

Remote Mind Control Technology

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There had been an ongoing controversy over health effects of electromagnetic fields (EMF) for years (e.g., extremely low frequency radiation and the Navy's Project Seafarer; emissions of high power lines and video display terminals; radar and other military and industrial sources of radio frequencies and microwaves, such as plastic sealers and molders.) Less is known of Department of Defense (DOD) and Central Intelligence Agency (CIA) interest in anti-personnel applications of the invisible energies. The ability of certain parameters of EMF to cause health effects, including neurological and behavioral disturbances, has been part of the military and CIA arsenal for years.

Capabilities of the energies to cause predictable and exploitable effects or damages can be gleaned from discussion of health effects from environmental exposures. Interestingly, some scientists funded by the DOD or CIA to research and develop invisible electromagnetic weapons have voiced strong concern (perhaps even superior knowledge or compensatory to guilt) over potentially serious consequences of environmental exposures.

Eldon Byrd who worked for Naval Surface Weapons, Office of Non-Lethal Weapons, was commissioned in 1981 to develop electromagnetic devices for purposes including "riot control," clandestine operations and hostage removal. In the context of a controversy over reproductive hazards to Video Display Terminal (VDT) operators, he wrote of alterations in brain function of animals exposed to low intensity fields. Offspring of exposed animals "exhibited a drastic degradation of intelligence later in life... couldn't learn easy tasks... indicating a very definite and irreversible damage to the central nervous system of the fetus." With VDT operators exposed to weak fields, there have been clusters of miscarriages and birth defects (with evidence of central nervous system damage to the fetus). Byrd also wrote of experiments where behavior of animals was controlled by exposure to weak electromagnetic fields. "At a certain frequency and power intensity, they could make the animal purr, lay down and roll over."

Notorious Jose Delgado, advocate of a psycho-civilized society through mind control, no longer implants electrodes in the brains of mental patients and prisoners; he now induces

profound behavioral changes (hyper-activity, passivity, etc.) by exposing animals to precisely tuned EMFs. He has also written of genetic damage produced by weak EMF fields, similar to those emitted by VDTs. Invariably, brain tissue damage and skeletal deformation was observed in new born chicks that had been exposed. He was concerned enough to check emissions from the appliances in his kitchen.

Ross Adey induces calcium efflux in brain tissue with low power level fields (a basis for the CIA and military's "confusion weaponry") and has done behavioral experiments with radar modulated at electroencephalogram (EEG) rhythms. He is understandably concerned about environmental exposures within 1 to 30 Hz (cycles per second), either as a low frequency or an amplitude modulation on a microwave or radio frequency, as these can physiologically interact with the brain even at very low power densities.

Microwaves

Microwave health effects is a juncture where Department of Defense and environmental concerns collide and part ways.

Security concerns, according to Sam Koslov of Defense Advanced Research Projects Agency (DARPA), first prompted U.S. study of health effects of low intensity (or non-thermal) microwaves. At times, up to 70-80% of the research was funded by the military. From 1965 to 1970, a study dubbed Project Pandora was undertaken to determine the health and psychological effects of low intensity microwaves, the so-called "Moscow signal" registered at the American Embassy in Moscow. Initially, there was confusion over whether the signal was an attempt to activate bugging devices or for some other purpose. There was suspicion that the microwave irradiation was being used as a mind control system. CIA agents asked scientists involved in microwave research whether microwaves beamed at humans from a distance could affect the brain and alter behavior. Dr. Milton Zarat who undertook to analyze Soviet literature on microwaves for the CIA, wrote: "For non-thermal irradiations, they believe that the electromagnetic field induced by the microwave environment affects the cell membrane, and this results in an increase of excitability or an increase in the level of excitation of nerve cells. With repeated or continued exposure, the increased excitability leads to a state of exhaustion of the cells of the cerebral cortex."

Employees first learned of the irradiation ten years after Project Pandora began. Before that, information had been parcelled out on a strict "need to know" basis, which excluded most employees at the compound. Due to secrecy, and probably

reports like Dr. Zaret's, Jack Anderson speculated that the CIA was trying to cover up a Soviet effort at behavior modification through irradiation of the U.S. diplomats, and that the cover up was created to protect the CIA's own mind control secrets.

Finally, an unusually large number of illnesses were reported among the residents of the compound. U.S. Ambassador Walter Stoessel developed a rare blood disease similar to leukemia; he was suffering headaches and bleeding from the eyes. A source at the State Department informally admitted that excessive radiation had been leaking from his telephone; an American high frequency radio transmitter on the roof of the building had, when operating, induced high frequency signals well above the U.S. safety standard through the phones in the political section, as well as in lines to Stoessel's office. No doubt, National Security Agency or CIA electronic devices also contributed to the electromagnetic environment at the embassy, although values for these were never released, as they are secret. Stoessel was reported as telling his staff that the microwaves could cause leukemia, skin cancer, cataracts and various forms of emotional illness. White blood cell counts were estimated to be as high as 40% above normal in one third of the staff, and serious chromosome damage was uncovered.

The Soviets began research on biological effects of microwaves in 1953. A special laboratory was set up at the Institute of Hygiene and Occupational Diseases, Academy of Medical Sciences. Other labs were set up in the U.S.S.R. and in Eastern Europe that study both effects of microwaves and low frequency electromagnetic radiation.

Years ago, in the halls of science, complaints could be heard that Soviet experiments regarding bio-effects couldn't be duplicated due to insufficient details in their scientific literature, although, according to one DOD official, 75% of the U.S. papers on the subject carried insufficient parameters for duplication. Scientists even questioned, with McCarthy like sentiments, whether the Soviets were attempting to frighten or disinform with false scientific reporting of bio-effects. It was unthinkable, according to cruder scientific theory, that non-thermal levels of microwaves could cause harm. Impetus for a study of such effects came not from concern for the public, but rather in the military and intelligence community's suspicion of the Soviets, and their equally strong interest in developing exploitable anti-personnel effects - an interest that continues unabated today.

The CIA and DOD "security" concerns metamorphosed into research and development of invisible weapons capable of impacting on health and psychological processes. In fact, due to

the finding of startling effects, DARPA's security became even tighter, and a new code name - "Bizarre" - was assigned to the project.

Military Disinformation

Scientist Allen Frey of Randomline, Inc. was always more interested in low intensity microwave hazards: thermal effects were known. During Project Pandora, the Navy funded such projects of his, as how to use low average power intensities, to: induce heart seizures; create leaks in the blood brain barrier, which would allow neurotoxins in the blood to cross and cause neurological damage or behavioral disorders; and how to produce auditory hallucinations or microwave hearing, during which the person can hear tones that seem to be coming from within the head or from directly behind it.

In 1976, the Defense Intelligence Agency (DIA) released a report in which they attributed the results of Dr. Frey's studies to the Soviets. According to Dr. Frey, who acknowledges that his work was misattributed, he had thought up the projects himself. The DIA, but not the CIA, is allowed to use "mirror imaging" and "net assessment" in their reports, ie., respectively, the attribution of one's own motives and weapons capabilities to "the other side", in this case, the Soviets. It follows, that there is nothing to prevent them from releasing a report prepared in this manner, and thus muddy the water of decision making, pervert public opinion, stoke up congressional funding or enlist the support of naive scientists to counter "the threat". There was strong concern over CIA disinformation abroad, leaking back to the home front, through the American press, but apparently the DIA, at least on some issues, can dish it up with impunity.

Dr. R.O. Becker, twice nominated for the Nobel prize for his health work in bio-electromagnetics, was more explicit in his concern over illicit government activity. He wrote of "obvious applications in covert operations designed to drive a target crazy with "voices." The 1976 DIA report also credits the Soviets with other capabilities, stating, "Sounds and possibly even words which appear to be originating intracranially can be induced by signal modulations at very low power densities." Dr. Sharp, a Pandora researcher at Walter Reed Army Institute of Research, some of whose work was so secret that he couldn't tell his boss, conducted an experiment in which the human brain has received a message carried to it by microwave transmission. Sharp was able to recognize spoken words that were modulated on a microwave carrier frequency by an "audiogram", an analog of the words' sound vibrations, and carried into his head in a chamber where he sat.

Dr. James Lin of Wayne State University has written a book entitled, *Microwave Auditory Effects and Applications*. It explores the possible mechanisms for the phenomenon, and discusses possibilities for the deaf, as persons with certain types of hearing loss can still hear pulsed microwaves (as tones or clicks and buzzes, if words aren't modulated on). Lin mentions the Sharp experiment and comments, "The capability of communicating directly with humans by pulsed microwaves is obviously not limited to the field of therapeutic medicine."

What is frightening is that words, transmitted via low density microwaves or radio frequencies, or by other covert methods, might be used to create influence. For instance, according to a 1984 U.S. House of Representatives report, a large number of stores throughout the country use high frequency transmitted words (above the range of human hearing) to discourage shoplifting. Stealing is reported to be reduced by as much as 80% in some cases. Surely, the CIA and military haven't overlooked such useful technology.

Dr. Frey also did experiments on reduction of aggression. Rats who were accustomed to fighting viciously when their tails were pinched, accepted the pinching with relative passivity when irradiated with pulsed microwaves in the ultra high frequency range (UHF) at a power density of less than 1,000 microwatts/cm². He has also done low intensity microwave experiments degrading motor coordination and balance. When asked about weapons applications of his work, he answered by referring to himself as "just a biological theorist", and his work for the Navy, "basic medical research."

Lies Before Congress

In 1976, George H. Heilmeier, director of Defense Advances Research Projects Agency (DARPA) responded to a mailgram to President Ford from Don Johnson of Oakland, paraphrasing Johnson's concern, and assuring him that the DARPA sponsored Army/Navy Pandora experiments were "never directed at the use of microwaves as a surveillance tool, nor in a weapons concept." Don Johnson lingered in the memory of one DOD official who sponsored microwave research in the 1970s. Johnson was enigmatically described as "brilliant... schizophrenic... he knew too much... a former mental patient... buildings where work was done." (Scientists who have disagreed with the DOD on health effects of microwaves and on the U.S. exposure standard, have received scant more respect and have had their funding cut.)

The next year, Heilmeier elaborated in a written response to an inquiry before Congress. "...This agency [DARPA] is not aware of any research projects, classified or unclassified, conducted

under the auspices of the Defense Department, now ongoing, or in the past, which would have probed possibilities of utilizing microwave radiation in a form of what is popularly known as 'mind control.' We do not foresee the development, by DARPA of weapons using microwaves and actively being directed toward altering nervous system function or behavior. Neither are we aware of any of our own forces... developing such weapons..."

Lies Exposed

Finally, memoranda were released that rendered the goals of Pandora transparent. Richard Cesaro, initiator of Pandora and director of DARPA's Advanced Sensor program, justified the project in that "little or no work has been done in investigation of the subtle behavioral changes which may be evolved by a low-level electromagnetic field." Researchers had long ago established that direct stimulus of the brain could alter behavior. The question raised by radio frequencies - microwaves or radio frequencies of the UHF or VHF band - was whether the electromagnetic could have a similar effect at very low levels. Pandora's initial goal: to discover whether a carefully constructed microwave signal could control the mind. In the context of long term, low-level effects: Cesaro felt that central nervous system effects could be important, and urged their study "for potential weapons applications." After testing a low-level modulated microwave signal on a chimpanzee, and within approximately a week causing stark performance decrements and behavioral disorganization. Cesaro wrote, "the potential of exerting a degree of control on human behavior by low-level microwaves seems to exist." On the basis of the primate study, extensive discussions took place and plans were made to extend the studies to humans.

According to a former DOD security analyst, one such microwave experiment with human subjects took place at Lorton Prison in the early 1970s. He said that such research (in a weapons context) has occurred on behavioral effects of microwaves since 1976. He also asked, "Why are you so concerned about then? What about now? They can call anyone a terrorist. Who are they using it on now?"

Behavioral Effects

In June, 1970, a government think tank, Rand Corporation, published a report by R.J. MacGregor, entitled "A Brief Survey of Literature Relating to Influence of Low Intensity Microwaves on Nervous Function." After noting that the U.S. microwave guideline in effect in 1970 for the public, 10,000 microwatts/² (now the industrial and military "guideline"), is proscribed from consideration of the rate that thermal effects are dissipated,

the author, a specialist in modeling neural networks, states that scientific studies have consistently shown that humans exhibit behavioral disturbances when subjected to non-thermal levels of microwaves, well below this level. The symptoms that MacGregor lists for those humans exposed more or less regularly at work or in the living environment are insomnia, irritability, loss of memory, fatigue, headache, tremor, hallucination, autonomic disorders and disturbed sensory functioning. He reports that swelling and distention of nerve cells have been produced at intensities as low as 1,000 microwatts/cm² (the current U.S. guideline for the public).

In a companion Rand paper, June, 1970, entitled "A Direct Mechanism for the Direct Influence of Microwave Radiation on Neuroelectric Function," MacGregor sets forth the idea that the electrical component of microwave radiation induces transmembrane potentials in nerve cells and thereby disturbs nervous function and behavior.

Microwaves penetrate and are absorbed more deeply so that they can produce a direct effect on the central nervous system. With smaller wave lengths the principal absorption occurs near the body surface and causes peripheral or "lower" nervous system effects.

Dr. Milton Zaret who analysed neurological effects for the CIA during Project Pandora (he is now one of the few doctors willing to take the government on by testifying on behalf of plaintiffs filing claims for microwave health damage), wrote that, "receptors of the brain are susceptible and react to extremely low intensities of microwave irradiation if this is delivered in accordance with appropriate "coding." Coding is reported to be influenced by the character of the signal so as to be a function, for example, of the shape and amplitude of the pulse or waveform.

Remotely Reinforcing Specific Brain Rhythms

Dr. Ross Adey, formerly of the Brain Research Center at University of Southern California, Los Angeles, now at Loma Linda University Medical School, Loma Linda, California, was among the first of the Pandora researchers. His work is more precise in inducing specific behavior, rather than merely causing disorganization or decrements in performance -that is, apart from his studies on inducing calcium efflux in brain tissue, which causes interference with the functioning of the brain and is one basis of "confusion weaponry."

More specifically, Adey's thesis is that if the electroencephalogram (EEG) has informational significance, one

can induce behavioral changes if one imposes environmental fields that look like EEG. During Adey's career, he has correlated a wide variety of behavioral states with EEG, including emotional states (e.g., stress in hostile questioning), increments of decision making and conditioning, correct versus incorrect performance, etc., and he has imposed electromagnetic fields that look like EEG, which has resulted in altered EEG and behavior.

In published accounts of Adey's work, he has shown that it is possible to apply low biologic frequencies by using a radio frequency carrier modulated at specific brain frequencies. He demonstrated that if the biological modulation on the carrier frequency is close to frequencies in the natural EEG of the subject, it will reinforce or increase the number of manifestations of the imposed rhythms, and modulate behavior.

The conditioning paradigm: animals were trained through aversion to produce specific brain wave rhythms; animals trained in a field with the same rhythm amplitude modulated on it, differed significantly from control animals in both accuracy and resistance to extinction (at least 50 days versus 10 in the controls). When the fields were used on untrained animals, occurrence of the applied rhythm increased in the animals' EEG.

Dr. Adey is an accomplished scientist, which leads one to believe the significance of this experiment goes beyond mere reinforcement of the animal's brain waves. Did the rhythms that he chose to apply have special significance with relation to information processing or conditioning? The 4.5 theta rhythm that he applied was the natural reoccurring frequency that he had measured in the hippocampus during a phase of avoidance learning. The hippocampus, as Adey wrote in an earlier paper, "...involves neural processes connected with consolidation of memory traces. It relates closely to the need for focusing attention, and the degree to which recapitulation of past experience is imposed." One might add, to ensure survival.

Does it follow that an EEG modulated carrier frequency can be used to enhance human avoidance learning? You bet, provided the same careful procedures are followed with humans as were with animals, the same result would accrue. Recall again the goals of Pandora - to discover whether a carefully constructed electromagnetic signal could direct the mind.

The obvious question becomes, how many and with how much accuracy can behavioral states or "frames of mind" be intentionally imposed, that is, apart from the certain technological capability to promote disorganization and degradation of perception and performance through use of the fields.

In fact, many components of learning or conditioning including affect (i.e., "feeling" or emotional states) can be imposed through use of the fields from a distance. E.g., behavioral arousal, orienting reflex, subliminal stress (alarm reaction without realization of the contextual significance), so-called levels of consciousness, inhibition of cerebral functions, which would render one more susceptible to suggestion or influence, and so on. All components necessary to produce behavioral conditioning, including ways to provide contextual significance, can be applied from a distance (i.e., without direct brain contact, as was necessary in older behavior modification experiments.)

Applications

The end of Project Pandora may have signified the end of research into the cause of effects of the varying frequencies registered at the American embassy in Moscow - some known to be due to CIA and National Security Agency equipment, but interest in microwave and biological frequency weapons did not wane. Indeed, there are indications of applications. As we have seen, research that began in response to a security concern, transformed almost overnight into a search for weapons applications, while cloaked in disinformation about the Soviets. What types of weapons?

There Are Three Possibilities:

(1) that microwaves, perhaps modulated with low biological frequencies, are used from a distance to cause performance decrements and disorganization by interfering with neuro-electric function; or by causing central nervous system effects, subjective feelings of ill health, or health syndrome associated with periodic exposures at intensities below 10,000 microwatts/cm²;

(2) that microwaves are used to create organ specific effects, e.g., tissues with less blood circulation, like the gall bladder, lens of the eye, etc., can compensate less to increased heating; heart disfunctions can be caused; lesions or necrosis of internal tissues can be induced without a subject necessarily feeling heat, and symptoms might manifest later, at certain frequencies, slight heating or "hot spots" can be created at the center of the head; there is an ongoing Navy contract to find parameters to disrupt human metabolic functions; or

(3) that they are used in an interdisciplinary approach to remote conditioning by creating information processing effects, as Dr. Adey's work shows, or to induce "feeling" or "emotional"

elements of cognition, such as excitatory reactions, subliminal stress, behavioral arousal, enhanced suggestibility by inhibition of higher functions, or various other EEG or behavioral effects.

There are strong indications that microwaves have been used to cause the decrements. There is no question but that the U.S. military and the CIA know the behavioral or psycho-active significance of applied biological rhythms and other frequencies, as this was part of the thrust of their work during Pandora. Inducing emotion or feelings through use of electromagnetic fields, and then synchronizing the feelings with words (symbolic of ideas) would be an effective way to induce preferences or attitude change, because it would mirror natural thought processes. The question seems less whether conditioning through use of covert technology is possible, than whether there has been a policy choice to use it. If the results of their research are used as part of a system that can condition behavioral responses from a distance, it is a secret that they hold close like a baby.

Richard Helms wrote of such a system in the mid-1960s while he was CIA Plans Director. He spoke of "sophisticated approaches to the 'coding' of information for transmittal to population targets in the 'battle for the minds of men'..." and of "an approach integrating biological, social and physical-mathematical research in attempts... to control behavior." He found particularly notable, "use of modern information theory, automata theory, and feedback concepts... for a technology for controlling behavior... using information inputs as causative agents." Due to Project Pandora, it is now known that applied biological (and other) frequencies can also be used as direct "information inputs" (e.g., of feeling or emotion) and to reinforce brain rhythms associated with conditioning and information processing. One way to get such a signal into a human may be through use of a high frequency carrier frequency. Results of research into information processing, unconscious processes, decision making, memory processes and evoked brain potentials would likely be exploited or integrated in an interdisciplinary system.

Covert technological influence is not so foreign to the American way of life as one may think. It was reported in a 1984 U.S. House of Representatives hearing that high frequency audio transmissions are applied, for instance, in some department stores to prevent theft (one East Coast department store chain was reported to have saved \$600,000 over a nine-month period), and in some grocery stores with the result that employee induced cash shortages significantly decreased and employees are better mannered. In other words, as Helms wrote of, verbal messages are delivered at frequencies above human hearing. Technology for commercial applications is relatively sophisticated (one studio uses a "layered" approach and 31 channels in preparing tapes;

some employ a "dual coding" approach, integrating scientific knowledge of information processing modes of the two brain hemispheres, and others use techniques where a consumer is spoken to as a three year old child.) There is no U.S. law specifically regulating these types of transmission (over radio and TV a Federal Communication Commission "catch all" provision might apply). If industry uses undetectable audio transmissions to meet security concerns, it seems that the military and CIA would exploit the same technology and would have developed much more sophisticated technology for applications. The public's conception of "subliminals" is naive compared to capabilities.

It seems reasonable to conclude that to the extent that such an approach exists to manipulate behavior, "defensive" applications would consist of applying it wherever a potential threat exists or to counter a threat. For instance, Central America is an area where those in officialdom keenly feel the "threat of Soviet domination." If there is technology available that could conceivably influence Central Americans toward the Soviets, then the U.S. would use the same kind of technology to "even the score." The same is true within the U.S.; if covert technological influence might be had against Americans, the same feared technology would be applied to counter the threat. Special security risks might include peace groups, whom are felt to be threatened by Soviet influence (a big security concern in Western Europe and in the U.S.), progressives, or any group or individual felt to pose a challenge to U.S. goals subsumed under the rubric of "national security interest."

Given the nature and dubious goals of lumbering military inertia, and circuitous CIA "mirror logic", leads one to the conclusion that "defending" against possible or actual attempts to manipulate behavior means moving to the offensive, and perhaps, having the "edge" with applications. Possible or actual threats, according to tenets of military and intelligence craft, means "the other side" has the technology if the United States does. Also, it would be too difficult to monitor behavior altering transmissions and to defend against them. Short of exposing such technology there would be no way to defend except by having one's own "system" (of behavioral patterns consisting of a set of signals signifying "yes" and "no," or "good" feeling and "bad" feeling that can be linked to ideas). Recall that apart from Project Pandora, the CIA spent decades during MKULTRA and related projects, devising operational techniques to surreptitiously influence and affect behavior. Workable invisible weapons are too useful for arms control talks, and don't readily lend themselves to proofs of use or "verification" processes. Additionally, the importance of finding ways to circumvent dissent may have been one of the most significant lessons of

Vietnam.

Over the counter audio aside, the military has studied and considered for usefulness in a warfare and psychological warfare context a wide range of biologicals or pharmacological substances. In the memo referred to above, Helms wrote that the U.S. is five years ahead of the Soviets in pharmacological agents producing behavioral effects. Some of these substances would increase susceptibility to influence if incorporated in the multidisciplinary approach he wrote of. For difficult subscribers, perhaps in foreign parts, there are substances that have psychological or psychobiological effects ranging from subtle through devastating, and that cause increased susceptibility to conditioning. Some of these substances are similar to ones which are recognized by neurotoxicologists or behavioral toxicologists as occupational hazards; some are variations of substances used experimentally in laboratories to produce selective damage in certain neuronal tracts. Many substances needn't be injected or orally ingested, as they may be inhaled or applied with "skin transferral agents," i.e. chemicals like the popular industrial solvent, dimethylsulphoxide (DMSO), which can, in fact, enhance the applied substance's effect. For instance, some compounds cause damage that produces increased sensitivity to stimulus, distraction (or flooding of thought associations), and enhance susceptibility to influence. I.e., a state where automatic parallel information processing, which usually takes place outside of awareness, and interferes with conscious or more intentional limited channel processing. While causing acute mental symptoms wouldn't be the goal in groups, producing mild distraction, an ego weakened blurring between the sense of "I" and "you", would enhance some kinds of conditioning and promote suggestibility; then, perhaps transmitted "thought associations," "the voice of God", "lucky advice" or whatever, can more easily get through and have an effect. A side effect of lowered resistance to sub-threshold stimulus might be that some would become aware of illicit influence (even under normal circumstances there is a wide variation in sensitivity among individuals to sub-threshold stimulus; normal individuals whom psychology terms "reducers" are much more sensitive in this way; actually, most schizophrenics are extreme reducers, and therefore, much more aware of stimulus that others aren't cognizant of). Convenient to the agencies involved in covert influence, is that among primary symptoms of schizophrenia or mental illness are ideas that one is being influenced by "transmissions" (e.g. radio frequencies), "voices" or even telepathy; unless complaints about covert psychological weapons are well organized, they would tend to be discounted as indicative of mental imbalance.

There are many ways to create temporary or permanent states

that increase receptivity to suggestion and/or conditioning. It is interesting to note that scientific studies have correlated exposure to electromagnetic fields alone with mental hospital admissions and worsening of symptoms of mental patients, even as an etiological factor in the onset of mental illness. (A marker disease for exposure to microwaves is damage behind the lens of the eye; a disproportionate number of persons so damaged also suffer from mental disease or neurological impairment.)

The CIA is also interested in neuropeptides; these have profound effects when administered within a conditioning paradigm.

Specific Targets

Weapons against whom? Safe to say, in order to enlist the aid of scientists, the military and CIA would act true to form, that is, to motivate and overcome reluctance due to dictates of conscience, they would evoke a serious security risk, like the Soviets, during initial phases of development. In fact, on the "unclassified" face of it, a number of reports have openly suggested use of "microwaves" against "terrorists".

Los Alamos National Laboratory, now under supervision of University of California, prepared a report for Federal Emergency Management Agency (FEMA) setting forth that use of microwave radiation on terrorists could kill them, stun them or at least modify their behavior by changing their "perceptions." At this point the cloak is donned, and the report continues: "There are reports of Eurasian communist countries performing research with combined fields of signals from several different microwave frequencies to produce at least perceptual distortions in humans."

Cable News Network recently aired a report on electromagnetic weapons and showed an official document that was a contingency plan to use electromagnetic weapons against terrorists. It wasn't made clear who the terrorists were or what the contingency was. Prior to the news show, however, reports had surfaced, the source a DOD medical engineer, that in the content of conditioning, microwaves and other modalities had regularly been used against Palestinians.

It makes sense that the Palestinians would be targeted as a group for experimental purposes and to meet strategic goals. For instance, to exacerbate discord between political factions, a "bad feeling" (biologically uncomfortable or threatening) would simply be associated through use of sound with the idea of the "other" faction. It is an easy psychological trick to induce negative attribution (where a "bad feeling" is caused to be misattributed to something in our environment): feeling, followed

close in time with information input will color a thought, and become a conditioned emotional response (CER) if repeated. An excitatory autonomic reaction requires a cognitive appraisal or "labelling" of the inducing cause. Both the autonomic reaction and the labelling can be transmitted from a distance using electromagnetic fields, like radio frequencies or microwaves and "sound."

Specific frequencies at low intensities can predictably influence sensory processes. Feeling: pleasantness - unpleasantness, strain - relaxation, and excitement - quiescence, can be created with the fields. Negative feelings and avoidance are strong biological phenomena and relate to survival. Feelings are the true basis of much "decision-making" and often occur as sub-threshold impressions. Anger and other negative feelings are easy to cause to be displaced, and most people believe in the "trueness" of their feelings. Ideas including names can be synchronized with the the feelings that the fields can induce.

Greenham Common

Rather than belabor the obvious, for when DOD develops a weapon it can be said with certainty that it will be tested and, if possible, where it would be useful to meet their goals; another example will put motives and, at least, one type of application in more realistic perspective.

Women peace activists have kept an ongoing vigil at the periphery of the U.S. Air Force base at Greenham in England since 1981. They are protesting build-up of nuclear weapons. The U.S. Cruise missiles, which are nuclear warheads small enough to be mounted on the back of a truck called a launcher vehicle, arrived at the base in March, 1984. Since then the women in the encampment and members of the Cuisewatch network have insured that when the launcher vehicle and its convoy are taken out into the British countryside, the "dispersal exercises" aren't as secret as the military intended them to be. The women of the network, non-violent activists, have been subjected to intense harassment in an effort to be rid of their presence.

In the Fall of 1984, things changed dramatically; many, if not most of the women began suffering illness; and, simultaneously, the massive police and military presence at the base virtually disappeared, and new and different antenna were installed at the base. In a report prepared by Rosalie Bertell, commissioner for International Commission of Health Professionals for Human Rights, a non-governmental organization based in Geneva, Switzerland, the unusual patterns of illness ranged from "severe headaches, drowsiness, menstrual bleeding at abnormal times or post-menopausal, to bouts of temporary paralysis, faulty

speech coordination and in one case apparent circulatory failure requiring hospitalization."

Other symptoms documented by peace activist Kim Bealy, who coordinates investigations into reports of illness at specific places around the base, included; vertigo, retinal bleeding, burnt face (even at night), nausea, sleep disturbances and palpitations. Psychological symptoms included lack of concentration, disorientation, loss of memory, irritability and a sense of panic in non-panic situations. The symptoms have virtually all been associated in medical literature with exposure to microwaves and most listed can be induced through low intensity or non-thermal exposures.

Measurements were taken around the base by members of Electronics for Peace and by others. Strong signals, up to one hundred times the normal background level were detected on a number of occasions. In fact, signals ten times stronger than those felt to be emanating from normal base transmitting systems were found.

The strongest signals generally appeared in the areas where the women said that they suffered ill effects. For instance, they were found to cover the women's encampment near the "green gate" (gates to the base are designated by color), but stopped abruptly at the edge of the road leading to the gate. The strength of the signals were also found to reflect the activity of the women: e.g., they increased rapidly when the women started a demonstration. Visitors to the encampment, both men and women, reported experiencing the same types of symptoms and the same pattern of variation as the Greenham women. It may be revealing that British personnel who guard the perimeter of the base work very short shifts (two hours at a time) and only for two weeks.

What else has been used against the women of Greenham Commons? If high frequency verbal transmissions are used in U.S. department stores and have a significant effect in meeting their security goals, it seems likely that the military would also exploit the same technology. What would such a message tell the women? "There is something wrong with this place, 'I' want to get out of here, 'I' don't like it here..." Perhaps auditory transmissions would be simultaneous with the transmissions that were making them feel unwell.

In a review prepared by National Bureau of Standards, Law Enforcement Standards Laboratory, for Nuclear Defense Agency, Intelligence and Security Directorate, use of low intensity microwaves was considered for application as a "psychological deterrent." The report stated, "...microwave radiation has frequently been cited as being responsible for non-thermal

effects in integrated central nervous system activity. The behavioral consequences most frequently reported have been disability, listlessness and increased irritability." The report fails to mention just as frequently cited low intensity microwave health effects as chromosome damage; congenital birth defects; autonomic nervous system dysregulation, including disruption of bio-cycles; impaired immune function; brain damage and other neurological abnormalities, including leaks in the blood brain barrier and depletion of some neurotransmitters; among a host of other health impairments not to be taken lightly.

A reckless form of biological and psychological control has been perpetuated whether the source of the symptoms of the Greenham Commons is radar surveillance aimed at the women, or if there is conscious application of the microwaves as a "deterrent" or a means to drive the women away. Calculated efforts were also directed at preventing or eroding community support. In the summer of 1985, women planning to visit the camp had to be notified that long term health effects might ensue for women who were pregnant or intended to be. As activist Kim Bealy put it, "It would now appear that we are protecting the missiles by killing people slowly."

Health complaints similar to those of the women at Greenham Common are being made by women peace activists at Seneca, New York, and from activists at other locations. The symptoms at Greenham seem to occur on an occasional basis now, perhaps due to the Intermediate Range Nuclear Forces (INF) treaty, which applies to the missiles housed there, or due to somewhat increased public or congressional awareness.

It is not necessary that the transmission take place from equipment in the vicinity of a target (although the Greenham women seemed to be suffering from transmissions made from within the base.) Propagation of microwaves has been very well studied and is very sophisticated, e.g., a two inch beam can be sent from a satellite, point to point, to a receiving dish on earth; and, it was reported in 1978, that the CIA had a program called Operation Pique, which included bouncing radio signals or microwaves off of the ionosphere to affect the mental functions of people in selected areas, including Eastern European nuclear installations.

In the U.S. the military has intentionally obfuscated discussion of environmental health effects. With their ally "industry" they have won, at least for the time being, the right to perpetuate their interests, to the detriment of the public's best interests. Scientists who have spoken up on the environmental impact of military microwave or electromagnetic systems have been treated as security risks, and have had their

funds cut, so great is the military's concern in protecting their communications systems by ensuring themselves unlimited use of radio frequencies or microwaves.

The upshot is that in the U.S. at this time, there is no legally enforceable microwave standard. There never has been an enforceable standard for the public or the workplace. Microwaves at intensities within the suggested "guideline" have finally been shown, even by U.S. research, to cause health damage.

Worse, some industrial exposures are extraordinarily high. For instance, plastic sealers, a low income group comprised mainly of women within childbearing years, use equipment that exposes them to over 10,000 microwatts of microwaves or radio frequencies throughout an eight hour day, and in some case, to hundreds of milliwatts. As energy absorbed from their equipment flows to ground, so much heat has been felt in the ankles of some workers that they have learned to do their tasks with their feet elevated on plastic. They are not provided metal shielding as workers are in more health conscious countries.

While most of the public are only exposed to very low levels of microwaves and radio frequencies, a considerable number (between one and two percent) live or work near emitters, such as radio and television transmitters, military and airport radar, and industrial tools utilizing these frequencies. Therefore, it is likely that they are exposed to levels that have been proven to be unhealthful or downright dangerous.

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