

understanding nature rather than humbling it, and studying the boundary between inner and outer self. Also, a clear desire for openness and cooperation—rather than for developing military uses of psi—was expressed by many speakers at the conference. We certainly agree with this position.

FROM MOSCOW TO YEREVAN

In September 1983, we received an invitation to visit the Soviet Union as guests of the U.S.S.R. Academy of Sciences. This gave us an opportunity to discuss our remote-viewing work with them, and also to learn firsthand what sort of research they are currently doing. Our host for this visit was Dr. Andrei Berezine, a biophysicist working at a Moscow research hospital.

With us on the trip was Elisabeth Targ (daughter of R.T.), who holds a translator's certificate in Russian and is a second-year medical student at Stanford. She was able to act as our translator and tell us what was going on at times when Russian conversations would have otherwise gone over our heads.

In Moscow we spoke with physicists, psychologists, and medical researchers. The physicists were mainly concerned with discussing the details of our precognitive experiments, while the medical people and psychologists had many good questions and interesting ideas about the whole field of psi research and its implications for their work. We had very stimulating exchanges with both groups of scientists.

Over coffee and pastries at the First Moscow Medical Institute, we met Professor Andriankyn, director of the Theoretical Department of the U.S.S.R. Academy of Sciences. Andriankyn, responsible for inviting us to the Soviet Union, sponsored our visit. His main concern at this Institute is with non-drug treatment of mental patients. One focus of this work concerns the experimental use of low-frequency electric and magnetic fields.

At the Institute, we also talked with Dr. Igor Smirnov and two other researchers who had just completed the experiment in "rat telepathy" described earlier in this chapter. As we sat in their equipment-crowded basement laboratory, along with several other medical people from the hospital, they discussed the experiment with us. They had discovered that the experiment was not successful when carried out with groups of rats, because they fought with each other under the stressful conditions.

Konstantine Goubarev is a physicist involved with the rat experiment. However, he is personally most concerned with the design of a computer program that analyzes a person's physiological data to determine from that data when a particular change in his or her state of consciousness, such as dropping into a hypnotized condition, has occurred. He demonstrated the program for us, on typical data tapes. He believes that he has accomplished his goal of showing changes in the state of human consciousness by looking at mathematical transformations of the data and observing phase changes rather than amplitude changes. This would be quite an accomplishment, because at this time it is not even clear to Western researchers that hypnosis is a definable change of state.

We were also very happy to meet again with Dr. Yuri Gulyaev at his Institute of Radio Engineering and Electronics overlooking Gorky Park. We all sat on comfortable red leather chairs in his spacious office, while over countless ceremonial glasses of Armenian cognac Dr. Gulyaev described some of his most recent work. He also gave us a copy of I. M. Kogan's new book *Applied Information Theory*. Professor Kogan argues that if psychic phenomena are to be explained at all, it will have to be through low-frequency electromagnetic principles. Gulyaev told us that the first person to put forward the idea that psi was carried by electromagnetic waves was James Clark Maxwell, in the last century, and that his idea was described in a recent U.S.S.R. Academy of Sciences journal dealing with the measurement of biomagnetic fields.

Along with his duties as deputy director of the Institute, Gulyaev is able to pursue his interests in psychotronics as well. With his colleague Dr. Eduard Godik, he has been examining the electromagnetic and visible radiation emitted by the human body. They have carried out sensitive photon-counting experiments with a spectrometer that measures the wavelength of the emitted light, and found that there may be some physical evidence for the so-called auras that certain people claim to see surrounding the human body.

Professor Gulyaev said that he has also been able, to a limited extent, to continue his work with Nina Kulagina. He described a particularly interesting experiment in which he tried to find out if she could use her psychic abilities to read letters. In these trials, he randomly chose a book from the shelves of his office and asked Kulagina to name the letters that started each paragraph on a given

The two vice-presidents are Dr. Heinrich Huber, from Austria, and myself. The three scientific directors are Dr. Shiuji Inomata from Japan, Dr. Erik Ingenbergs from the G.D.R., and Prof. Fedor Romachov from the U.S.S.R.

At the June 1983 conference, there were approximately three hundred attendees at three simultaneous sessions for three of the five days of the meeting. These sessions were divided as follows: I—Psychotronics and Medicine; II—Psychotronics, Psychology, Pedagogy, and Creativity; and III—Psychotronics, Physics, and Methodology. There were approximately seventy-five papers presented on these topics.

During the conference I was able to visit a striking remote-viewing target site that was used in an experiment conducted by Mr. John Bisaha and Brenda Dunne in 1976. For their series of long-distance remote-viewing experiments, Bisaha traveled in the U.S.S.R. and in Czechoslovakia. As we discussed earlier, one of his targets was a circular restaurant on a bridge tower high above the Danube River in Bratislava, the 1983 conference city. It was thrilling for me to visit this exotic target, the Café Bystrica, and observe for myself that the distance separating the viewer and the target didn't interfere with the accuracy of her perception. The viewer in this experiment was six thousand miles away in Wisconsin. As you will recall, she described the target's location as "...near... a very large expanse of water... boats... vertical lines like poles... a circular shape like a merry-go-round or gazebo... it seems to have height."

At the conference, two Soviet researchers, Dr. André Berezin, a biochemist, and Dr. Konstantine Goubarev, a theoretical physicist, told me about a variety of interesting projects. The one I found most striking was an experiment in apparent rat telepathy, in which two groups of caged rats were housed a mile apart. Each group had been conditioned to move to the left side of their cage when a red light was turned on, to avoid an electric shock to their feet. After both groups were reliably conditioned to this response, a computer-controlled experiment was carried out using individual rats from each group. The researchers found that when one rat was randomly signaled and shocked, his brother rat (litter mate) in the distant cage would also move to the left side of his cage. The timing signals and selection of which rats were to be shocked were controlled by a central computer and sent to the cage controllers via phone lines. A similarly successful experiment had been carried out several years before by Leutin in the Soviet Union,

with human subjects also conditioned by electric shocks (described by Vilenskaya later). This appears to be a serious, well-thought-out, and well-controlled experiment.

A second experimental investigation was carried out in a hospital in which continued research is being done on the effects of electromagnetic radiation on consciousness. In this work, an 18 kHz oscillator was modulated with different types of stochastic (random) noise. The output of the generator was brought near the patients' heads, apparently causing them to have "mystical or religious types of experiences." In other experiments with electromagnetic generators, it was found that heart attacks could be induced in susceptible rats, and relief from hypoxia obtained in rats suffering from oxygen deprivation.

We also learned from Guy Playfair, an English researcher at the conference, about a Soviet invention called Lida-4, which is a signal generator producing 100 Hz modulation in a 40 MHz carrier. According to a report from Dr. Ross Adey, this device put an entire hall full of people to sleep in fifteen minutes.

Dr. Zdenek Rejdak spoke to the initial session about the desirability of finding physiological correlates to dowsing. He described several approaches to this task. Dowsing and prospecting for oil and minerals with psi was a recurring theme at the conference. It seems clear that dowsing on the site of interest with a dowsing rod in hand, map dowsing, and purely mental dowsing for the answer to specific questions are all aspects of the same psi process, and can all be equally successful. A finding described by Dr. Edith Jurka, an American psychiatrist, was the persistent, stable, and symmetric low-frequency (delta) EEG output of successful dowsers. Rejdak says that anyone can learn to do dowsing, but that one should beware of occultists and secret societies who claim to have all the answers. There was also a discussion of dowsing for thought forms. In this experiment, a researcher formed a mental image of a wall someplace in his office. A dowser with whom he was working then called him on the telephone and correctly told him the location of the wall, as he dowsed over a drawing of the experimenter's office.

It was evident that the 1982 paper "The Persistent Paradox of Psychic Phenomena: An Engineering Perspective" had a great effect on both researchers and policy makers. This paper on remote viewing and psychokinesis was published in the March 1982 *Proceedings of the IEEE* by Dean Robert Jahn of Princeton University.

Several speakers stressed the position of IAPR in favor of

thoughts, memory, and imagination from actual psychic impressions. This ability is as vital for successful remote viewing as it may be for psychic self-defense.

Professor Yuri Gulyaev is a director of the Soviet Institute of Radio-Engineering and Electronics. He is also one of the best-informed people in the world on the state of the art in psi research. He is a charming and cheery Russian gentleman, and we were delighted to spend an afternoon with him in November 1978.

Professor Gulyaev came to SRI to discuss his latest thoughts about psi research, or psychotronics, as the Soviets call it. We had a very good meeting with this highly regarded physicist, who discussed with us theories of psychic functioning with a full understanding of the latest ideas in modern physics, in addition to the latest results of experimental psi research.

Although the SRI team had just published the successful experiment in which messages were psychically sent to a submerged submarine, Gulyaev was uninterested in seeing the film of this exciting experiment. He said that he was completely familiar with our research, and had come to SRI principally "to see what kind of men" we were, rather than to hear about specific experiments.

Although Gulyaev is mainly known in technical circles for his research in acoustics and crystallography, he and his institute co-director, Yuri Kobselev, a member of the Soviet Academy of Sciences, have carried out many different kinds of experiments with Nina Kulagina, the celebrated Soviet PK subject. In one of Gulyaev's more interesting experiments, he had Kulagina try to affect the passage of a surface acoustic wave as it traveled along an acoustic-delay line.

In this experiment, a sound signal would enter the array of crystals at one end, pass along their surface, and emerge at the other end. The passage of the sound wave was monitored by an oscilloscope, with the whole delay line under a glass jar. Gulyaev was pleased to tell us that Kulagina was regularly able to shift the phase of the signal as viewed on the oscilloscope screen, by focusing her attention on the crystals under the jar.

Gulyaev described these experiments with great exactness and care, just as he did when discussing experiments in which he said Kulagina raised burns on the arms and backs of skeptical visiting scientists. In these latter experiments, Kulagina used the same type of mental concentration that she used to apparently perturb the acoustic beam. Gulyaev also described several other types of psychokinetic experiments in which, he said, individuals were able

to move or even levitate objects without touching them. He showed us photographs of apparently floating rulers and balls that he said he had personally seen acted upon by the two Soviet psychics, Elvira Schevchik and the well-known Boris Ermolaev.

Shortly after his visit to us, Professor Gulyaev became an associate member of the Soviet Academy of Sciences and director of his institute. In keeping with his great interest in psychokinesis, it appears that there is a new official Soviet approval for the investigation of psychokinetic effects on living systems.

The Soviet Union has many people who are well respected as psychic healers. We hope that the new Soviet acceptance of this important field will give their psi research in it a turn toward more humanitarian directions and away from stopping frogs' hearts, starving mice, raising burns on visitors' skin, and the other seemingly aggressive applications described in the epilogue.

Before he left, Gulyaev wanted to take pictures of the SRI psi researchers in front of the laboratory building, especially including our very attractive secretary.

At the end of this chapter we present an update on this material based on our recent trip to the Soviet Union.

PSYCHOTRONIC CONFERENCE IN BRATISLAVA

In June 1983, I (R.T.) attended the Fifth International Conference on Psychotronic Research, in Bratislava, Czechoslovakia, which gave me another opportunity to talk with Eastern researchers about their latest ideas and experiments.

The International Association for Psychotronic Research (IAPR) has broad interests, covering many borderline areas of science. These include, principally, psychotronic interactions with physics (the physics of consciousness and mechanisms of psychic functioning), medicine (psychic healing and dermo-optic perception or "skin" vision), and geology (dowsing for water, natural resources, and favorable places to build houses or barns).

The organization is now ten years old and has held five conferences attracting international participation. These were in Prague (1973), Monaco (1975), Tokyo (1977), São Paulo (1979), and this most recent one in Bratislava in 1983. The president and founder of the IAPR is Dr. Zdenek Rejda, from Czechoslovakia.

page. After she gave her answer, Professor Gulyaev would take the book down and open it. He told us that she could do this task with surprising accuracy. However, when she was told to leave the room before the book was opened, thereby losing her feedback, he reported that her responses fell to chance.

Toward the end of our visit we were taken to the city of Yerevan, in Soviet Armenia, where remote-viewing experiments had been carried out in the Industrial Psychology Laboratory at the state university. Yerevan, southeast of Istanbul and north of Baghdad, was warm and sunny, in contrast with the snow we left in Moscow. It was also a much more relaxed environment, with people strolling around a large illuminated fountain in the city square in the evening to listen to music.

On our first full day in Yerevan we visited the university and spoke with some members of the Armenian Academy of Sciences. Then, in a laboratory full of arcade-type video games used to study hand-eye coordination, we met with Professor Ruben Aguzumtsian, who had carried out a careful series of remote-viewing trials. The target sites for this study were chosen by an architect—a good idea in this city of remarkable structures dating from almost the time of Christ. One church, called Gehard, was carved out of the solid rock of a mountainside in about A.D. 300. Many other Greco-Roman buildings were built of a red volcanic rock.

The viewers and outbound experimenters for the remote-viewing study were volunteers from a psychology class. For each trial an outbound experimenter, accompanied by two guards (watchers—also from the class), would go to a distant location, open the envelope with the target information, and then go to the appointed site. Meanwhile, back in the laboratory, an interviewer would encourage the viewer to describe his or her impressions about the site that was being visited. Professor Aguzumtsian decided to carry out this work after reading the 1976 IEEE (Institute of Electrical and Electronic Engineers) paper from SRI, when it was translated into Russian and published in the Soviet Union. His experiments confirmed the earlier findings, and also gave him the interesting experience of having a viewer describe a chosen target site before the target team had opened the envelope or gone to the target. As in our own experiments, this precognition was an unexpected complication. We may soon carry out a long-distance series of remote-viewing trials in cooperation with this laboratory, to see what results we will get from using a ten-thousand-mile baseline

for remote viewing. In this series we will, of course, work with a viewer who has never been to Yerevan.

In our travels from Moscow to Leningrad to Yerevan, we met with many researchers who expressed the hope that there could be continued open communication in this field. They all expressed the feeling that psi's importance lies in the development of human potential, rather than in its possible military applications. But everyone we talked with also made some oblique reference to what we were not being shown. For example, we knew that the Popov Society laboratory run by Professor Spirikin had been closed down several years ago. On this trip we learned that it has now been re-opened under the direction of Dr. Alexander Chernetzky. We were even told that the laboratory is now called the Fourmany Street Lab. We were not, however, told what sort of work this lab is currently engaged in.

Nevertheless we feel it is important and very desirable to arrange future cooperative meetings with the Soviet scientists to further explore the details of psychic functioning. We might even come up with a potential contribution to help solve the decades-old problem of off-site verification for nuclear testing and arms control. If successful, that would be an application of psychic functioning that we believe the whole world would like to see.

"Overall, this is one of the best books on parapsychology in a long time."

CHARLES TART
Psychology Professor
University of California

"A BRILLIANT BOOK, probably the best summary of the whole field I have ever read."

Colin Wilson, AUTHOR of *The Outsider*

"AN EXCELLENT HOW-TO BOOK FOR THE EXPERIMENTALLY INCLINED READER...
RECOMMENDED TO ANY SERIOUS STUDENT OF PSI PHENOMENA
AND TO ANY WORKER IN ANY RELATED field."

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UNDERSTANDING AND USING
PSYCHIC ABILITIES

RUSSELL TARG AND KEITH HARARY

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whose inspiration and intuition
have broadened our understanding
of what is possible.*