

**Mind Control:
The Ultimate Brave New World**

Technologies for stimulating the brain and controlling the mind can have benefits, but they have a dark side that military and intelligence planners have been exploiting for decades.

by Nick Begich, MD © 2006
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– US Air Force, New World Vistas: Air and Space Power for the 21st Century¹

The idea that the brain can be made to function at a more efficient and directed level has been the subject of research by scientists, mystics, health practitioners and others for as long as mankind has contemplated such matters. In the last decade, advances in the science of the brain have begun to yield significant results. The results of the research are startling, challenging and, if misused, will be frightening. The certainty to be expected from the research is that it will continue to proceed.

The idea that people can be impacted by external signal generators which create, for example, pulsed electromagnetic fields, pulsed light and pulsed sound signals is not new. The following information

demonstrates some of the possibilities and gives hints of the potentials of the technology. On the positive side, researchers in the field of light and sound are making huge progress in a number of areas, including working with learning disabilities, attention deficit disorders, stroke recovery, accelerated learning, drug/alcohol addiction and enhanced human performance. The research has shown that certain brain states can be influenced in a way which causes changes within the brain itself. These changes allow individuals the possibility of influencing specific conditions in the mind and body otherwise thought beyond our direct control.

The military and others interested in such things have also focused a large amount of research into this area for the purpose of enhancing the performance of soldiers while degrading the performance of adversaries.

What is known is that great strides in the area of behaviour control are now possible with systems developed and under development by most sophisticated countries on the planet. These new technologies represent a much different approach to warfare which our government is describing as part of the "Revolution in Military Affairs". While these new technologies offer much for military planners, they offer even more to citizens generally. Their potential use in military applications and "peacekeeping" creates the need for open debate of this new realm of intelligence-gathering, manipulation and warfare. The most basic ethical questions regarding use of these technologies have not been adequately addressed.

At the same time that defence and intelligence-gathering capabilities are being sought, independent researchers are fully engaged in seeking positive uses for the technology. The potentials of the technology, like all technology, are great as both a destructive or constructive

force for change. The idea of enhancing physical and mental performance while bypassing what heretofore was a long and arduous road to achieve the same results is exciting. Maintaining the research in the open literature and ensuring that constructive uses are encouraged is critical.

I began looking into technologies for stimulating brain performance about fifteen years ago. At the time, there were limited tools available compared to what is now possible. Now it is possible to obtain light and sound, electrocranial and biofeedback tools for use in this exploration. Moreover, there are audio materials also available for use with most of these tools. These audio materials can be used for learning languages, behaviour modification or enhanced performance. The biofeedback side of the new technology is being used to train people to reach specific desired brain states for optimum performance.

The use of light and sound devices for stimulating brain activity which is conducive to accelerated learning and relaxation is a growing area of interest to many people. Moreover, the use of these tools in conjunction with biofeedback has been the subject of quickly evolving research. The combined technologies of brain state inducement and biofeedback offer exciting possibilities. It has been found with the combination that a person, in a matter of several weeks, can learn to modify purposefully his/her brain activity in a way which would have taken a Zen master twenty years to accomplish. It has been shown that some children with attention deficit disorders can be taught to regulate their brain activities so that they can learn efficiently without chemicals. It has been demonstrated that recovering stroke victims can more rapidly recover when working with brain-biofeedback practitioners and these new tools.

The research is also teaching us a good deal about our suggestibility in terms of influences which

have an impact on our behaviour. The underlying message that comes with the new technology is the necessity of providing safeguards against misuse. Additionally, recognition of the everyday stimulation we all get and the effect of these information inputs on our learning processes becomes more clear. The suggestibility of humans, particularly when in a fatigued condition, has been exploited by terrorists, cults and others in pursuit of their own aims. The passive suggestibility of radio and television as we weave in and out of the semi-sleep states is for the most part not even recognised. The passive learning situations become even more relevant when we consider how we "receive the news" in our daily lives. The ability to influence thinking, behaviour and performance is indeed a two-edged sword.

The 1980s and 1990s were focused on building up the physical body. The 21st century will see a focus on building the mind and optimising mental performance. The idea of merging the new technologies into education is interesting and also calls into question who will decide what is to be learned. In the interim, the possibilities are incredible for those interested in such pursuits. The control of our mental function is no different than the control of the muscles in our bodies. Learning to control or coordinate the activity of our minds will propel our bodies through a much more productive and fuller life. The new tools may offer just such opportunities.

On the other side of the issue is the potential for misuse and exploitation of the science. Military planners, law enforcement officials and others are now seeking the covert use of these technologies for controlling the ultimate "information processor"—the Human Being.

MK-ULTRA

"Dr Gottlieb, born August 3, 1918, was the CIA's real-life 'Dr Strangelove'—a brilliant bio-chemist who designed and headed MK-ULTRA, the agency's most far-reaching drug and mind-control program at the height of the Cold War. Though the super-secret MK-ULTRA was ended in 1964, a streamlined version called MK-SEARCH was continued—with Gottlieb in charge—until 1972."²

During this period, substantial interest in mind control was stimulated by Soviet use of microwaves. In 1988, "thirty-five years after security officers first noticed that the Soviets were bombarding the US embassy in Moscow with microwave radiation, the US government still has not determined conclusively—or is unwilling to reveal—the purpose behind the beams".³ The US government did know what was happening. The Soviets had developed methods for disrupting the purposeful thought of humans and were using their knowledge to impact diplomats in the United States embassy in Moscow.

In 1994, a report concerning the MKULTRA program was issued, containing the following information:

"In the 1950s and '60s, the CIA engaged in an extensive program of human experimentation, using drugs, psychological, and other means, in search of techniques to control human behavior for counterintelligence and covert action purposes.

"In 1973, the CIA purposefully destroyed most of the MKULTRA files concerning its research and testing on human behaviour. In 1977, the agency uncovered additional MKULTRA files in the budget and fiscal records that were not indexed under the name MKULTRA. These documents detailed over 150 subprojects that the CIA funded in this area, but no evidence was uncovered at that time concerning the use of radiation.

"The CIA did investigate the use and effect of microwaves on human beings in response to a Soviet practice of beaming microwaves on the US embassy.

The agency determined that this was outside the scope of the Advisory Committee's purview.

"...The Church Committee found some records, but also noted that the practice of MKULTRA at that time was 'to maintain no records of the planning and approval of test programs'. ...MKULTRA itself was technically closed out in 1964, but some of its work was transferred to the Office of Research and Development (ORD) within the DS&T under the name MKSEARCH and continued into the 1970s.

"The CIA worked closely with the Army in conducting the LSD experiments. This connection with the Army is significant because MKULTRA began at the same time that Secretary of Defense Wilson issued his 1953 directive to the military services on ethical guidelines for human experiments.

"Throughout the course of MKULTRA, the CIA sponsored numerous experiments on unwitting humans. After the death of one such individual (Frank Olson, an army scientist, was given LSD in 1953 and committed suicide a week later), an internal CIA investigation warned about the dangers of such experimentation. The CIA persisted in this practice for at least the next ten years. After the 1963 IG [Inspector-General] report recommended termination of unwitting testing, Deputy Director for Plans Richard Helms (who later became Director of Central Intelligence) continued to advocate covert testing on the ground that 'positive operational capability to use drugs is diminishing, owing to a lack of realistic testing. With increasing knowledge of state of the art, we are less capable of staying up with the Soviet advances in this field'. ...Helms attributed the cessation of the unwitting testing to the high risk of embarrassment to the Agency as well as the 'moral problem'. He noted that no better covert situation had been devised than that which had been used, and that 'we have no answer to the moral issue'."4

They did have the answers to the moral questions on human experimentation but chose to ignore them, destroy the records, hide the truth and still continue in their efforts. Nothing has changed as each participating organisation, using national security laws, avoids disclosure and accountability. The records which were destroyed contained the evidence necessary perhaps to send some participants to jail for society's version of behaviour modification. Once again, there was no accountability and no recognition of the rights of the individuals damaged by these experiments.

Mind Wars

"For the first time in some 500 years, a scientific revolution has begun that will fundamentally change the world as much as the Renaissance and Enlightenment did. A handful of extraordinary new advances in science are taking humans quickly and deeply into areas that will have profound implications for the future."5

One of these areas is control of the human mind. The issues surrounding behaviour modification, mind control and information warfare become crystal clear as the facts unfold.

The following is taken from a current military document, "The Information Revolution and the Future Air Force" by Colonel John A. Warden III, USAF, which clarifies their position in the emerging area of research, taking a much different direction than the one described above:

"We're currently experiencing, on an unprecedented global basis, three simultaneous revolutions, any one of which would be more than enough to shock and confound us. The first revolution, a geopolitical revolution, sees a single dominant power in the world for the first time since the fall of Rome. The opportunities that are inherent in this situation are extraordinary, as are the pitfalls. Unfortunately, there is no one around that has

first hand experience in how to deal with that kind of single power dominant world.

"The second revolution, and there's a lot of discussion about this so far, is the information revolution. As other people have mentioned, it is following inexorably in tandem behind Moore's law of computing power. Attendant to it, though, is not the creation of new ideas and technologies, but also an exponential growth in the velocity of information dissemination, and for us that is of extraordinary importance. A key part of this information revolution has an awesome impact on competition. The business that introduced a new product ten years ago could count on probably five years before it had to look seriously at potential competitors based overseas. Today, you're lucky if you can count on five months or even five weeks before you are facing the overseas competitor. In today's world, success simply demands rapid introduction of successively new products or military systems. Success now goes to the organization which exploits information almost instantly, while failure is the near certain fate of the organization which tries to husband or hide ideas. Real simple—use it or you're going to lose it.

"The third revolution, which is a little bit more complex, is the military/technological revolution, or in some places called the revolution in military affairs. I'm convinced that this is the first military technological revolution ever because we now have, for the first time, a conceptually different way to wage war. We can wage war in parallel now. In the past, communications and weapons technology, especially weapons accuracy, have constrained us to waging serial war. This changes almost everything.

"Biological Process Control: As we look forward to the future, it seems likely that this nation will be involved in multiple conflicts where our

military forces increasingly will be placed in situations where the application of full force capabilities of our military might cannot be applied. We will be involved intimately with hostile populations in situations where the application of non-lethal force will be the tactical or political preference. It appears likely that there are a number of physical agents that might actively, but largely benignly, interact or interfere with biological processes in an adversary in a manner that will provide our armed forces the tools to control these adversaries without extensive loss of life or property. These physical agents could include acoustic fields, optical fields, electromagnetic fields, and combinations thereof. This paper will address only the prospect of physical regulation of biological processes using electromagnetic fields.

"Prior to the mid-21st century, there will be a virtual explosion of knowledge in the field of neuroscience. We will have achieved a clear understanding of how the human brain works, how it really controls the various functions of the body, and how it can be manipulated (both positively and negatively). One can envision the development of electromagnetic energy sources, the output of which can be pulsed, shaped, and focused, that can couple with the human body in a fashion that will allow one to prevent voluntary muscular movements, control emotions (and thus actions), produce sleep, transmit suggestions, interfere with both short-term and long-term memory, produce an experience set, and delete an experience set. This will open the door for the development of some novel capabilities that can be used in armed conflict, in terrorist/hostage situations, and in training. New weapons that offer the opportunity of control of an adversary without resorting to a lethal situation or to collateral casualties can be developed around this concept. This would offer significant

improvements in the capabilities of our special operation forces.

"Initial experimentation should be focused on the interaction of electromagnetic energy and the neuromuscular junctions involved in voluntary muscle control. Theories need to be developed, modeled, and tested in experimental preparations. Early testing using in vitro cell cultures of neural networks could provide the focus for more definitive intact animal testing. If successful, one could envision a weapon that would render an opponent incapable of taking any meaningful action involving any higher motor skills (e.g., using weapons, operating tracking systems). The prospect of a weapon to accomplish this when targeted against an individual target is reasonable; the prospect of a weapon effective against a massed force would seem to be more remote. Use of such a device in an enclosed area against multiple targets (hostage situation) may be more difficult than an individual target system, but probably feasible.

"It would also appear to be possible to create high fidelity speech in the human body, raising the possibility of covert suggestion and psychological direction. When a high power microwave pulse in the gigahertz range strikes the human body, a very small temperature perturbation occurs. This is associated with a sudden expansion of the slightly heated tissue. This expansion is fast enough to produce an acoustic wave. If a pulse stream is used, it should be possible to create an internal acoustic field in the 5-15 kilohertz range, which is audible. Thus, it may be possible to 'talk' to selected adversaries in a fashion that would be most disturbing to them.

"In comparison to the discussion in the paragraphs above, the concept of imprinting an experience set is highly speculative, but nonetheless highly exciting. Modern electromagnetic scattering theory raises the prospect that ultrashort pulse

scattering through the human brain can result in reflected signals that can be used to construct a reliable estimate of the degree of central nervous system arousal. The concept behind this 'remote EEG' is to scatter off of action potentials or ensembles of action potentials in major central nervous system tracts. Assuming we will understand how our skills are imprinted and recalled, it might be possible to take this concept one step further and duplicate the experience set in another individual. The prospect of providing a 'been there-done that' knowledge base could provide a revolutionary change in our approach to specialized training. How this can be done or even if it can be done are significant unknowns [sic]. The impact of success would boggle the mind!"⁶

The above report was a forecast for the year 2020. However, the reality is that these technologies already exist and there are a number of patents in the open literature which clearly show the possibilities. This research is not new but goes back to the 1950s.

"A new class of weapons, based on electromagnetic fields, has been added to the muscles of the military organism. The C3I [Command, Control, Communications and Intelligence] doctrine is still growing and expanding. It would appear that the military may yet be able to completely control the minds of the civilian population."⁷

The targeting of civilian populations by the military is a significant departure from its history. In the past, the military has used persuasion through real information rather than using deliberate deception and mind manipulation to win populations over.

"A decoy and deception concept presently being considered is to remotely create the perception of noise in the heads of personnel by exposing them to low power, pulsed microwaves. When people are illuminated with properly modulated low power

microwaves the sensation is reported as a buzzing, clicking, or hissing which seems to originate (regardless of the person's position in the field) within or just behind the head. The phenomena occurs [sic] at average power densities as low as microwatts per square centimeter with carrier frequencies from 0.4 to 3.0 GHz. By proper choice of pulse characteristics, intelligible speech may be created. Before this technique may be extended and used for military applications, an understanding of the basic principles must be developed. Such an understanding is not only required to optimize the use of the concept for camouflage, decoy and deception operations but is required to properly assess safety factors of such microwave exposure."8

Actual testing of certain systems has proven "that movements, sensations, emotions, desires, ideas, and a variety of psychological phenomena may be induced, inhibited, or modified by electrical stimulation of specific areas of the brain. These facts have changed the classical philosophical concept that the mind was beyond experimental reach."9

The first widespread interest in the subject of mind control hit the mainstream of military think-tanks after the Korean War when returning prisoners of war exhibited significant behavioural changes. In 1956, the following was written into the United States Congressional Record:

"Reports of the treatment of American prisoners of war in Korea have given rise to several popular misconceptions, of which the most widely publicized is 'brainwashing'. The term itself has caught the public imagination and is used, very loosely, to describe any act committed against an individual by the Communists. Actual 'brainwashing' is a prolonged psychological process, designed to erase an individual's past beliefs and concepts and to substitute new ones. It is a highly coercive

practice which is irreconcilable with universally accepted medical ethics. In the process of 'brainwashing', the efforts of many are directed against an individual. To be successful, it requires, among other things, that the individual be completely isolated from normal associations and environment."¹⁰

The ethical considerations have not changed, but the military's position on the ethics has changed as it has gained significant capabilities in these areas. "Psychological warfare is becoming increasingly important for US forces as they engage in peacekeeping operations. 'In the psychological operations area, we're always looking to build on our existing technologies, so much of this is evolutionary,' [military planner] Holmes said. 'It is critically important that we stay ahead of the technology curve.'"¹¹ The temptation to dabble in this area has now overcome the ethical considerations.

A Russian military article offered a slightly different slant to the problem, declaring that "humanity stands on the brink of a psychotronic war" with the mind and body as the focus.^{11a} These "psychotronic" weapons aim to control or alter the psyche, or to attack the various sensory and data-processing systems of the human organism. In both cases, the goal is to confuse or destroy the signals that normally keep the body in equilibrium. According to a US Department of Defense directive (S-3600.1, December 9, 1996), "information warfare" is defined as "an information operation conducted during time of crisis or conflict to achieve or promote specific objectives over a specific adversary or adversaries". An "information operation" is defined in the same directive as "actions taken to affect adversary information and information systems". These "information systems" lie at the heart of the modernisation effort of the US armed forces and manifest themselves as

hardware, software, communications capabilities and highly trained individuals.

Information warfare has tended to ignore the role of the human body as an information or data processor in this quest for dominance, except in those cases where an individual's logic or rational thought may be upset via disinformation or deception... Yet, the body is capable not only of being deceived, manipulated or misinformed but also shut down or destroyed—just as any other data-processing system. The "data" the body receives from external sources, such as electromagnetic, vortex or acoustic energy waves, or creates through its own electrical or chemical stimuli, can be manipulated or changed, just as the data (information) in any hardware system can be altered. If the ultimate target of information warfare is the information-dependent process, "whether human or automated", then the definition implies that human data-processing of internal and external signals can clearly be considered an aspect of information warfare.¹²

On a much grander scale, the use of mind control was contemplated as far back as 1969 by a former science adviser to President Johnson. "Gordon J. F. Macdonald, a geophysicist specializing in problems of warfare, has written that accurately timed, artificially excited strokes 'could lead to a pattern of oscillations that produce relatively high power levels over certain regions of the earth... In this way, one could develop a system that would seriously impair the brain performance of very large populations in selected regions over an extended period...'"¹³ This capability exists today through the use of systems which can stimulate the ionosphere to return a pulsed (modulated) signal which, at the right frequency, can override normal brain functions. By overriding the natural pulsations of the brain, chemical

reactions are triggered which alter the emotional state of targeted populations.

Subliminal Messages and Commercial Uses

One of the areas where this new technology is being used is in systems to dissuade shoplifters, using sound below the range of hearing. "Japanese shopkeepers are playing CDs with subliminal messages to curb the impulses of the growing band of shoplifters. The Mind Control CDs have soundtracks of popular music or ocean waves, with encoded voices in seven languages...warning that anyone caught stealing will be reported to the police."14

A number of devices have been developed to influence behaviour in this way, and patents have been awarded. The following summations are taken from some of these patents dealing with both audio and video programming—only this time, we are the program:

"An auditory subliminal programming system includes a subliminal message encoder that generates fixed frequency security tones and combines them with a subliminal message signal to produce an encoded subliminal message signal which is recorded on audio tape or the like. A corresponding subliminal decoder/mixer is connected as part of a user's conventional stereo system and receives as inputs an audio program selected by the user and the encoded subliminal message."15

"Ambient audio signals from the customer shopping area within a store are sensed and fed to a signal processing circuit that produces a control signal which varies with variations in the amplitude of the sensed audio signals. A control circuit adjusts the amplitude of an auditory subliminal anti-shoplifting message to increase with increasing amplitudes of sensed audio signals and decrease with decreasing amplitudes of sensed audio signals. This amplitude controlled subliminal message may be

mixed with background music and transmitted to the shopping area."16

"Data to be displayed is combined with a composite video signal. The data is stored in memory in digital form. Each byte of data is read out in sequential fashion to determine: the recurrence display rate of the data according to the frame sync pulses of the video signal; the location of the data within the video image according to the line sync pulses of the video signal; and the location of the data display within the video image according to the position information."17

"This invention is a combination of a subliminal message generator that is 100% user programmable for use with a television receiver. The subliminal message generator periodically displays user specified messages for the normal television signal for [a] specific period of time. This permits an individual to employ a combination of subliminal and supraliminal therapy while watching television."18

The above points may seem a bit complicated; however, they can be summarised. These patents are designed to provide a way to hide messages in video or audio formats, masking any suggestions that the programmer wishes to convey. These kinds of messages bypass the conscious mind and are acted upon by the person hearing them; they are not sorted out by the active mind. Although these technologies are being developed for personal use and as security measures, consider the possibilities for abuse by commercial interests where the messages might be "buy, buy, buy", "drink more, don't worry", or some other self-serving script. Should these systems be regulated? By whom and under what conditions?

New Standards for What is a Memory

"Nevada is currently the only state to allow witness testimony of a person who has undergone

hypnosis. As of October 1, 1997, courts hearing both civil and criminal cases can take a hypnotically refreshed testimony, as long as the witness, if a minor, has had the informed consent of parent or guardian, and the person performing the hypnosis is any of the following: a health care provider, a clinical social worker licenced in accordance with 641B of Nevada Revised Statute, or a disinterested investigator."¹⁹

This issue will surely become more complex as technology advances in terms of evidence. When the day arrives that it is possible to change or alter memory completely, as suggested earlier by military officers, what then? How will we separate the real from the unreal? What will be the impact on the burden of proof in courts as it relates to "reasonable doubt"?

Again, the emergence of the technology has first to be recognised as real before laws can be constructed and systems established for controlling misuse. Think how long it has taken the courts even to recognise hypnotherapy as valid science. We are hopeful that we will not have to wait so long for legislative bodies to take the initiative to address these issues.

Auditory Effects

The questions which this section raises are profound. Is it possible to transmit a signal to the brain of a person, from a distance, which deposits specific sounds, voice or other information which can be understood? Is it possible to transfer sound in a way where only the targeted person can hear the "voice in the head" and no one else hears a thing? Is it possible to shift a person's emotions using remote electromagnetic tools? The answer to each of these questions is a resounding "Yes!" The state of the science has passed even the most optimistic predictions, and the capabilities are here now.

Military literature suggests that this is possible. A series of experiments, patents and independent research confirm that this technology exists today. While giving testimony to the European Parliament in 1998, I demonstrated one such device to the astonishment of those in attendance. This particular device required physical contact in order to work and was nearly forty years old. This area of research is one of the most important because it points to the ultimate weapon of political control: the ability to place information directly into the human brain, bypassing all normal filtering mechanisms.

In 1995, the US Department of Defense put forward the contract, "Communicating via the Microwave Auditory Effect; Awarding Agency: Department of Defense; SBIR Contract Number: F41624-95-C-9007". The description of this technology, which would be used for direct communications with military personnel, is written as follows:

"Title: Communicating via the Microwave Auditory Effect

"Description: An innovative and revolutionary technology is described that offers a means of low-probability-of-intercept Radio Frequency (RF) communications. The feasibility of the concept has been established using both a low intensity laboratory system and a high power RF transmitter. Numerous military applications exist in areas of search and rescue, security and special operations."20

The feasibility was not only demonstrated in the laboratory but also in the field using a radio-frequency carrier. In the case of the Gulf War, we had always suspected that the reason the Iraqis gave up in mass was not because of the heavy bombardments but because they were being hit with new "non-lethal" systems which created fear and perhaps even worse. Our research uncovered reports which now confirm our suspicions as fact.

"What the 'Voice of the Gulf' began broadcasting, along with prayers from the Koran and testimonials from well-treated Iraqi prisoners, was precise information on the units to be bombed each day, along with a new, silent psychological technique which induced thoughts of great fear in each soldier's mind..."²¹

This makes a great deal of sense today, given what has become increasingly known about mind-control weapons.

"According to statements made by captured and deserting Iraqi soldiers, however, the most devastating and demoralizing programming was the first known military use of the new, high tech, type of subliminal messages referred to as ultra-high-frequency 'Silent Sounds' or 'Silent Subliminals'."²²

The use of these new techniques, we believe, went well beyond the injection of fear and may have involved more powerful signal generators which caused the other symptoms which the world observed, including head pain, bleeding from the nose, disorientation and nausea—all possible with so-called non-lethal weapons. The questions which now remain: Are they still using the techniques like an electronic concentration camp in order to control the population? Is this part of the way in which modern governments will suppress rogue nations?

The development of the technology followed a very traceable history which began in the early 1960s at the height of the Cold War. In 1961, Dr Allen Frey wrote: "Our data to date indicate that the human auditory system can respond to electromagnetic energy in at least a portion of the radio frequency (RF) spectrum. Further, this response is instantaneous and occurs at low power densities, densities which are well below that necessary for biological damage. For example, the effect has been induced with power densities 1/60 of the standard maximum safe level for continuous exposure."²³

This observation had incredible ramifications because it meant that within certain ranges RF could create a sound within the brain of a person at energy concentration levels considered too small to be significant.

Later that year, a patent was issued to Henry K. Puharich and Joseph L. Lawrence which stated in part: "The present invention is directed to a means for auxiliary hearing communication, useful for improving hearing, for example, and relates more specifically to novel and improved arrangements for auxiliary hearing communications by effecting the transmission of sound signals through the dental structure and facial nervous system of the user."²⁴ This crude device produced a signal which could be heard in the brain by inducing a vibration which was transferred through the bone into the inner ear, where it was then carried to the brain via the nervous system. Puharich continued researching along this line, gaining an additional patent in 1965.²⁵ Both of these inventions required physical contact with the head of the subject.

By 1962, Dr Allan Frey had advanced his work and was able to create sound at a distance from the subject, using a pulsed (modulated) radio transmitter. "Using extremely low average power densities of electromagnetic energy, the perception of sounds was induced in normal and deaf humans. The effect was induced several hundred feet from the antenna the instant the transmitter was turned on, and is a function of carrier frequency and modulation."²⁶

What was occurring in this research were the first attempts to "tune" into the brain of a human in the same manner as "tuning" into a radio station. The same energy was being used; it was just at a different frequency with a slight vibration (modulation) on the carrier wave which delivered the signal.

In 1968, G. Patrick Flanagan was issued a patent for a device which also required physical contact with the skin of the subject. "This invention relates to electromagnetic excitation of the nervous system of a mammal and pertains more particularly to a method and apparatus for exciting the nervous system of a person with electromagnetic waves that are capable of causing that person to become conscious of information conveyed by the electromagnetic waves."²⁷

This invention was much different than what others had created by that time, because this device actually sent a clear, audible signal through the nervous system to the brain.

The device could be placed anywhere on the body, and a clear voice or music would appear in the head of the subject. This was a most unbelievable device which had actually been invented in the late 1950s. It had taken years to convince patent examiners that it worked. The initial patent was only granted after the dramatic demonstration of the device on a deaf employee of the US Patent Office.

In 1972, a second patent was issued to G. Patrick Flanagan after being suppressed by the military since 1968. This device was much more efficient in that it converted a speech waveform into "a constant amplitude square wave in which the transitions between the amplitude extremes are spaced so as to carry the speech information".²⁸

What this did is establish the code of modulation or timing sequences necessary for efficient transfers into the nervous system where the signals could be sent to the brain and decoded as sound in the same way that normal sound is decoded. The result was a clear and understandable sound.

The military interest in auditory effects was present since the first inventions were patented, but in 1971 came a system which would allow troops to communicate through a radio transmitter which would render the enemy deaf and disoriented while

allowing "friendly" combatants to communicate at the same time.

The device is described as follows: "Broadly, this disclosure is directed to a system for producing aural and psychological disturbances and partial deafness of the enemy during combat situations. Essentially, a high directional beam is radiated from a plurality of distinct transducers and is modulated by a noise, code, or speech beat signal. The invention may utilize various forms and may include movable radiators mounted on a vehicle and oriented to converge at a desired point, independently positioned vehicles with a common frequency modulator, or means employed to modulate the acoustical beam with respect to a fixed frequency. During combat, friendly forces would be equipped with a reference generator to provide aural demodulation of the projected signal, thereby yielding an intelligible beat signal while enemy personnel would be rendered partially deaf by the projected signal as well as being unable to perceive any intelligence transmitted in the form of a modulated beat signal."²⁹ What this says simply is that at-a-distance personal communication could be achieved by one's own forces while denying it to others and disabling adversaries at the same time.

In 1974, it was noted that using a microwave a signal was changed (transduced) by the receiver into an acoustic signal. This signal was "heard" inside or just behind the head. The report stated: "...it was noticed that the apparent locus of the 'sound' moved from the observer's head to the absorber. That is, the absorber acted as a transducer from microwave energy to an acoustic signal. This observation, to the best of our knowledge, has not been described in the literature and may serve as a mechanism mediating the 'hearing' of pulsed microwave signals."³⁰

By 1989, the science took another leap forward with the combination of the modulated signal on a microwave carrier. This provided a much more efficient delivery of the sound. It was reported: "Sound is induced in the head of a person by radiating the head with microwaves in the range of 100 megahertz to 10,000 megahertz that are modulated with a particular waveform. The waveform consists of frequency modulated bursts. Each burst is made up of ten to twenty uniformly spaced pulses grouped tightly together. The burst width is between 500 nanoseconds and 100 microseconds. The pulse width is in the range of 10 nanoseconds to 1 microsecond. The bursts are frequency modulated by the audio input to create the sensation of hearing in the person whose head is irradiated."³¹

Two other patents awarded that year addressed this breakthrough. The first invention related to devices for aiding hearing in mammals: "The invention is based upon perception of sounds which is experienced in the brain when the brain is subjected to certain microwave radiation signals."³² The second invention confirmed the earlier observations: "Sound is induced in the head of a person by radiating the head with microwaves in the range of 100 megahertz to 10,000 megahertz that are modulated with a particular waveform. The waveform consists of frequency modulated bursts. Each burst is made up of ten to twenty uniformly spaced pulses grouped tightly together."³³

In 1992, another patent was issued with the following description: "A silent communications system in which nonaural carriers, in the very low or very high audio frequency range or in the adjacent ultrasonic frequency spectrum, are amplitude or frequency modulated with the desired intelligence and propagated acoustically or vibrationally, for inducement into the brain, typically through the use of loudspeakers, earphones or piezoelectric transducers."³⁴ This

device had limited practicality in that it required the person to be in contact with or in close proximity to the sending device.

When examined together, each of these patents is seen to be a discrete step toward a new weapon system.

In 1995, it was reported that in the early research, clear sound signals had been sent and received. It is difficult now to determine what level of military or other research was being advanced in these areas. The history is clear from congressional reports that this entire area was of great interest to the intelligence communities. According to Scientists for Global Responsibility: "Drs Alan Frey and Joseph Sharp conducted related research. Sharp himself took part in these experiments and reported that he heard and understood words transmitted in pulse-microwave analogs of the speaker's sound vibrations. Commenting on these studies, Dr Robert Becker, twice nominated for the Nobel Peace Prize, observed that such a device has obvious applications in covert operations designed to drive a target crazy with voices, or deliver undetectable instructions to a potential assassin."³⁵

Then, in 1996 came another development, a "wireless communication system undetectable by radio frequency methods for converting audio signals, including human voice, to electronic signals in the ultrasonic frequency range, transmitting the ultrasonic signal by means of acoustic pressure waves across a carrier medium, including gases, liquids, or solids, and reconvertng the ultrasonic acoustical pressure waves back to the original audio signal".³⁶ Although this was meant to be used with both receiving and sending hardware, what was determined were the modulation methods for transferring the signal.

The real work was yet to be made public in the form of patents. However, the military claims in the

area were starting to surface. What was known from experience was that patents were being held back by the government and confiscated by the military. When this intellectual property was seized, the inventors were given a choice: work for the government, or you cannot continue research or even talk about your invention under a national security order. Those who did not cooperate could have their work effectively shut down.

Brain-to-Computer Connections

Major steps are being made to connect biology to information technology.

In 1990 came the news that "[s]cientists have succeeded for the first time in establishing a colony of human brain cells that divide and grow in laboratory dishes, an achievement with profound implications for understanding and treating a wide range of neurological disorders from epilepsy to Alzheimer's disease".³⁷

According to a report in the Wall Street Journal in February 1994: "Researchers said they took a key first step toward creating electronic microchips that use living brain cells. The researchers said they had learned how to place embryonic brain cells in desired spots on silicon or glass chips and then induce the brain cells to grow along desired paths."³⁸

The other possibility is that both brain cells and computer hardware could be built in the laboratories, creating, perhaps, the first biologically augmented computers.

What's on Your Mind?

A significant initiative was started for use in creating counter-drug measures: the Brain Imaging Technology Initiative. "This initiative establishes NIDA [National Institute on Drug Abuse] regional neuroimaging centers and represents an interagency cooperative endeavor funded by CTAC [Counterdrug

Technology Assessment Center], Department of Energy (DOE), and NIDA to develop new scientific tools (new radiotracers and technologies) for understanding the mechanisms of addiction and for the evaluation of new pharmacological treatments."39 Through neuroimaging, not only could the stated objective be achieved, but through imaging a person's emotional states could be mapped, chemical influences determined and perhaps even specific thoughts read.

Back in 1975, Physics Today reported: "Developments in ways to measure the extremely weak magnetic fields emanating from organs such as the heart, brain and lungs are leading to important new methods for diagnosing abnormal conditions."40

In 1995, a system for capturing and decoding brain signals was patented which includes a transducer for stimulating a person and EEG transducers for recording brainwave signals from the person. It also includes a computer for controlling and synchronising stimuli presented to the person and at the same time recording brainwave signals, and either interpreting these signals using a model for conceptual, perceptual and emotional thought to correspond to the EEG signals of the person's thoughts or comparing the signals to normal brain signals from a normal population to diagnose and locate the origin of brain-dysfunctional underlying perception, conception and emotion.41 In other words, the device reads your mind by comparing your brain activity to other people's.

In 1996 came this Orwellian development: "...a method for remotely determining information relating to a person's emotional state, as waveform energy having a predetermined frequency and a predetermined intensity is generated and wirelessly transmitted towards a remotely located subject. Waveform energy emitted from the subject is detected and automatically analyzed to derive information relating to the individual's emotional

state. Physiological or physical parameters of blood pressure, pulse rate, pupil size, respiration rate and perspiration level are measured and compared with reference values to provide information utilizable in evaluating [an] interviewee's responses or possibly criminal intent in security sensitive areas."⁴² This technology could be used for determining what a person might do, given his totally discernible interior emotions. This technology walks through any behaviour wall a person can erect and goes straight to the brain to see what may be on a person's mind. Inducing behaviour rather than just reading a person's emotional state is the subject of one scientist's work in Canada. "Scientists are trying to recreate alien abductions in the laboratory... The experiment, to be run by Professor Michael Persinger, a neuroscientist at Laurentian University, of Sudbury, Ontario, consists of a converted motorcycle helmet with solenoids on its sides that set up magnetic fields across a subject's head."⁴³ This experiment was carried out and was the subject of a Canadian Broadcasting System exposé on mind control. The segment ran on a program called Undercurrents in February 1999. This author also appeared in that program, along with several others interested in this field.

A 1993 report said that for over 20 years Dr Persinger "...has been working on a theory that connects not only UFOs and earthquakes, but also powerful electromagnetic fields and an explanation of paranormal beliefs in terms of unusual brain activity. He has also found that stimulating another area, the temporal lobes, can produce all sorts of mystical experiences, out-of-body sensations and other apparently paranormal phenomena."⁴⁴ This doctor's work suggests that these experiences may be the result of activity in the brain and not the actual experiences of the individuals. He has had some measure of success in

re-creating many of these experiences in his subjects. Dr Persinger is also known for his work in studying the effects of ELF [extra-low-frequency waves] on memory and brain function.⁴⁵

In 1991, a method for changing brain waves to a desired frequency was patented.⁴⁶ A 1975 patent discussed a similar technology: a device and method for "...sensing brain waves at a position remote from a subject whereby electromagnetic signals of different frequencies are simultaneously transmitted to the brain of the subject in which the signals interfere with one another to yield a waveform which is modulated by the subject's brain waves. The interference waveform which is representative of the brain wave activity is retransmitted by the brain to a receiver where it is demodulated and amplified. The demodulated waveform is then displayed for visual viewing and then routed to a computer for further processing and analysis. The demodulated waveform also can be used to produce a compensating signal which is transmitted back to the brain to effect a desired change in electrical activity therein."⁴⁷ In simple terms, the brain's activity is mapped in order to read a person's emotional state, conceptual abilities or intellectual patterns. A second signal can be generated and sent back into the brain which overrides the natural signal, causing the brain's energy patterns to shift. This is the "brain entrainment" which causes the shift in consciousness. There are many uses of a positive nature for this kind of technology, as was mentioned at the front of this section, the important factor being who controls the technology and for what purpose.

In January 1998, the following encapsulating statement appeared in the leading scientific journal *Nature*, quoting Pasteur Institute neuroscientist Jean-Pierre Changeux, chairman of the French national bioethics committee: "But

neuroscience also poses potential risks, he said, arguing that advances in cerebral imaging make the scope for invasion of privacy immense...it will become commonplace and capable of being used at a distance, he predicted. That will open the way for abuses such as invasion of personal liberty, control of behaviour and brainwashing."48

Dancing to the Tune of an Unknown Drummer

In "...a dramatic demonstration of mind reading, neuroscientists have created videos of what a cat sees by using electrodes implanted in the animal's brain. 'Trying to understand how the brain codes information leads to the possibility of replacing parts of the nervous system with an artificial device,' he said."49 The scientist commenting on this technology—Gattett Stanley, assistant professor of biomedical engineering at Harvard—saw the future possibility of brain activity mapping being used in creating electronic components to replace damaged parts of the system.

The use of mind-mapping had other possibilities as well. Similar research in controlling the behaviour of humans and animals was pursued by Dr José Delgado at Yale University, one of the leading research institutions in the United States. Actual testing of certain systems proved that "movements, sensations, emotions, desires, ideas, and a variety of psychological phenomena may be induced, inhibited, or modified by electrical stimulation of specific areas of the brain".50 By 1985, Dr Delgado was able to create these effects using only a radio signal sent to the brain remotely, using energy concentrations of less than 1/50th of what the Earth naturally produces. This discovery implied that frequency, waveform and pulse rate (modulation) were the important factors rather than the amount of energy being used. In considering this, it makes sense because the human body does not require high electromagnetic power

concentration to regulate its normal functioning. The key was in finding the "tuning" mechanisms for locating the right "receiving station" in the brain.

By 1993, publicly released information was being discussed as a result of information openly flowing out of Russia. Meetings were held to assess the threat: the "main purpose of the March meetings was described in the Psychotechnologies memo as to 'determine whether psycho-correction technologies represent a present or future threat to US national security in situations where inaudible commands might be used to alter behavior'".⁵¹ The threat assessment was likely to begin to condition Americans for the public acknowledgement of one of the government's long-held secrets: that the human mind and body can be controlled remotely, without a trace of evidence being left behind.

In another quote, one of the leading researchers in this area, Dr Igor Smirnov, began to announce his findings. "But psychological warfare experts on all sides still dream that they will one day control the enemy's mind. And in a tiny, dungeon-like lab in the basement of Moscow's ominously named Institute of Psycho-Correction, Smirnov and other Russian psychiatrists are already working on schizophrenics, drug addicts and cancer patients."⁵² The results of this research have been investigated and demonstrated to members of the intelligence community in the United States, and have even been demonstrated by Dr Smirnov in an interview for the Canadian television documentary Undercurrents.

This issue is also an interesting one, as can be seen in this 1999 article excerpt. "Fantasies are thought processes involving internal monologues and imaginative sequences which can motivate healthy people to constructive behaviour; likewise, they can inspire unbalanced individuals to destructive or dangerous behaviour. One conclusion from that

research was that fantasy played a major role among violent criminals. Researchers learned that criminals often daydreamed their fantasies, and then practiced elements of those fantasies before committing their crime. FBI agents determined that violent criminals often exhibit telltale signs as children and as adults. Hence, disturbed employees or students may demonstrate signs of violent fantasies to close observers. Troubled individuals may be obsessively interested in music with violent lyrics, or may have a drug or alcohol problem. When these signs reveal themselves, they should be reported to a threat management team, which can then neutralize the threat, either by therapy, if rehabilitation is possible, or by firing the employee. Workplace and school violence is usually preceded by warning signs."53 The ability to determine a "predisposition" for a behaviour does not mean that a person will make the "choice" to act on the feelings and internal thoughts. Every person on the planet can remember times when his thoughts were dangerous, immoral or otherwise unacceptable, falling below the standards set by societal and cultural "norms". Yet, we can have these thoughts in the privacy of our own mind. The trend in the application of mind control technology now would make our most private internal thoughts, as we wrestle with the temptations and choices of everyday life, subject to scrutiny by government and employers. Who will define the rules for psycho-correction? Who will decide what is ethical and right in this area as it develops over the next decade?

Control of the Mind and Body

The predominant brain wave frequencies indicate the kind of activity taking place in the brain. There are four basic groups of brain wave frequencies which are associated with most mental activity. The first group, beta waves (13-35 Hertz or pulses per

second), is associated with normal activity. The high end of this range is associated with stress or agitated states which can impair thinking and reasoning skills. The second group, alpha waves (8-12 Hertz), can indicate relaxation. Alpha frequencies are ideal for learning and focused mental functioning. The third group, theta waves (4-7 Hertz), indicates mental imagery, access to memories and internal mental focus. This state is often associated with young children, behavioural modification and sleep/dream states. The last group, ultra-slow delta waves (0.5-3 Hertz), is found when a person is in deep sleep. The general rule is that the brain's predominant wave frequency will be lowest in terms of pulses per second when a person is relaxed, and highest when a person is most alert or agitated.⁵⁴

External stimulation of the brain by electromagnetic means can cause the brain to be entrained or locked into phase with an external signal generator.⁵⁵ Predominant brain waves can be driven or pushed into new frequency patterns by external stimulation. In other words, the external signal driver or impulse generator entrains the brain, overriding the normal frequencies and causing changes in the brain waves, which then cause changes in brain chemistry, which then cause changes in brain outputs in the form of thoughts, emotions or physical condition. As you are driven, so you arrive. Brain manipulation can be either beneficial or detrimental to the individual being impacted, depending on the level of knowledge or the intentions of the person controlling the technology.

In combination with specific wave-forms, the various frequencies trigger precise chemical responses in the brain. The release of these neurochemicals causes specific reactions in the brain which result in feelings of fear, lust, depression, love, etc. All of these, and the full

range of emotional/intellectual responses, are caused by very specific combinations of these brain chemicals which are released by frequency-specific electrical impulses. "Precise mixtures of these brain juices can produce extraordinarily specific mental states, such as fear of the dark, or intense concentration."56

The work in this area is advancing at a very rapid rate, with new discoveries being made regularly. Unlocking the knowledge of these specific frequencies will yield significant breakthroughs in understanding human health. Radiofrequency radiation, acting as a carrier for extremely low frequencies (ELF), can be used to entrain brain waves wirelessly.

The control of mind and body by using various forms of electromagnetic energy including radio signals, light pulsations, sound and other methods has resulted in several inventions and innovations. The positive health effects and uses have been pursued by private researchers around the world. In 1973, an "...apparatus for the treatment of neuropsychic and somatic disorders wherein light, sound, VHF electromagnetic field and heat sources, respectively, are simultaneously applied by means of a control unit to the patient's central nervous system with a predetermined repetition rate. The light radiation and sound radiation sources are made so as to exert an adequate and monotonous influence of the light and sound radiation on the patient's visual analyzers and auditory analyzers, respectively."57 This results in the brain following the external stimulating source in triggering brain pattern changes which affect the brain immediately and directly.

A simple invention patented in 1977 "...provides a device for improving upon the aforesaid application [see patent for full text] in assisting the induction of natural sleep. As stated above, this invention is concerned specifically with an

improvement that will permit the creation of several waveforms such that an analgesic noise device can approximate soothing sounds of nature, i.e., waves, rain, wind."⁵⁸ These kinds of devices are available everywhere and are noted for their calming effects in helping people relax and sleep. In 1980, another patent was issued which disclosed "...a method and apparatus for producing a noise-like signal for inducing a hypnotic or anesthetic effect in a human being. The invention also has application in crowd control and consciousness level training (biofeedback). The invention may also be used in creating special musical effects."⁵⁹ This device would have a profound effect in controlling individuals to a point otherwise only achievable through the application of hypnotherapy or drugs. A couple of years later, another device was engineered to create these types of effects, again using very subtle energy: "Brain wave patterns associated with relaxed and meditative states in a subject are gradually induced without deleterious chemical or neurological side effects."⁶⁰

Various systems were perfected and patents issued for controlling brain activity.^{61, 62, 63, 64, 65, 66, 67, 68} These inventions generated a whole array of breakthroughs for controlling a person's emotional state, concentration and pain levels and creating other effects as well. In 1990, the results of a study strongly indicated that "...specific types of subjective experiences can be enhanced when extremely low frequency magnetic fields of less than 1 milligauss are generated through the brain at the level of the temporal lobes. Vestibular feelings (vibrations, floating), depersonalization (feeling detached, sense of a presence) and imaginings (vivid images from childhood) were more frequent within the field exposed groups than the sham field exposed group."⁶⁹

In a 1996 "new age" invention, quartz crystals are used to create stress relief by slowing brain activity. "Physiological stress in a human subject is treated by generating a weak electromagnetic field about a quartz crystal. The crystal is stimulated by applying electrical pulses of pulse widths between 0.1 and 50 microseconds each at a pulse repetition rate of between 0.5k and 10k [500 and 10,000] pulses per second to a conductor positioned adjacent to the quartz crystal thereby generating a weak magnetic field. A subject is positioned within the weak magnetic field for a period of time sufficient to reduce stress."⁷⁰ It is interesting that "New Age" thinkers have played on "crystal magic" as a way to get "in tune" with oneself and relax, and here is a quartz crystal being included as a component of this invention. Again, the crossovers between fiction and science continue to appear.

Consciousness training is also a big theme in cults, religious organisations and others pursuing the "New Age". Science has now gained a greater understanding of how the mind and brain work, so that what used to take years or even decades to achieve can now be mastered in weeks, days or even minutes. For instance, in 1996 a method and apparatus for the use in achieving alpha and theta brainwave states and effecting positive emotional states in humans was developed.⁷¹ Three years before, a patent was issued for a device which could create desired consciousness states: "...in the training of an individual to replicate such states of consciousness without further audio stimulation; and in the transferring of such states from one human being to another through the imposition of one person's EEG, superimposed on desired stereo signals, on another individual, by inducement of a binaural beat phenomenon."⁷²

Thought transference?

This is interesting in that it speaks to the ideas alluded to earlier by the military in changing the memory of a person by imposing computer-manipulated signals which would integrate with the normal memory of a person. The possibility for abuse is obvious, and the opportunity for personal advancement is great. Imagine gaining education by the transfer of data directly into the human brain by these new methods rather than by the standard methods of learning.

A serious consideration in developing these types of memory transfer systems is that they bypass normal intellectual filters: information is deposited into the brain as fact, without question or careful consideration. What happens when the new information conflicts with existing information? Would it be possible to include hidden information meant to unduly influence things like religious beliefs, politics or consumption of goods and services?

The possibilities are immense and the ethical and moral questions surrounding these matters are equally large. We can no longer avoid the debate. In fact, the debate is lagging far behind the scientific advances.

In the interim, there are some simple things we could all do to enhance our own, or our children's, learning capacity by applying simple and available knowledge. For instance, "researchers at the Center for the Neurobiology of Learning and Memory at University of California, Irvine, have determined that 10 minutes of listening to a Mozart piano sonata raised the measurable IQ of college students by up to nine points".⁷³ This is a simple thing of great use to anyone seeking self-improvement.

Weapons of the Mind

A 1984 paper titled "The Electromagnetic Spectrum in Low-Intensity Conflict" said much about the military's interest in EMR:

"The results of many studies that have been published in the last few years indicate that specific biological effects can be achieved by controlling the various parameters of the electromagnetic (EM) field. A few of the more important EM factors that can be manipulated are frequency, wave shape, rate of pulse onset, pulse duration, pulse amplitude, repetition rate, secondary modulation, and symmetry and asymmetry of the pulse. Many of the clinical effects of electromagnetic radiation were first noticed using direct current applied directly to the skin. Later the same effects were obtained by applying external fields. Electromagnetic radiation has been reported in the literature to induce or enhance the following effects.

1. Stimulation of bone regeneration [in fractures]
2. Healing of normal fractures
3. Treatment of congenital pseudarthrosis
4. Healing of wounds
5. Electroanesthesia
6. Electroconvulsive therapy
7. Behavior modification in animals
8. Altered electroencephalograms in animals and humans
9. Altered brain morphology in animals
10. Effects of acupuncture
11. Treatment of drug addiction
12. Electrostimulation for relief of pain
13. Altered firing of neuronal cells

"These are but a few of the many biological effects and uses that have been reported over the past decade. They are not exhaustive and do not include many of the effects reported in the Soviet and East European literature.

"As with most human endeavors, these applications of electromagnetic radiation have the potential for being a double-edged sword. They can produce significant benefits, yet at the same time can be exploited and used in a controlled manner for

military or covert applications. This paper focuses on the potential uses of electromagnetic radiation in future low-intensity conflicts.

"Potential Military Applications of EMR

"The exploitation of this technology for military uses is still in its infancy and only recently has been recognized by the United States as a feasible option. A 1982 Air Force review of biotechnology had this to say.

'Currently available data allow the projection that specially generated radio frequency radiation (RFR) fields may pose powerful and revolutionary military threats. Electroshock therapy indicates the ability of induced electric current to completely interrupt mental functioning for short periods of time, to obtain cognition for longer periods and to restructure emotional response over prolonged intervals.

'Experience with electroshock therapy, RFR experiments and the increasing understanding of the brain as an electrically mediated organ suggested the serious probability that impressed electromagnetic fields can be disruptive to purposeful behavior and may be capable of directing and or interrogating such behavior. Further, the passage of approximately 100 milliamperes through the myocardium can lead to cardiac standstill and death, again pointing to a speed-of-light weapons effect.

'A rapidly scanning RFR system could provide an effective stun or kill capability over a large area. System effectiveness will be a function of wave form, field intensity, pulse widths, repetition frequency, and carrier frequency. The system can be developed using tissue and whole animal experimental studies, coupled with mechanisms and waveform effects research.

'Using relatively low-level RFR it may be possible to sensitize large military groups to extremely dispersed amounts of biological or chemical agents

to which the unirradiated population would be immune.

'The potential applications of artificial electromagnetic fields are wide ranging and can be used in many military or quasi-military situations.

'Some of these potential uses include dealing with terrorist groups, crowd control, controlling breeches [sic] of security at military installations, and antipersonnel techniques in tactical warfare... One last area where electromagnetic radiation may prove to be of some value is in enhancing abilities of individuals for anomalous phenomena.'"74

Quite the papers for the 1980s. Stimulating anomalous phenomena was another interesting point revealed in the Air Force review. What could this mean? In one press report in November 1995, the interest of the CIA was disclosed when it was announced that for "...20 years, the United States has secretly used psychics in attempts to help drug enforcement agencies track down Libyan leader Moammar Gadhafi and find plutonium in North Korea, the CIA and others confirm. The ESP spying operations—code named 'Stargate'—were unreliable, but three psychics continued to work out of Ft Meade, at least into July, researchers who evaluated the program for the CIA said..."75

It is also worth pointing out that this report coincided with the public disclosure by military personnel of this project. The story was revealed in David Morehouse's book *Psychic Warrior*.76

Col. John Alexander, working out of Los Alamos and a major proponent of this area of research, was quoted as saying: "...there are weapons systems that operate on the power of the mind and whose lethal capacity has already been demonstrated... The psychotronic weapon would be silent, difficult to detect, and would require only a human operator as a power source."77

According to a paper on non-lethal weapons: "An RF weapon currently under development is the high powered, very low frequency (VLF) modulator. Working in the 20-35 kHz spectrum, the frequency emits from a 1-2 meter antenna dish to form into a type of acoustic bullet. The weapon is especially convenient because the power level is easily adjustable. At its low setting, the acoustic bullet causes physical discomfort—enough to deter most approaching threats. Incrementally increasing the power nets an effect of nausea, vomiting and abdominal pains. The highest settings can cause a person's bones to literally explode internally. Aimed at the head, the resonating skull bones have caused people to hear 'voices'." The weapon was researched by the Russian military more extensively than by the US. Indeed, "...the Russians actually offered the use of such a weapon to the FBI in the Branch Davidian standoff to make them think that 'God' was talking to them. Concerned with the unpredictability of what the voices might actually say to the followers, the FBI declined the offer. Another RF weapon that was ready for use back in 1978 was developed under the guise of Operation PIQUE. Developed by the CIA, the plan was to bounce high powered radio signals off the ionosphere to affect the mental functions of people in selected areas, including Eastern European nuclear installations."78

The use of the ionosphere in the CIA's experiments reminds one of the possibilities now available with systems such as HAARP, which was developed 15 years later. What is clear in all of this is that these systems have been developed and hidden from public view. The practice continues to this day.

"The next area of non-lethal weapons is primarily used against machinery...these devices can either cause the machinery to stop functioning or to render it vulnerable to further, more lethal attacks. In addition to this effect, man has become

very dependent upon the use of machines and is often rendered helpless in a situation when they become dysfunctional. Therefore, it is only appropriate that they are covered here. The primary anti-machinery arsenal includes the microwave weapon, the non-nuclear electromagnetic pulse, and the laser weapon.

"US Special Operations Command has in its arsenal the portable microwave weapon. The capability of such a weapon is varied in that it can not only disrupt enemy communications, but can also superheat internal organs. Of course, directing this type of weapon towards personnel eliminates it from the non-lethal classification. Developed in the Los Alamos National Laboratory, the weapon forms its signal similar to the RF weapons discussed above in that it directs the energy into a high-powered pulse and destroys transistors and other electrical equipment... On an even smaller scale, a portable EMP weapon could be carried by ground forces to destroy the electrical components in an armored vehicle or tank. This capability is being developed with police forces to emit a pulse that would stop a car almost immediately."⁷⁹

These systems offer both promises and risks as we move into the new century. What will be the public reaction to these systems? We suggest that the reaction will cause a significant change in the uses and further developments of these technologies. Additionally, we suspect that monitoring systems would be developed which would allow for the detection of these technologies in order to control abuse.

Mind Control Victims

Sometimes referred to as "wavies" or "beamers", these individuals are usually dismissed when asserting that they are the victims of mind control weapons testing. In fact: "University of South Florida researchers have published a study showing

that fears of the Internet are replacing the CIA and radio waves as a frequent delusion in psychiatric patients. In every case of Internet delusion documented by the researchers, the patient actually had little experience with computers."80

The problem is that it is difficult if not impossible to sort out which people might be victims and which are delusional. Attempts to determine the reality of the complaints are often the butt of jokes and fear. For example, the University of Albany has "...shut down the research of a psychology professor probing the 'X-Files' world of government surveillance and mind control. At conferences, in papers and research over two semesters, Professor Kathryn Kelley explored the claims of those who say they were surgically implanted with communications devices to read their thoughts."81

Since the release of our first book, *Angels Don't Play This HAARP: Advances in Tesla Technology*,82 we have heard from hundreds of people making such claims. We cannot sort out what might be real experimentation from that which resides only in the minds of these people. We believe that the claims should be taken seriously and that people should have some place to go in order to find the truth or gain the medical treatments they otherwise deserve. The history of the United States is littered with examples of people being exploited by scientists working under the cover of darkness provided by "black budgets". Could these reports have a factual basis? We believe that some do.

Government control of the mind in order to impose its will on people is best summarised on the wall of the Franklin D. Roosevelt Memorial with an inscription that reads: "They [who] seek to establish systems of government based on the regimentation of all human beings by a handful of individual rulers...call this a new order. It is not new and it is not order."83 8

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