

“Project Star Gate”: \$20 Million Up in Smoke (and Mirrors)

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Michael A. Aquino, Ph.D.
Lt. Colonel, Military Intelligence, USAR-Ret.

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For some time now I have trudged through the wilderness of ESP, like Diogenes with his lantern, searching for bedrock amidst all of the Uri Geller stage magic and Jeanne Dixon tabloid fluff. The nonsense that still appears in “respectable” print never ceases to amaze [and amuse] me - for example Targ & Harary’s *Mind Race* (1984). Targ is a Stanford Research Institute physicist who says that he has worked for a decade on a “multi-million-dollar program of psychic research financed by the Defense Department and intelligence agencies” - retitled in 1995 “Project Star Gate”.

Targ’s pet project consisted of “remote viewing” experiments, on which I was eventually briefed at the State Department. It was an eyeball-roller, not only because the statistical data SRI offered proved nothing, but also because **the transmission of visual information to the brain simply doesn’t occur outside the visible spectrum**. Light-waves from the central fountain in Washington Square Park (alleged to have been “seen” by one of Targ’s subjects) are atmospherically diffused long before reaching Palo Alto, California.

There’s much we don’t know about the brain’s internal design, but how information travels into and around it is no mystery at all. **Electricity** - the same stuff that makes flashlights work. Please note that the electrical impulses rocketing around in your head are **extremely** weak: To light a flashlight bulb you would have to generate about 30 million times your present level of brain current.

Fascinating experiments in ESB (Electrical Stimulation of the Brain) have been done by Dr. José Delgado of Yale University. Delgado’s probes, using tiny amounts of current, were capable of changing moods, stimulating memories, and even causing motor actions despite the conscious will of the subject to resist. If the human brain were not well-insulated against external electricity [which it is], you would have an explosion of utterly arbitrary thoughts every time you drove under a high-tension wire or scuffed your shoes on the carpet.

Reality check time:

- (1) **Coherent visible light waves (a visual “picture” of something) don’t travel through the atmosphere without progressive distortion and disintegration.** “Remote viewing” at the extreme distances claimed flatly violates the laws of physics.
- (2) **Unamplified electrical brainwaves can’t be picked up past EEG electrodes pasted onto your body.** Just as obviously they don’t jump between heads, much less across rooms or entire countries. And even the EEG detection of a brainwave is far too crude to pick out a specific thought or mental image.

If the Pentagon and the intelligence community did in fact blow \$20 million on “psychic” snake-oil, P.T. Barnum and Harry Houdini must be rolling merrily around in their graves.

So what if anything **is** possible in this field? How and why?

The electrical energy in your brain occurs in waves measured according to cycles per second (CPS). 1-3 CPS = *delta* waves, characteristic of deep sleep. 4-7 CPS = *theta* waves, characteristic of high emotion, violence, and frustration. 8-12 CPS = *alpha* waves, characteristic of meditation, relaxation, and “searching for patterns”. 13-22 CPS = *beta* waves, characteristic of frontal brain activity, deliberate effort, and logical thought.

We’ll come back to brain waves in a moment, but first a word about another principle: **resonance**. Resonance is a very interesting concept and deserves a precise definition:

- (1) a vibration of large amplitude in a mechanical or electrical system caused by a relatively small periodic stimulus of the same or nearly the same period as the natural vibration period of the system.
- (2) the intensification and enriching of a musical tone by supplementary vibration that is either sympathetically or mechanically induced.

In the course of my research I examined the work of Dr. Nikola Tesla, one of recent history’s more charming “mad scientists” who rattled the cage of “recognized” science with, among other things, experiments in resonance. Biographer Margaret Cheney relates in *Tesla: Man Out of Time*:

He attached an oscillator no larger than an alarm clock to a steel link 2’ long and 2” thick. “For a long time nothing happened, but at last the great steel link began to tremble, increased its trembling until it dilated and contracted like a beating heart, and finally broke.” Sledgehammers could not have done it, he told a reporter, crowbars could not have done it, but a fusillade of taps, no one of which would have harmed a baby, did it.

Pleased with this beginning, he put the little oscillator in his coat pocket. Finding a half-built steel building in the Wall Street district, 10 stories high with nothing up but the steelwork, he clamped the oscillator to one of the beams. “In a few minutes I could feel the beam trembling. Gradually the trembling increased in intensity and extended throughout the whole great mass of steel. Finally the structure began to creak and weave, and the steelworkers came to the ground panic-stricken, believing that there had been an earthquake. Before anything serious happened, I took off the oscillator, put it in my pocket, and went away. But if I had kept on 10 minutes more, I could have laid that building flat in the street. And with the same oscillator I could drop Brooklyn Bridge in less than an hour.”

Now a little-known but interesting fact is that **brain-waves are subject to the principle of resonance**. Energy-waves reaching your brain through **any** medium - eyes, ears, or flesh - will tend to induce your brain-waves to cycle at the **same** wave-length. A common example of visual resonance is the seizures that some people experience when exposed to a light flickering at 10 CPS.

The audio spectrum - being the range of sound vibrations which human hearing can consciously detect - is from 15 CPS (bass) to 20,000 CPS (treble). The infrasonic range - 10-15 CPS - is too low to be consciously detected but is nonetheless capable of inducing resonance in the brain. Below infrasound [and sometimes encompassing it] are Extremely Low Frequency (ELF) waves, which are powerful and durable enough to travel through the Earth for communication with submerged submarines.

The relaxation which you paradoxically feel when listening to the deep, heavy throbbing of drums or bass guitars at rock concerts is the same as that felt by American Indians listening to the large dancing-drums accompanying their ceremonial campfires. **Resonance** is produced which inclines your brain-waves towards *alpha*, and if the rate of

the beat seems particularly pleasing to you, I recommend that you take your pulse. My guess is that it will be close (somewhere around 70 CPM), which your system will find subconsciously soothing. [If you wish to calm a crying infant, rock its cradle at about that speed, or hold it to your breast so that it can hear the beating of your heart. Try it!]

Theta happens to be a very curious range. Soviet research into PK phenomena alleged that PK activity is generally associated with a sudden surge of *theta* activity at the 4 CPS level. *Theta* activity is also more common in the brains of young children than in those of adults, which may have something to do with the rumor (which I cannot call more than that) that “poltergeist” activity is usually catalyzed by the presence of a child in the house.

Particularly during the post-World War II era, American and Soviet intelligence agencies weren't very clubby about exchanging any information, and especially not research in delicate/sensitive areas like mind-control techniques. On the other hand there **was** a lively dialogue on *psi* between West and East in **civilian** scientific circles, much to the anxiety and annoyance of Green Door types.

Here in San Francisco Michael Murphy, founder of the famous Esalen Institute in Big Sur, and his associate Steve Donovan created the *Transformation Project*, a mammoth database of files - rooms and rooms of meticulous file cabinets in those pre-desktop-computer days - to correlate the world's research on ESP. Murphy had dialogued extensively and exhaustively with Soviet ESP scientists, traveling widely in the USSR throughout the 1970s, and wrote up the results up in thinly disguised “fiction” such as *An End to Ordinary History* (1982).

Via the *Transformation Project* file library, I was able to review vast amounts of records and published results of various government and university experiments in the field of ESP from both the Western & Eastern Blocs as well as non-aligned countries. The range and scope of the *TP* files went far beyond anything in the intelligence agency and Defense Department libraries on this topic.

One of the most rigorous and conclusive analyses was conducted in 1977 by E. Balanovski and J.G. Taylor of the Department of Mathematics, King's College, London. The *TP* files contained detailed reports of their findings, including an extensive article in *Nature* magazine #276, November 2, 1978.

After having reviewed previous experiments attempting to test ESP for EM emission, B&T declared their dissatisfaction because of imprecise test conditions, exclusion of parts of the electromagnetic spectrum (EMS), and inadequate write-ups of the results. They determined to cover the entire EMS, and to do so under the most rigorous test conditions possible.

The battery of sensors they assembled included skin electrodes, electrometers, magnetometers, loop antennae, crystal detectors, horn antennae, thermocouples, electric thermometers, infrared detectors, and ultraviolet detectors. Many of these sensors overlapped one another's frequency range, and altogether they covered the entire EMS from 0 to 3×10^5 GHz! As can be imagined, before the first experiment could be conducted, extensive test-running of all these sensors had occurred in order to record and filter out the irrelevant EM “noise” in the test areas, including passing cars and TV/radio station broadcasts. Readings were recorded on strip chart recorders, video tape recorders, and direct photographs of oscilloscope and frequency analyzer screens. The efficiency of this battery of devices was quickly evident:

Needle-Rotation: (2 subjects, 2 controls, 92 trials) A needle was suspended by an extra-fine nylon thread inside a clear perspex cylinder which was clamped securely to a nylon bench. Movement was achieved by the subjects moving their hands and wrists back and forth around the cylinder at about 5 cm from it. In each of the 12 sessions the subjects produced a 60° average rotation of the needle, sometimes up to 200°. We established that a rotation of 50° was produced by a potential of 2 mV with respect to earth at frequencies 0-1 MHz. For up to 60° rotation, skin electrode measurements on 2 earthed subjects indicated a skin potential of only 0.2 mV. We concluded that the rotation could not be caused by E or H fields from 0-1 MHz produced by the subject's body. When an anti-static ointment was rubbed over the surface of the cylinder, the whole phenomenon vanished, indicating that the effect was due to charge induced on the needle from the outer surface of the cylinder. The VTR showed the subjects inadvertently touching the surface of the cylinder in their attempts to move the needle. Further tests showed that the amount of rotation produced was directly correlated to the amount of charge on the outer surface of the cylinder.

“ESP” rotation of a straw atop a glass of water inside a glass dome was traced to convection current inside the dome produced by the heat of a nearby electric heater. No EM activity was detected. “ESP” rotation of a compass needle was also EM-free. The amount of rotation was then found to decrease with increasing distance between the compass and the subject's body according to the inverse square law. It also decreased when steel sheets were inserted between the subject and the compass. Conclusion: electrostatic charge once again.

Uri Geller Dept.: When hooked up to the array of sensors, metal-benders proved to be 100% unable to bend metal, either by contact or at a distance. When the attached sensors were removed, there were some apparent successes - but the remote sensors still detected no EM signal:

Attempts were made to cause bending of a strip of metal or plastic by feeding EM energy into the strip. A Paradyamics 10 GHz X-band microwave source was used (50 kW peak power, 0.6 or 2.1 microns pulse, variable p.r.f. with external modulation). Strips of various metals, plastic, and various crystals were irradiated, and vibration of the specimens was observed at the modulation frequency in agreement with surface acoustic wave generation. Strips of aluminum, copper, and brass cut to lengths appropriate to the internal modulation showed resonance effects (at 1-3 KHz) when inserted into the waveguide of the X-band source. Although energy was thus absorbed in the strips, no bending ever occurred.

The results show that no unusual EM emission from the subject's body was observed over the entire spectrum. If there had been low frequency signals, they could not account for the phenomenon. First, their focusing power is very poor. Second, the energy transfer is inefficient. Third, the signal levels observed are too low by a factor of about 10^9 to explain the effect. The best candidate would be the microwave range 1-5 GHz; at these frequencies the focusing power is good and the energy transfer can be efficient for the generation of surface acoustic waves, as the skin depth in metals at these frequencies is negligible. But no microwave emission higher than the black-body radiation at the human body temperature was ever detected. Microwave radiation emitted by the body corresponds to a power level of 10^{-14} W. Therefore EM radiation cannot explain the apparent metal-bending occurring in the absence of the contact and television sensors.

The full sensor array further detected no unusual EM radiation during attempts at “psychic healing”, and statements by “healers” and “patients” alike of heat sensations were not verified by any of the temperature sensors. No unusual EM activity was detected during dowsing experiments either. Dowsers who claimed sensitivity to magnetic fields down to 10^{-5} G were tested and found insensitive to the presence of 100G!

Contrary to 1995 media stories, word of U.S. government dalliance with ESP actually leaked out in the early 1980s. In *Mind Wars* (1984) Ronald McRae, a Jack Anderson associate clearly having a great time with the “Project Star Gate” antics, observed:

In the '70s the Navy signed a \$50,703 contract with SRI to determine whether psychics could detect remote EM sources. Yet the Navy flatly denies that it has “ever used psychics to track submarines”. It describes one psychic antisubmarine project as an “investigation of the ability of certain individuals to perceive remote, faint, EM stimuli at a noncognitive level of awareness”. SRI delivered the final report in 1978, claiming success with several psychics.

McRae continued that, “despite its denials, the Navy has thus far employed at least 34 psychics to track Soviet ships and submarines”, and a number of psychics - like “Madame Zodiac” of Washington, D.C. - dutifully trooped forward with stories of nervous, chain-smoking Navy officers hunched over their crystal ball tables while awaiting word from Beyond of the location of the nearest Soviet sub. McRae quoted pop-occult sociologist Marcello Truzzi, to wit: “Psychic powers might have extremely important military and political consequences should the enemy be able to use them to break through national security defenses.” Woo, woo.

The Army first flirted with this particular snipe-hunt in 1980, when an article on “psychotronic warfare” appeared in *Military Review*, the journal of the prestigious Command & General Staff College. This was another Gomer Pyle “gaw-ul-lee!” article with absolutely no hard evidence to back it up. Not to be outdone by the Navy and Madame Zodiac, however, the Army in 1984 launched a 5-month experiment called Project Jedi. Named after the *Star Wars* movie knights who were able to perform exotic mental/magical feats, Project Jedi sought to use neurolinguistic programming (NLP) as a new way of teaching recruits to fire weapons. This was done through psychological analysis of the thought-patterns of expert shooters as they fired. 23 soldiers were then trained to fire, some according to the NLP “guided imagery” and others per conventional instruction. Training time was reduced almost by half for the NLP group.

In 1985 forty soldiers undergoing Russian language training were divided into two groups, one of which was trained according to a technique called “Suggestopedia”. This involved *Tai Chi*-like calisthenics, followed by mental relaxation & breathing exercises, followed by “guided imagery” *a la* Project Jedi. The bottom line was *nyet*: “Suggestopedia” didn't work.

There were, however, still more psychic fish to fry. In 1985 The Army commissioned a two-year, \$425,000 report from the National Research Council, an agency of the National Academy of Sciences. Among the topics reviewed were stress management, biofeedback, accelerated learning, psychokinesis (PK), extra-sensory perception (ESP) and dear old “remote viewing”.

On December 8, 1987 the NRC report, entitled *Enhancing Human Performance*, was released. It concluded that most of the unconventional techniques were “**scientifically unsupportable**”, but that sleep-learning, guided imagery, and “super learning” programs were viable.

Obviously this didn't even slow “Project Star Gate”, which rolled merrily along taking the taxpayers on its \$20 million “remote viewing” amusement park ride. For a final nail in the coffin of “remote viewing” we turn again to the B&T series of experiments:

Tests on human sensitivity to low levels of EM radiation: Five subjects were seated in a room with either a loop antenna or a horn antenna placed 50 cm from them. The source was in an adjoining room to avoid visual or auditory cueing, conscious or unconscious. The sources used were a tunable RF source in the 220-950 MHz range with a power output of 1 mW and a tunable MW source (both pulsed and CW) in the 6-17 GHz range with a power level of 5 mW. The switching on or off of the source was randomized by tossing a coin, the level of success according to chance thus being 0.5. The subject was then asked to sense the source being on or off. The results were not significantly different from chance.

Telepathy/Distant Viewing: We only investigated integrated power levels, as enough power has to be radiated before a signal can achieve its desired effect, whatever modulation the signal may have. We investigated three subjects who claimed telepathic abilities and one who claimed distant-viewing capabilities [in which a subject is supposed to be able to describe accurately a remote site without being physically there]. No unusual EM signals were detected, nor were the subjects successful in telepathic transmissions.

We have tried to detect EM signals emitted by people, and in particular the Fourier spectrum of such signals, to test the reality of ESP phenomena. All experiments failed to yield any unusual EM radiation. It is possible to conceive transmission of EM energy from one person to another, or of emission by one person in a manner undetectable by the apparatus we have used. This would have been so if very brief pulses of EM energy were used in such signalling with times less than the response time of the corresponding apparatus at the frequency used. **There are no known mechanisms in the body able to produce such signals at the power levels required to produce the effects. We have also found that humans are insensitive to low levels of EM. A possible mechanism for such signalling is therefore clearly ruled out for telepathy and distant-viewing.** The EM levels emitted to achieve metal-bending [in the microwave range to achieve the desired focusing] are joules, and there is no known mechanism in the body to achieve a peak power output of GW; it is difficult to suppose that this would be possible without severe tissue damage.

Bottom line: **By itself the human brain can neither send nor receive the stuff of which specific thoughts are made - save through the media of the physical senses.** Therefore **extra-sensory** perception does **not** occur, nor do purely mental efforts to produce physical effects (psychokinesis/PK). “Successes” in these fields are either coincidental, the results of non-mental physical phenomena (magnetic fields, gravity, etc.), or deliberate deception by clever stage-magic trickery *a la* Uri Geller and Madame Zodiak.

The principle of resonance as discussed above is **not** invalidated, however. Even though EM waves may not be detectable by human consciousness, they can still affect human brain-waves by inducing resonance at similar cyclical rates. So the possibility of subconscious, resonance-triggered changes to one’s **general** mental state (*alpha*, *beta*, *theta*, or *delta*) remains.

Psychological Operations specialists know that it is the **conscious** mind which must be reached for opinion or behavior modification, and that it is reached reliably and predictably through the normal communicative senses. Similarly the mind expresses itself through these same senses, and through media technology we have developed a multitude of ways to amplify and transmit such expressions. Communication between minds is no longer the problem; it is the **content** of that communication and the **ethics** underlying it which challenge us, particularly as old nation-state, ethnic, cultural, and social standards continue to mutate in this final decade of the 20th century.