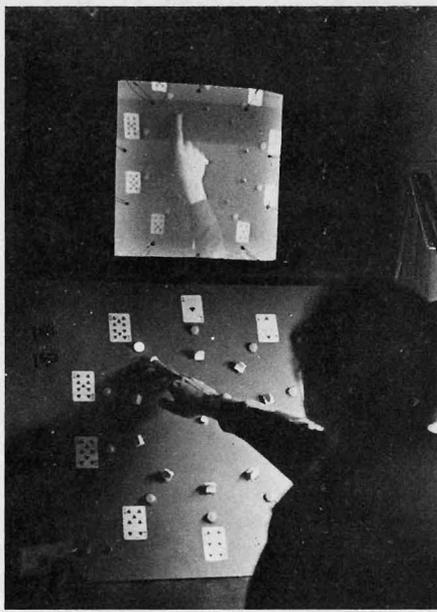
cated as ESP in every-day ordinary sensory communication because we have access to feedback about results. It tells us how well certain systems work and enables us to adjust them constantly.

In a typical ESP experiment where a subject guesses through a deck of 25 (Zener) cards, subjects are shown results at the run's end. But how then can they recall clearly what kind of feelings they had on say the eighth guess, which turned out to be correct, as opposed to the 17th, which was incorrect? Just sitting relaxed with no feedback won't accomplish much. If a subject can find out which feelings and which strategies for trying to use ESP *actually work* a particular style suited to that individual can be developed so that ESP can be demonstrated consistently.

Traditionally, researchers have tried to measure ESP capacity rather than train it. With the deck of cards commonly used, immediate feedback would have thrown off results, for the subject would be able to keep track of what had been uncovered and change guessing strategy accordingly.

If feedback is to be included in ESP research, a different version of the experiment must be used. That's just what we did at Davis.

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Working with the 10-Choice Trainer, the experimenter (left) tries to influence the subject (right) to choose the correct target. The experimenter monitors the subject by closed-circuit TV.

The Davis study was conducted as part of a class in experimental psychology in the fall of 1973.* The student experimenters were mostly the peers of their student subjects. We deliberately created a warm, friendly, open atmosphere. Subjects were fully aware of the study's design and our goals. However, subjects were not informed of how much ability needed to be demonstrated to qualify for further testing. We did not want subjects who scored significantly, but not all that high, to feel somehow they had less of a chance than other subjects.

We made three predictions on what could be expected if immediate feedback was provided in an ESP experiment:

- In short to moderate length studies, ESP will stabilize in subjects with some ESP ability to begin with. (Results would probably diminish in the long run).

- ESP ability can be learned—primarily in more talented subjects—so that the learning process will predominate over the tendency for it to diminish for some subjects.

- Greater ESP ability will facilitate greater learning.

Starting with the assumption that *demonstrable* ESP ability probably was rare, it was necessary to screen large numbers of students to find those who could show ESP. More than 1,500 subjects were screened, using group tests in classroom situations. Others were tested informally and individually. The selection study included one clairvoyance run

and one general extrasensory perception run for each subject.

In the clairvoyance run, a shuffled deck of 25 cards was removed one by one, face down, every five seconds. None of the experimenters knew the target card's identification at the time of the subjects' guessing. The general ESP run was similar except that a pair of experimenters looked at each card and tried to send it. Many more subjects recorded significant scores than expected by chance alone, so this preliminary study was a success for our purpose, just by itself.

We knew that because of the large numbers being tested, some individuals would score very high by chance alone. So, our selection study was followed by a confirmation study. To get into the confirmation study, subjects had to score enough hits to meet odds of at least 20 to 1 above chance, or show special promise (such as a number of hits in a row). Each subject had six runs of 25 trials each, two on the Aquarius ESP Trainer, two on the Ten-Choice Trainer, and two on whichever of the machines the subject wished. These runs also served to introduce subjects to our laboratory procedures.

With the Aquarius Trainer, the subject was faced with four unlit target slides. One of the slides was chosen randomly as the target by the electronic circuits of the machine. The subject pushed the button corresponding to the slide thought to be the target. When a choice was made, the target slide lit up, giving instant

feedback. If the choice was correct, a pleasant-sounding chime rang. Electronic counters kept track of the number of trials and hits, and stopped the machine at the end of the 25th trial. Then the experimenter, who had been monitoring the run in another room, came in to record the score and reset the machine. A remote indicator panel in the experimenter's room showed what target the machine had chosen.

The experimenter attempted mentally to send the targets selected by the Aquarius to the subject. Intervening walls provided adequate isolation even if experimenters had tried to speak to subjects.

The TCT features a circle of 10 playing cards, with buttons beside each and a green light in the center. An electronic random number generator selected which card would be the target. When the green light came on, the subject knew that one of the 10 cards in the circle had been chosen. The subject then made a selection by pressing one of the buttons and the correct target then lit up for feedback. If correct, a chime also rang. An electrical counter recorded all trials. The experimenter watched on a similar console, and was able to view a TV screen on which the subject's hand could be seen. So, the TCT gave the experimenter additional feedback on subject behavior. Many subjects would run their hands around the circle of buttons, perhaps pausing over various ones. Thus experimenters could try to send messages to the subjects on whether they were hot or cold. Although this additional feedback could not be evaluated separately for effectiveness, it certainly kept the experimenter-senders strongly involved in the experiment.

We ended up the confirmation study with 70 subjects providing data on the Aquarius machine and 68 on the TCT. Confirmation study results on the Aquarius surpassed odds of 25 to 1

*There is temptation to describe the Davis studies in exhaustive detail. That is because critics may fantasize alternatives simply because they haven't been totally excluded here. But since the mass of details would bore most readers, I suggest that anyone wishing to peruse them write the Parapsychology Foundation (29 W. 57th St., New York, N.Y. 10019), which has published a monograph on the experiment, *The Application of Learning Theory to ESP*. Expanded details hardback will be published soon by the University of Chicago Press under the title *Learning to Use ESP*. The study was supported by a grant from the Parapsychology Foundation.

above chance. It was good, but hardly overwhelming. For the TCT, the results were remarkably superior. In fact, the average of hits per run beyond that expected by chance had odds against chance of *10,000 billion to one*.

In the final training study, 25 subjects who had continued to show individually significant ESP ability in the confirmation study completed all 20 runs of 25 trials each. Subjects realized this was the big experiment they had been specially selected for from the preliminary ones. Although we tried to keep things warm and friendly, a certain increase in psychological tension could not be helped. Each subject worked with only the Aquarius or TCT, whichever was preferred, and had the same experimenter-sender throughout the study. Fifteen subjects chose the Aquarius, 10 the TCT.

Among the 15 Aquarius subjects, the average performance was high, with odds of 2,500 to 1 against chance. Measurements were made to determine whether individual performance went up or down or remained the same. The results confirmed the first prediction, that immediate feedback could stabilize ESP performance. No significant declines were found. Some support also was shown among individual subjects for the prediction about learning under conditions of immediate feedback, with one subject showing a significant, steady increase in ESP.

For the 10 TCT subjects, the average number of hits per run was well above chance, with odds against chance being a *million billion billions to one*. This enormous amount of ESP would be quite useful for advanced functional studies, for genuine ESP was occurring about ten percent of the time. The prediction that greater ESP ability facilitates learning received strong support with the TCT results. And as with the Aquarius, individual TCT results for the final study showed no significant declines. However, there were no increases either.

That might seem puzzling, especially in light of the greater amount of ESP demonstrated by subjects using the TCT. The puzzle may be resolved by looking closely at the highest-scoring subject. This young woman did two runs per session regularly, showing a rise in eight sessions, a fall in one, and steady performance in the others. Drops in performance occurred *between sessions*. The subject seemed to have been learning significantly *within* sessions, but forget-

ting that delicate ability by the time the next session rolled around. Other subjects showed similar patterns, albeit not as markedly.

This first full-scale test application of learning theory to ESP performance has been extremely encouraging. When considered with results from other parapsychology studies that partially test the theory, I feel the three basic predictions have been very well supported.

In future expansion of this research, I plan to take the overall state of the receiver and sender into account, as well as the simple right or wrong response during trial series. Feedback to subjects should indicate to them whether or not they are in a condition associated with good ESP performance. Studies also could be conducted for senders, so they could learn what kinds of psychological and physiological conditions on their part are associated with successful sending.

In summary, one might say that parapsychology today is akin to our knowledge of electricity for most of humanity's history. The science of electricity had its lightning flashes, which were spectacular but over before you could do much about studying them. On some days you could rub a piece of amber with fur and pick up a feather. But not always, and often just barely. The analogy is similar in parapsychology, where spontaneous events happen to people which indicate extremely large amounts of ESP. Yet what can be learned from the events remains limited. Even with one out of three successful laboratory experiments, there is no certainty any particular experiment will work. Even when they do, effects usually are weak.

The science of electricity made enormous progress when the battery was invented. The battery was nothing compared to lighting, but it was much more reliable, and stronger than a piece of amber picking up a feather. Similarly, we need a parapsychological battery – a steady and reliable flow of ESP to allow useful studies.

Hopefully this application of learning theory will enable us to produce our parapsychological battery and move us into a new era of being able to understand ESP – and eventually apply it consistently to helpful uses.



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