

fear of the dark, or intense concentration."323 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. Radio frequency radiation, acting as a carrier for extremely low frequencies (ELF), can be used to wirelessly entrain brain waves.

The control of mind and body using various forms of electromagnetic energy, including radio signals, light pulsations, sound and by 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."324 This results in the brain following the external stimulating source in triggering brain pattern changes which effect the brain immediately and directly. In a simple application patented in 1977 one "invention provides a device, for improving upon the aforesaid application 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 and wind."325 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 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."326 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 years later another device was engineered to create these types of effects, again using very subtle energy resulting in: "Brain wave patterns associated with relaxed and meditative states in a subject are gradually induced without deleterious chemical or neurological side effects."327

323. MEGALITHIC NEW TOOLS AND TECHNIQUES FOR BRAIN GROWTH AND MIND EXPANSION, by Michael Hutchison, 1986, pg. 114. EPI1235
 324. US Patent #3,773,049, Nov. 20, 1973. Apparatus for the Treatment of Neuropsychic and Somatic Diseases with Heat, Light, Sound and VHF Electromagnetic Radiation. Inventors: Robert et al. EPI257
 325. US Patent #4,034,741, July 12, 1977. Noise Transmitter and Generator. Inventors: Adams et al. Assignee: Solitron Devices Inc. EPI267
 326. US Patent #4,181,175, March 4, 1980. Method and Apparatus for Repetitively Producing a Noise-Like Audible Signal. Inventor: Nagle, William L. EPI269
 327. US Patent # 4,335,710, June 22, 1982. Device For the Induction of Specific Brain Wave Patterns. Inventor: Williamson, John D. Assignee: Omnitronics Research Corporation. EPI292

Various systems were perfected and patents issued for controlling brain activity.328,329,330,331,332,333,334,335 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."336

In another 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 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."337 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 organizations 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

328. US Patent #4,777,343, JAN. 6, 1988. Method of Changing a Person's Behavior. Inventor: Wally Alan. EPI294
 329. US Patent #4,834,701, May 30, 1989. Apparatus for Inducing Frequency Reduction in Humans. Inventor: Messak Kazumi. Assignee: Hayashibara, Ken. EPI266
 330. US Patent #4,889,526, Dec 28, 1989. Non-Invasive Method and Apparatus for Modulating Brain Signals Through an External Magnetic Or Electric Field To Reduce Pain. Inventors, Rauscher, Elizabeth A. and Van Blise, William L. Assignee: Megatech Laboratories, Inc. EPI268
 331. US Patent #4,227,516, Oct. 14, 1980. Apparatus for Electrophysiological Stimulation. Inventors: Meland et al. EPI283
 332. US Patent #4,893,067, Nov. 29, 1989. Method and Apparatus for Translating the EEG into a Signal to Induce and Control Various Psychological and Physiological States and to Control a Local Instrument. Inventors: Knispel et al. Assignee: Neurosonics, Inc. EPI282
 333. US Patent # 5,123,898, June 23, 1992. Method and System for Altering Consciousness. Inventor: Gail, James. EPI289
 334. Patent # 5,352,181, Oct. 4, 1994. Method and Recording For Producing Sounds and Messages Achieve Alpha and Theta Brainwave States and Positive Emotional States in Humans. Inventor: Wally, Mark E. EPI291
 335. US Patent #5,289,439, Feb. 22, 1994. Method and System For Altering Consciousness. Gail, James. EPI333
 336. Ruitan, Leslie A. et al. "Enhancement of Temporal Lobe-Related Experiences During Brief Exposures To Milligauss Intensely Extremely Low Frequency Magnetic Fields." *Journal of Scientific Research*, 9(1), 33-54 (1980). EPI311
 337. US Patent #5,582,697, Oct. 6, 1996. Method and Apparatus for Reducing Physiological Stress. Inventor: Van Dick, Robert C. EPI294

humans,"³³⁸ was developed. Two years later another patent was issued 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.³³⁹ 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 of abuse are obvious and the opportunity for personal advancement is also great. Consider the possibility of gaining education by the transfer of data directly into the human brain by these new methods rather than the standard methods of learning. A serious consideration in developing these types of memory transfer systems will be the fact that they bypass normal intellectual filters - they are 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 equally large. We can no longer avoid the debate, in fact the debate is lagging far behind the scientific advancements. 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: "researcher 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."³⁴⁰ This is a simple thing of great use to anyone seeking self improvement.

Weapons of the Mind

"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

³³⁸ US Patent # 5,586,987, Dec. 24, 1998. Method and Recording or Producing Sounds and Messages To Achieve Alpha and Theta Brainwave States. Inventor: Davis, Mark E. EPI286
³³⁹ US Patent #5,213,562, May 25, 1993. Method of Inducing Mental, Emotional and Physical States of Consciousness, Including Specific Mental Activity in Human Beings. Inventor: Morone, Robert. Assigner: Interstate Industries, Inc. EPI287
³⁴⁰ Hoiz, Robert Lee. "Listening to Mozart a real - but temporary - IQ bulker, study says." *Anchorage Daily News*, Oct. 15, 1993. EPI529

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.

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 radiofrequency radiation (RFR) fields may pose powerful and revolutionary antipersonnel 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 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 operations.

Some of these potential uses include dealing with terrorist groups, crowd control, controlling breeches 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."³⁴¹

Quite the paper for 1984. Stimulating anomalous phenomena was another interesting point revealed in this paper. What could this mean? In one press report, 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 Tuesday."³⁴² 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 a book called *Psychic Warrior*. John Alexander, working out of Los Alamos and a major proponent of this area of research, wrote that "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 human operator as a power source."³⁴³

³⁴¹ Dean, Lt. Col. David. *Low-Intensity Conflict and Modern Technology*. Air University Press, April 1986. EPI709
³⁴² Cole, Richard. "ESP spies, 'Stargate' are psychic reality." *Saint Paul Pioneer Press*, Nov. 30, 1995. EPI481
³⁴³ Aftergood, Steven. "The 'Soft Kill' Fallacy." *Bulletin of the Atomic Scientists*, September/October 1984. EPI281

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 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 elicits 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.' Researched by the Russian military more extensively than by the U.S., 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."³⁴⁴

The use of the ionosphere in the CIA's experiments reminds me of the possibilities now available with systems such as HAARP, which was developed fifteen 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.

U.S. 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 overhear 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 a 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

³⁴⁴ Suranidis, Joseph M. "Non-Lethal Weapons for Military Operations Other Than War." <http://www.usafa.af.mil/wing/344edg/airman/suhead-1.htm>

developed with police forces to emit a pulse that would stop a car almost immediately."³⁴⁵

These systems offer both promise and risks as we move into the next 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 development 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.

Beamers?

Sometimes referred to as "wavies" or "beamers," these individuals are usually dismissed when asserting that they are the victims mind control weapons testing. In fact, at the "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."³⁴⁶ The problem is that it is difficult 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 probruit 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."³⁴⁷ Since the release of our first book, *Angels Don't Play This HAARP: Advances in Tesla Technology*, we have heard from hundreds of people making such claims. We can not 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 someplace 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 summarized on the wall of the Franklin D. Roosevelt Memorial where an inscription appears 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."³⁴⁸

Chapter 8

The End of Privacy

"Over the past 20 years Congress has encouraged the U.S. military to supply intelligence, equipment, and training to civilian police. That encouragement has spawned a culture of para-militarism in American law enforcement." ³⁴⁹

Several factors are contributing to the restraint of freedom and the end of privacy. A great deal of emphasis has been placed on the need for higher levels of surveillance in order to combat crime, terrorism, welfare fraud, deadbeat dads, tax evaders and others. The rationale is centered on the need for safety and security at the expense of personal privacy. Over the years repeated attempts have been made by the government to gain access to personal information and, when the public is aware of these attempts, they have been largely thwarted.

The issue of terrorism is real and significant resources are being allocated at the federal level to fight the threat. A good part of these resources are for sophisticated surveillance systems. In a 1999 news report President Clinton said "that he has been persuaded by intelligence reports that a terrorist chemical or germ threat or attack in the United States is likely. Without being specific, Clinton made his comments as his administration disclosed plans to ask Congress to fund \$2.8 billion for programs to fight terrorists armed with such weapons. He is also considering a proposal from the Defense Department to establish a commander in chief for the defense of the continental U.S. According to Clinton, he has been spending a lot of money considering the security challenges facing the country and thinking of how to solve them."³⁵⁰ This recurring theme has been altered by the federal government, the military and others as justification for dissolving the otherwise well defined lines of privacy.

³⁴⁵ Ibid.
³⁴⁶ AP, "Internet Feeds Delusions," July 5, 1999. EPI1123
³⁴⁷ Brownstein, Andrew. "Albany Suspends Implants research." *Times Union*, Aug. 25, 1999. EPI1833
³⁴⁸ Lall, Anthony N. "Human Research Subject Protection." http://www.pw2.net.com/~allall/BJISite_analysis/paper_web.html EPI1819
³⁴⁹ Miller et Al. "Clinton Describes Terrorism Threat for 21st Century." *New York Times*, Jan. 12, 1999. EPI1042
³⁵⁰ Source: NLECTC Law Enforcement & Technology News Summary, Jan. 28, 1999. EPI1042

In 1999 ChoicePoint Inc. "won an exclusive contract with the Department of Justice's Telecommunications Services Staff (TSS) to help federal law enforcement agencies in their investigations by way of the company's CDB Infotek System. The technology serves as a repository of databases with more than 3.5 billion public records online. Government officials have been using the records to find hidden asset ownership, locate individuals, and provide leads for criminal and civil investigations."³⁵¹ Later in the summer, the Department of Justice announced that "the National Criminal Information Center 2000 (NCIC 2000) which helps police to find out in a matter of minutes after scanning a fingerprint if suspects are wanted, rather than waiting hours, days or longer for results. The system, which links the bureau to state and local police, can process fingerprints and mug shots, as well as matches names to a list of wanted people, criminal histories, missing and deported people, and stolen goods, including guns, vehicles, license plates, stocks, boats, and other articles."³⁵² Not to be outdone, the legal research organization "LEXIS-NEXIS has created CertiFINDER, a tool that helps law enforcement officers find people that would rather remain hidden. LEXIS-NEXIS has compiled 2.3 billion documents online in almost 9,876 databases, and is expanding by 30 percent each year. CertiFINDER can search corporate and limited partnership registrations, doing-business-as and fictitious name registrations, professional licenses, aircraft and boat registrations, deed transfers, tax assessor records, bankruptcy filings, crime indices, and Social Security Administration death benefits limits."³⁵³ In other words, just about any public record, anywhere, can be accessed instantaneously without warrants, court orders or anything else but the interest of the person with access to the information. The idea that private companies have access to this information allows profiling and marketing manipulations to take place at unprecedented levels.

One of the recent doorways to these intrusions was adopted with the passage of the "Welfare Reform Act - formally titled Personal Responsibility and Work Opportunity Reconciliation Act" in 1996. It includes a provision that gives the government almost carte blanche authority to gather information on everybody, under the guise of tracking down those who owe child support payments. "The access to information is not limited to 'deadbeats,' but allows access to everyone's personal records. "We're heading toward the profiling of America," says Robert Gellman, a privacy-rights consultant based in Washington, D.C. It's the creation of a consumption bureau to parallel the credit bureau - someone is going to keep track

³⁵¹ Business Wire "US Dept. of Justice ChoicePoint Online Public Records Contract to Assist Federal Law Enforcement Investigations," April 6, 1999. Source: NLECTC Law Enforcement & Technology News Summary, April 5, 1999. EPI895
³⁵² Washington Times. "FBI Able to Finger Suspects in a Hurry," July 16, 1999. Source: NLECTC Law Enforcement & Technology News Summary, July 22, 1999. EPI816
³⁵³ Law Enforcement & Technology. "CertiFINDER Uses News, Public Records to Help Locate Suspects," Vol. 26, No. 7. Source: NLECTC Law Enforcement & Corrections Technology News Summary, Aug. 12, 1999. EPI907
³⁵⁴ Anchorage Times. "Snooping Sam," July 7, 1999. EPI169

of all the details of your life. Personal privacy is at risk as never before. However, this rush to electronic profiling is about more than just the digital invasion of privacy."³⁵⁵ The right to access this data has been extended by President Clinton to new financial conglomerates who have "the power to collectively exploit the information their varied affiliates have collected on their customers - health records, stock transactions and credit histories, for example - breaching the basic American right to privacy."³⁵⁶

These new technologies overlap into several areas. Doctors predicted in November 1999, "that brain scans would soon diagnose schizophrenia, toilets would analyze urine and sensors would smell out infection-causing bacteria...Implanted biochip photo sensors would monitor sight to the elderly and wheelchairs would take the disabled up and down stairs."³⁵⁷ An interesting set of predictions. Consider the concept of using a public toilet while on medication. It would be possible to set off a silent alarm which analyzed a person's waste, identified the person, and determined the legality of the substances discharged from a person's body. The technology already exists and may soon be used to effect government and corporate policies. The confidentiality of medical histories and other matters will fall victim to these new invasions of personal privacy.

In the patent category an apparatus and method for remotely detecting super-low frequency (SLF) and extremely low-frequency (ELF) signals emanating from human subjects has been developed. The SLF/ELF signals are composed of various wavelengths and amplitudes which correspond to the subjects internal physiological processes."³⁵⁸ This device will allow an observer access to your biological information which is unique to a person and private. Even a device for measuring blood flow and heart rates has entered the scene.³⁵⁹ "Other new devices will allow a number of other capabilities:

Back-Scatter Imaging System for Concealed Weapons Detection. A low-energy x-rays delivered by this device, which are equivalent to about 5 minutes' exposure to sunlight at sea level, are reflected back, rather than penetrating the body...The major advantage this device has over conventional magnetometers is that it can detect metallic as well as metallic weapons.

Ballistocardiogram Human Presence Detection Technology Demonstration. Ballistocardiogram technology detects the heartbeat of persons hidden in a large or small vehicle.

³⁵⁵ Talk of John. "The Rise of Little Brother," UpsideToday.com News, Feb. 23, 1999. EPI839
³⁵⁶ Sheer, Robert. "Privacy Issue Bubbles Beneath the Photo Op." Latimes.com, Nov. 16, 1999. EPI7
³⁵⁷ Ivan, Patricia. Technology Set to Transform Medicine. Reuters, Nov. 11, 1999. EPI1187
³⁵⁸ US Patent #4,940,058, July 10, 1990. Cryogenic Remote Sensing Physiograph. Inventors: TIM EPI1125
³⁵⁹ US Patent #3,980,076, Sept. 14, 1976. Method For Measuring Externally Of The Human Body Vascular Susceptibility Changes. Inventors: Woks, Jr. et Al. Assignee: The Board of Trustees of Stanford Junior University. EPI1123

Electromagnetic Portal for Concealed Weapons Detection. The magnetometers detect anomalies in the earth's magnetic field caused by magnetic material in objects carried by individuals.

Handheld Acoustic System for Concealed Weapons Detection. This device will be able to detect both metallic and non-metallic weapons concealed under an individual's clothing utilizing acoustic technology.

Thermal Imagers. Thermal imagers detect infrared radiation instead of visible light and allow officers to 'see' any heat-emitting object even one hidden in total darkness.

Physical Gas Sampling. Remote monitoring of effluent by-products of illegal activities such as methamphetamine synthesis can be detected through the use of gas sampling devices.

Radar-Based Through-the-Wall Surveillance System. It employs a form of radar that can locate and track an individual through concrete or brick walls.

Speaker Identification. Automatic speaker identification technology determines the identity of a speaker solely from a speech sample using as little as four seconds speech for system training, regardless of the speaker's language or choice of words.³⁶⁰

Each of these technologies deserves attention because they are all subject to abuse. Keep in mind that each of these signals interpreted digitally and stored in this way, which could allow for computers to manipulate the data so that it would allow law enforcement to "prove" their cases against people. The courts are considering the ramifications of thermal imaging but still allowing evidence into court proceedings. As a result, "thermal imaging has become a hot issue in law enforcement and the judiciary system. Attacks on the admissibility of thermal imaging in court have been largely overturned. However, courts have ruled that thermal imaging cannot be used to broadly sweep an area in the absence of probable cause."³⁶¹

The Militarization of the Police

The need for efficient and well armed police is a fact of life. Criminals continue to gain access to ever increasing firepower and technology. Crime rates continue to rise and prison populations grow largely because of the war on drugs. "According to a report released by the Justice Department's Bureau of Justice Statistics, the total

³⁶⁰ National Institute of Justice, "Technology Projects," <http://www.nijecic.orftechprojto.htm>, July 1999, EPI1787
³⁶¹ Paynter, Ronald L. "When the Gavel Goes Down..." Law Enforcement Technology, July 1999, Vol. 26, No. 7. Source: NLECTC Law Enforcement & Technology News Summary, Aug. 5, 1999, EPI1914

Prison population in the nation grew to 1.3 million inmates last year; however, the 4.8 percent rise is less than the average growth of 6.7 percent since 1990. There are an additional 592,462 inmates awaiting trial and serving short sentences in local jails. In 1998, there were an estimated 461 inmates sentenced to at least a year in prison for every 100,000 U.S. residents, which is 169 more inmates per 100,000 residents than in 1990.³⁶² This trend needs to be evaluated as the United States, one of the "freest" countries in the world, jails an ever increase number of citizens at great public expense. Each new crime initiative costs taxpayers billions of dollars, has marginal impacts on crime, and great costs to personal liberty.

An increased federal presence in local law enforcement is also blurring the line between states' and federal rights. "The National Defense Authorization Act of 1994, section 1122, established a requirement that the U.S. Department of Defense (DoD) develop procedures to enable state and local governments to purchase law enforcement equipment suitable for counterdrug activities through federal procurement funds."³⁶³ Over the past 20 years Congress has encouraged the U.S. military to supply intelligence, equipment, and training to civilian police. That encouragement has spawned a culture of para-militarism in American law enforcement...nearly 90 percent of the police departments surveyed in cities with populations over 10,000 had paramilitary units...³⁶⁴ Closer to home, and with much less fanfare and public attention, the US Army has participated in an unprecedented number and type of domestic activities including: disaster relief operations, military support to law enforcement in the war against drugs, and discrete cases of military support to federal law enforcement agencies.

The next few pages draw on an article published in the fall of 1997 in the military quarterly, *Parameters*. The coming years will likely see an increase in the use of the military within the United States. Because of the potentially adverse effect of such uses, the relationship between the military and the public can only be maintained by strict conformance with the legal framework established by the constitution and federal law. Consequently, it is vital that national leaders and their staffs understand the legal aspects of these operations.

The Posse Comitatus Act prohibits the Army and Air Force from enforcing civil criminal law in the United States. This 1878 law stopped soldiers from interfering with voters during Reconstruction and is a foundational concept in democratic society.

The Posse Comitatus Act provides a broad proscription against officers enforcing the law. Later congressional acts liberalized the original restrictions of Posse Comitatus and have altered the way the

³⁶² Segert, Jerry. "US Prison Inmate Population Swells to 1.3 Million." *Washington Times*, Aug. 1998. Source: NLECTC Law Enforcement & Corrections Technology News Summary, Aug. 19, 1999, EPI1896
³⁶³ Bureau of Justice Assistance. *The State and Local Law Enforcement Equipment Procurement Program*. BJA Fact Sheet. <http://www.ojp.usdoj.gov/BAJA/html/site1.htm>, EPI1855
³⁶⁴ Weber, Diana Cecilia. "Warrior Cop: The Ominous Growth of Paramilitarism in American Law Enforcement." CATO Institute Briefing Paper No. 50, Aug. 28, 1999, EPI1121

eral agencies in suppressing drugs. The military zeal that creates performance and dedication to team efforts must be subordinated to healthy skepticism and critical review. Missions such as those described above are on the periphery of the role of the military. Any trial or perceived departure from applicable legal restrictions can lead to an unacceptable loss of confidence in the government.³⁶⁵

The military has been establishing regional centers for taking the task of law enforcement normally reserved for other agencies. The Department of Defense has emphasized, however, that its RAID (Rapid Assessment and Initial Detection) commanders would defer to the command of the local incident commanders, rendering assistance as needed. The 22 RAID teams are scattered strategically across the country, and will eventually grow in number, pending funding from Congress. The military is integral to law enforcement research because the Department of Defense spends much more money than the National Institute of Justice on related research and development.³⁶⁶

In other rehearsals for the future, the "largest operation of the controversial Urban Warrior maneuvers held to date - a week of joint Army-Marine Corps exercises intended as a way to test new technologies, equipment and systems which the military says are necessary for warfare in the next decade,"³⁶⁷ was initiated in 1999. Criticism of the training event has centered around the use of urban locations, exposing innocent bystanders to the use of live ammunition and explosives. The military has also been criticized for providing people in the area of the exercises with advance warning.³⁶⁸

Many criminologists "fear that the trend toward militarization of policing will lead to the further hardening of police culture and practices." "This fascination with the hardware of war flies right in the face of the traditional model of police as public servants," says Tony Platt, co-author of the seventies radical classic on law enforcement in *Fist & The Velvet Glove*.³⁶⁹ This attitude was exemplified in a recent press interview where "a Los Angeles-based federal tactical officer lamented the plight of American SWAT teams, which lack the development of a terrorist-fighting work ethic where 'due process of law' meant that all the hostages were alive, and whoever stood in their way ended up with a 9mm round between the eyes."³⁷⁰ While there is no doubt that the battle for the streets of America is a tough one, local law enforcement deserve our support we must remember that we are protecting. The rule of law must prevail and the tradition which assures our continued liberty must be maintained.

365. Thomas H. Legal Aspects of Domestic Employment of the Army." *Parameters*, Autumn 1982. EPI828
366. *Law & Order Online*. "Technologies and Tools for Public Safety." July 29, 1999. Source: www.lawandorder.com/technology/technology.htm
367. *Law Enforcement & Corrections Technology News Summary*, Aug. 19, 1999. EPI800
368. S. J. S. "War games come to Monterey." *WorldNetDaily*, March 15, 1999. www.worldnetdaily.com/blueesy_exnews/19990315_xex_war_games_co.ahim
369. S. J. S. "Press charges rough treatment." *WorldNetDaily*, Feb. 22, 1999. www.worldnetdaily.com/blueesy_exnews/19990222_xex_press_charges.shiml
370. J. S. "The Next Step: The Next Step." *The Nation*, Feb. 3, 1997. pp. 22-24. EPI14
371. J. S. "SWAT Teams of Europe." *Law and Order Magazine Online*, Oct. 14, 1998. www.nlectc.com/Law_Enforcement_Technology_News_Summary, Nov. 5, 1998. EPI1085

armed forces can assist law enforcement. Congress began to liberalize the law in order to fight illegal drugs. The army can provide equipment, training, and expert military advice to law enforcement agencies as part of this effort. In addition, troops are authorized to provide a wide range of support along the borders to stem the tide of illegal drugs entering the United States.

During the now famous siege at Waco a request was made to the Operation Alliance for the military to support a BATF operation against a methamphetamine laboratory. The request asked for military training in a number of areas, including "room clearing discriminating fire operations," termed "close-quarter combat" by the military. BATF requested more than just advice: they wanted army medical communicators to accompany them on the actual mission.

The results of the BATF's botched attempt to serve a warrant at the Branch Davidian compound were disastrous. Initially, forty BATF agents were killed and twenty were wounded, which was the greatest loss of life in the bureau's history. At that time six Branch Davidians were killed and four wounded. The resulting siege held the attention of the nation until its fiery conclusion two months later. Seventy-four Branch Davidians died in the final assault including twenty-one children under the age of fourteen.

The lessons for America's military are still being sorted out at the end of 1999. Major issues stand out. First, military decision makers cannot rely on the word of other federal agencies. Aggressive agencies will attempt to use the "war on drugs" mandate to warrant the military even when they know the circumstances don't warrant it. The drug issue was nonexistent, having been settled six years before when David Koresh removed a resident involved in illegal drug activity and reported him to police.

The real issue for the BATF stemmed from their conclusion that the Branch Davidians were stockpiling weapons. That issue is what likely drove the BATF's request for Special Forces support. The lack of involvement of the federal drug laboratory reaction force and the extensive nature of the requested support should have sent up signals for the military. These should have provided strong indications that greater care should be given in evaluating the request.

The image of the Army's special operations forces joining BATF agents while storming a religious compound, however misguided its leader, could have seriously impacted public support for the military. The initial request of the BATF was approved but it visibly acted upon. If the request had been acted upon it would likely have resulted in greater losses of life in the initial attack and had a chilling effect on popular support of the military. This would have been a clear violation of the Posse Comitatus Act and would have been further complicated by the military's involvement in a case of religious freedom.

The next lesson for the military is to recognize that the enthusiasm to complete missions needs to be limited while supporting religious freedom.

Communications

The use of computers is providing another avenue for emergency notification to civilian populations. Law enforcement agencies will increasingly rely on computers to disseminate important announcements as more Americans spun television and radio in favor of the Internet. Early in July 1999, United Water asked 750,000 residents of New Jersey's Bergen and Hudson Counties to boil drinking water and refrain from outdoor use of water until a major leak at the Oradell Reservoir was repaired. According to the Internet research firm Jupiter Communications, thirty-seven percent of American households are now online.³⁷³ Another variation on the same theme could also be very helpful in a number of emergency situations. "The Berkeley, Calif. police department is exploring the use of Reverse 911 in crime stopping. Reverse 911, produced by Sigma Micro, when combined with a GIS mapping program and local phone numbers, allows police to send generic alert messages to any chosen area. An officer records a public message, highlights an area in the GIS, and clicks the mouse. The message is sent out to all phone numbers in the highlighted area."³⁷⁴

Meanwhile, the Amherst Police Department in New Hampshire is now providing its field officers with laptops for instantaneous communication. "The new system, which has already resulted in arrests, but is used by fewer than 5 percent of American police departments, allows officers to tap into local, state, and federal law enforcement databases and automatically sends back-up to an officer who has stopped a wanted or dangerous criminal."³⁷⁵ The use of these systems is increasing and in a few years will allow police access to everyone's personal information regardless of a person's criminal history. Now is the time to begin to raise the questions about access to information about people who do not have criminal histories or other legal reasons for government to investigate our private affairs.

Court proceedings are also beginning to take on the look of the information age. In May 1999, the Orlando, Florida, based Circuit Court "unveiled a courtroom with videoconferencing equipment and other technology to facilitate Internet broadcasts. For law enforcement officials, the technology means the long process of moving prisoners from jails to courts for arraignment or trial can be made more cost effective and efficient when court administrators present evidence through digital means. The system will have the capability to link in external systems and allow experts to testify from a videoconferencing locale anywhere in the world. In the future, this technology will enable the broadcast of live and archived trials via the court's Web site."³⁷⁶

³⁷³ *Bergen Record Online*, "E-Mail From the Police," July 27, 1999. Source: NLETC Law Enforcement & Technology News Summary, Aug. 5, 1999. EPI812
³⁷⁴ Overton, Rick. "Taking a Byte Out of Crime," *Business 2.0*, Vol. 4, No. 7. Source: NLETC Law Enforcement & Technology News Summary, Aug. 12, 1999. EPI808
³⁷⁵ Zimmerman, Emily. "Police Have a New Weapon," *Cabnet.com*, July 28, 1999. Source: NLETC Law Enforcement & Technology News Summary, Aug. 5, 1999. EPI813
³⁷⁶ Chen, Anne. "Court Summons It," *PC Week*, June 14, 1999, Vol. 16, No. 24. Source: NLETC Law Enforcement & Technology News Summary, July 1, 1999. EPI836

These innovations should be evaluated based on a number of factors including the value of personal appearances in front of judges and juries. Subtle body language, gestures and other actions communicating information to those sitting in judgement are lost in the video conference medium.

One of the innovations which most people can see the relevance of is the use of robots in situations where the risk of loss of life is high. A "robot can now enter a building with its camera, maneuverable arm, lights, and speaker system and 'negotiate' with a suspect...but in some instances, the robots have caused dangerous criminals to become angry or scared about coming into contact with the futuristic units."³⁷⁷ This use of technology provides safe visual access to otherwise unsafe situations and might even compel criminals to surrender - or shoot the robotic messenger rather than a living person.

Motion Detection

New technologies are also leading to better systems that will enhance public safety. For instance, a new type of radar has been patented which "could protect your house or apartment too. Built into a burglar alarm, it bounces radio waves off objects in a room to detect whether any are moving. Called micropower impulse radar, or MIR, the new technology is so versatile that it will soon be incorporated into dozens of products."³⁷⁸ This system could be used in developing sensors for notifying drivers of objects outside of their field of vision and in other similar applications. "Proximity technology allows for the transmission of data from a card, keyfob, or other type of transmitter to a receiver for electronic access control...Among the applications for proximity technology are revenue collection and automatic billing; security authorization; private and commercial parking garages; building/area entry control; file command applications; alarm system activation; guarded tour systems; ATMs; and automotive anti-theft."³⁷⁹

In another development, the use of specially designed tags and receivers allows the movements of individual people to be tracked. The data in these tags can be picked up by radio waves from several feet away - without direct line of sight and without permission of the person carrying the cards or merchandise. Thus they could tell employers who is spending too much time by the water cooler, and let merchants peek inside purses and billfolds to see who is entering their stores.³⁸⁰ These technologies invade privacy in that merchants do not have a right to access the purses and billfolds of customers.

³⁷⁷ Moore, Russ. "Consider Holograms for the 21st Century," *Police*, Aug. 1999, Vol. 23, No. 8. Source: NLETC Law Enforcement & Corrections Technology News Summary, Aug. 26, 1999. EPI864
³⁷⁸ Sover, Dawn. "Radar On a Chip, 101 Uses in Your Life," *Popular Science*, March 1995, pp. 107-10, 116-117. EPI5
³⁷⁹ O'Leary, Tim. "Proximity Technology: Today and Tomorrow," *Security Technology & Design*, Feb. 1999, Vol. 9, No. 2. Source: NLETC Law Enforcement & Technology News Summary, March 1, 1999. EPI1012
³⁸⁰ Holcomb, Henry J. "Privacy may be cost of Technology," *Anchorage Daily News*, July 29, 1999. EPI182

Tracking employees, although it might be legal, certainly will cause employees to question their employer's level of trust in them.

"Burdened with overcrowded and expensive jails, state governments are increasingly relying on a new means of tracking prisoners: electronic monitoring...So far, more than 30 states use some form of electronic monitoring, and experts surmise that about 100,000 prisoners are involved in the program."³⁸¹ This system for minor offenses will reduce costs, increase efficiency and limit criminal movement in ways that the public can appreciate. Yet, abuse is possible. "Pentagon satellites once reserved only for guiding nuclear missiles are now being used to monitor prison parolees and probationers as a way to reduce the soaring incarceration rates. The ConTrak monitoring system currently tracks 100 people in nine states using 24 Department of Defense satellites. Currently, 11,000 Americans are monitored under house arrest by a less sophisticated system that cannot track the movements once they leave the house. Critics worry about the implications of an Orwellian future and say the system is rife with possibility of misuse."³⁸² Each new system must be evaluated in the light of civil liberties and basic privacy issues as they relate to the average person... or that "Brave New World" will arrive sooner than we think.

The Movement Police

Everything is going digital. Global Positioning Systems (GPS) for law enforcement, commercial purposes and personal use is the fastest area of technology transfer. The use of these systems in automobile designs, remote recreation and as standard safety equipment on boats and small airplanes is now common.

Government databases are being constructed which use this information not only for locating people, but also in conjunction with other information systems for mapping, for example, residence locations. "Geographic Information Systems (GIS) and the Global Positioning Systems (GPS) aid officials in addressing over 75 percent of Vermont residents who live in rural locations, or who have a box-type address. Satellite transmissions provide the longitude and latitude of a home, and then a GIS database stores the information. In the coming year, the system will also include a map for call-takers to help point emergency service providers toward their destination."³⁸³

One of the other interesting uses for this technology is in conjunction with other systems. In recent years significant attention has been focused on whether police should pursue or not pursue a fleeing criminal suspect. This issue is being confronted by police departments across the country as safety issues continue to be debated. "Long Arm of the Law Wraps Around Offenders' Ankles," *Reuters Online*, Jan. 21, 1999. Source: NLECTC Law Enforcement & Technology News Summary, Jan. 28, 1999. EPI1041

382. Fields, Gary, "Satellite 'Big Brother' Tracks Parolees," *Gannett News Service Online*, April 9, 1999. Source: NLECTC Law Enforcement & Technology News Summary, April 15, 1999. EPI992

383. *Law and Order*, "9-1-1 System Most Advanced," Jan. 1999, Vol. 47, No. 1. Source: NLECTC Law Enforcement & Technology News Summary, Feb. 4, 1999. EPI1039

raised...More developments are on the way which include a GPS tracking system for stolen vehicles and a remote ignition shut down system. Both tools would require fleeing vehicles to be equipped with a sensor that could be remotely activated by the pursuing officer."³⁸⁴ This technology already exists, with a New York engineer and a sheriff's deputy having "developed a radio-controlled microchip, which they hope will be placed in every new car sold in the United States, allowing police to disable suspect cars' accelerators. Before the Frequency Activated Neutralization Generator System (FANGS) cuts off the gas pedal, the suspect's lights will flash and the horn will blow repeatedly to warn others in the area. Also, some fear that FANGS' use of radio waves opens it to manipulation by non-police individuals, although the technology incorporates an internal alarm to alert authorities to tampering."³⁸⁵ The idea that these systems could be activated by others is a significant issue. Almost any technology can be "one-upped" by the next generation of technology. A good example is what happened with radar guns used by police being superseded by improved radar detection devices by drivers. The need for these to be placed in "every new car" is also questionable, considering new cars are already vulnerable to electromagnetic pulse emitters, described in earlier chapters, which can totally shut down the electronic systems on new cars. This technology would then really be limited to the targets of police rather than imposing the system on everyone.

Another twist in the newtech investigation of crime was really quite innovative. A primary suspect in a murder case had his vehicles impounded for searches about a week after his child disappeared. Investigators returned the vehicles with some additional gear - monitoring devices linked to the high-tech Global Positioning System, a court document indicated. Sheriff's officials refused to discuss or describe the GPS equipment."³⁸⁶ Nonetheless, it led the police to the burial site of his victim. In another incident across the country, police in State College, Pa., "recently used Global Positioning System (GPS) technology to nab an arson suspect. After receiving tips from local residents who had seen David Beer, 39, near some dumpsters that later caught fire, officers obtained the necessary warrant and placed a small GPS receiver on Beer's vehicle. Officers were able to monitor Beer's vehicle from the station, and they obtained visual confirmation that Beer was indeed driving. Using laptops, officers tracked his movements, and eventually linked Beer to a fire."³⁸⁷ In these instances proper warrants were issued and the suspects caught.

384. Strandberg, Kaitlin W. "Pursuit at High Speeds," *Law Enforcement Technology*, Sept. 1998, Vol. 25, No. 9. Source: NLECTC Law Enforcement & Technology News Summary, Oct. 16, 1998. EPI1094

385. Frito, Dan. "Radio Device Could Put FANGS into Police Pursuit Abilities," *Police*, July, 1999, Vol. 23, No. 7. Source: NLECTC Law Enforcement & Technology News Summary, July 8, 1999. EPI930

386. Wiley, John K. "Girl's body found after satellites track father," *Anchorage Daily News*, Nov. 17, 1999. EPI1213

387. Krinney, David. "GPS Technology Used to Nab Suspect," AP, March 15, 1999. Source: NLECTC Law Enforcement & Technology News Summary, March 18, 1999. EPI1000

In a January 1999 report on new "see-through-your-clothes" technology officials found that people preferred to be stripped naked before they would allow customs officials to test out their new gadgetry. "Last October, the Customs Service started giving foreign visitors and returning Americans who were suspected of drug smuggling the option between a strip-search or an x-ray... Of the nine people at Kennedy and eight at Miami who chose between the search and x-ray within the first three months of the experiment, everyone opted for the strip search. Custom Service officials said the x-ray option could have been rejected because drug smugglers who swallow drugs would want to avoid the detection of an x-ray, innocent tourists could have had health concerns about an x-ray, and being driven to another building where the x-rays are located could have been seen as an inconvenience."⁴⁰³ It is interesting in that the technology was resisted, although of one of the reasons for saying "no" to the new technology might have had more to do with privacy than inconvenience. Increasingly these technologies will be utilized and the option for a strip search discouraged or perhaps even disallowed.

"The next generation of weapons detectors is deadly accurate, able to look through clothes to find guns, explosives and even syringes and drug vials tucked into rolls of fat."⁴⁰⁴ These systems are being introduced in prison work release programs for returning inmates at the end of their work day.⁴⁰⁵

Throughout this text we have pointed out the risks and documented actual abuses. The Internal Revenue Service (IRS) is well known for abusing its power. This agency of the government was the most abusive until recent changes were forced on it by the U.S. Congress, which had grown tired of their overreaching approaches and disregard for due process. In July 1994, "Senator John Glenn, Ohio Democrat, released Internal Revenue Service papers showing that its employees were using IRS computers to prowl through the tax files of family, friends, neighbors, and celebrities. Since 1989, the IRS says, the agency has investigated more than 1,300 of its employees for unauthorized browsing; more than 400 employees have been disciplined."⁴⁰⁶ This is the typical approach to law breaking by government employees; they are "disciplined" while anyone else would be arrested. Invading the privacy of individuals in our cyber worlds should be considered no different than kicking in our front doors. The "front door" to your life is now extended beyond the place where you reside. We all exist, in a sense, in cyberspace, where the most personal and intimate details of our life are stored. Violating this space is more than a minor intrusion, it is a "break-in" and raw violation of each of us as people - not just detached datafiles.

⁴⁰³ Finfar, Alan. "Customs Strip-Search Is the Preferred Option." *Sacramento Bee*, Jan. 24, 1998.
Source: NLETC Law Enforcement & Technology News Summary, Feb. 11, 1999. EPI1030
⁴⁰⁴ Butlerfield, For. "Technology Will Allow Camera To See Weapons At A Distance." *Anchorage Daily News*, April 8, 1997. EPI83
⁴⁰⁵ Bain, Jackson. "X-Ray Vision." *Corrections Technology & Management*, Jan/Feb 1999, Vol. 3, No. 1. Source: NLETC Law Enforcement & Technology News Summary, Feb. 11, 1999. EPI1034
⁴⁰⁶ Nees, Eric. "Big Brother @ Cyberspace." *The Progressive*, December 1994, pp. 22-27. EPI18

A year after the IRS abuses were reported by the Senator, the ability to access even more personal information was made available to them. "In an effort to catch more tax cheats, the Internal Revenue Service plans to vastly expand the secret computer database of information it keeps on virtually all Americans. Likely to be included are credit reports, news stories, tips from informants, and real estate, motor vehicle and child support records as well as conventional government financial data."⁴⁰⁷ So here it is again, the passing of even more power to an agency that should be losing power rather than gaining it.

The IRS was not alone in the blatant disregard for the law or personal privacy. Over 900 FBI files on allies, political adversaries and others deemed by White House insiders as dangerous were turned over to the Clinton White House. This happened before the big scandals broke regarding the President and his administration. It is interesting to note that every time one of his opponents raised an issue in attempting to take the moral high ground some mysterious "leak" would occur and the adversary was brought down. This pattern was repeated several times, which leads one to wonder, would he, could he do such a thing or allow it to happen? "FBI Director Louis Freeh bluntly reported Friday that the Clinton White House had no justification for seeking sensitive reports on employees of previous administrations and the bureau had no excuse for providing them. "The prior system of providing files to the White House relied on good faith and honor," Freeh said. "Unfortunately, the FBI and I were victimized. I promise the American people that it will not happen again on my watch."⁴⁰⁸ Good faith and honor? Are these attributes of the political leaders of today? We think that these attributes are the exception rather than the rule.

During the mid-1990s we were not the only government engaged in high level abuse of privacy rights. The Canadian government had their own scandal brewing. The top secret Canadian Security Establishment (CSE) "is accountable to Parliament through the minister of defense and uses high-tech eavesdropping equipment to intercept foreign communications."⁴⁰⁹ But it was doing a great deal more as far as surveillance was concerned. Organizations which are allowed to operate in secret will always be used by those in power to further their own political objectives. Systems which provide for whistle-blowing and accountability are needed in almost every country on the globe. "Canada's secret high-tech spy agency has thousands of files on ordinary Canadians and key separatist politicians including Premier Jacques Parizeau, Radio-Canada reported last night."⁴¹⁰ "Liberal cabinet ministers did all they could to downplay allegations that Canada's most secret spy agency had targeted Quebec

⁴⁰⁷ Greve, Frank. *Knightrider* Newspapers. "IRS Wants More Data About You." *Anchorage Daily News*, Jan. 20, 1995. EPI103
⁴⁰⁸ Landner, George and Thomas, Pierre. "FBI Puts Brakes On Abuse Of Files." *Anchorage Daily News*, June 15, 1996. EPI30
⁴⁰⁹ Canadian Press. "High-tech agency spied on citizen, new book claims." Oct. 20, 1994. EPI1149
⁴¹⁰ Gazette/Southern News. "Was Parizeau a spy victim?" Oct. 22, 1994. EPI1152

separatists. The first, in a book by Mike Frost, was that the top-secret Canadian Security Establishment eavesdropped on communications between the governments of France and Quebec while Rene Levesque was premier. The second, reported by Radio-Canada, was that the CSE has files on Levesque, current premier Jacques Parizeau and Quebec Intergovernmental Affairs Minister Louise Beaudoin.⁴¹¹ This is another case where the separatists have, in Canada, the right to greater levels of self-determination. Yet, even though their political activities were probably legal, their rights were violated by their own government. The real question which should be asked is: did heads roll? What about the little guys in this super-secret fraternity? Didn't any of them have the courage, or foundational democratic beliefs, to "just say no" and challenge the system? Are these super-secret "guardians of democracy" so lost in their own world view that they have forgotten what our countries were founded on...or perhaps they never really knew, and, after all, it was just a job? But a Canadian said it best, "'If these allegations prove to be true it is something extremely serious,' said deputy premier Bernard Landry at a news conference. 'It is a highly immoral act in a democracy for a central government to spy on one part of its constitutional federated regime, regardless of the circumstances.'"⁴¹²

Company Snoops

The use of computer chips to allow law enforcement and commercial interests access to the information housed in personal computers was the subject of a great deal of debate during the 1990s and was thought to have been stopped. This proved not to be the case. In early 1999 it was reported that the Electronic Privacy Information Center (EPIC) was "planning to file a petition requesting that the FTC investigate Intel for consumer privacy violations regarding the ID numbers contained in the company's new Pentium III chips. The group is concerned that the chip's embedded serial numbers, which identify consumers to each web site they visit, will be used without the consumer's consent for marketing or law-enforcement purposes."⁴¹³ Apparently, industry thought better than the public and moved forward anyway without consideration for the privacy of its customers.

In another report, security expert Richard M. Smith of Brookline, Mass., found that one company's software secretly transmitted to the company's headquarters details about which music CDs each customer listens to and how many songs he copies, along with a serial number that could be used to identify him.⁴¹⁴ Will this might be ok with customers, they should be permitted to choose if this data is to be collected or not. Grocery stores are even more

411. Wells, Paul. "Those people are hiding something." *The Gazette*, Oct. 25, 1994. EPI1150
 412. Authier, Philip. "PC rakes Ottawa over spy-on-Levesque report." *The Gazette*, Oct. 21, 1994. EPI1148
 413. Mosquera, Mary. "Privacy Group Wants FTC to Investigate Intel." *TechWeb*, Jan. 29, 1999. Source: NLETC Law Enforcement & Technology News Summary, Feb. 11, 1999. EPI1031
 414. AP. "Software secretly gathered user data." *Anchorage Daily News*, Nov. 2, 1998. EPI1143

known for tracking data and no matter what "promises retailers make, nobody can be sure who has access to their data warehouses, and that goes for all kinds of stores, not just supermarkets."⁴¹⁵ It is now possible to define the shopping habits of individuals, keeping track of each detail of their consuming patterns.

In our home state, the poor are the targets of this new technology, with paper food stamps and welfare checks being virtually replaced in Alaska by electronic benefits through the Quest card, as well as automatic deposit.⁴¹⁶ This kind of transaction tracking should not be made by government as it is not necessary for managing their programs.

Private companies use of technology in these ways is by no means limited to the United States. In a scandal which raised the hackles of the British, it was disclosed that British Petroleum "had set up 148 hidden microphones across the UK to record customers conversations, and without their knowledge, their workers. Despite the resignation of two members of staff who only found out about the hidden devices after an engineer refurbished a service station in Ayr, the company still plans to install them into all of its 1,600 petrol stations."⁴¹⁷ Why would they do this? What values are traded to commercial interests that are worth such invasions of privacy?

The new technology is not limited to its obvious uses but can also create significant unintended problems. One such system was tagged as being hazardous to one's health and perhaps deadly if an individual was wearing a heart pacemaker. "A new study conducted by the North American Society of Pacing and Electrophysiology has found that anti-shoplifting systems using 'acoustomagnetic' technology pose a serious health risk to the approximately 1 million Americans that have surgically implanted pacemakers. Based on controlled testing with 75 volunteers, the study determined that acoustomagnetic systems affected 96 percent of the pacemakers tested. Researchers said that the high disruption rate can be attributed to the fact that acoustomagnetic security gates produce a more intense electromagnetic field than other types of anti-shoplifting systems. Acoustomagnetic gates are typically used to patrol retail establishments with wide entrances, such as mall stores, because they emit such a powerful pulsing capacity."⁴¹⁸ Other systems include Radio Frequency Identification (RFID) which uses "radio or electromagnetic reproduction to penetrate materials and read an embedded tag. RFID systems utilize an identification tag, reader, and data-processing equipment. Electronic Article Surveillance (EAS) systems use RFID to detect goods that have not been authorized to leave a retailer. EAS systems are based on a tag which emits radio or

415. Deibel, Mary. "Grocery discount cards raise privacy issue." *Anchorage Daily News*, Oct. 31, 1999. EPI1164
 416. Demer, Lisa. "Food stamps enter the electronic age." *Anchorage Daily News*, Oct. 31, 1999. EPI1165
 417. BBC Online Network. "Alarming Threat to Workplace Privacy." Feb. 16, 1999. EPI101
 418. Larson, Ruth. "Some Anti-Shoplifting Gates Disrupt 96 Percent of Pacemakers." *Washington Times*, Oct. 28, 1998. Source: NLETC Law Enforcement & Technology News Summary, Nov. 5, 1998. EPI1082

agnetic frequencies, and a detector."419,420

The dehumanizing of populations, treating them as criminals, "consumers" or "tax paying drones," is becoming even more prevalent as technology outstrips good sense and basic democratic ideas.

Who's Listening

"A number of key technological and political trends are converging to facilitate the creation of Total Surveillance Societies. Our factors facilitate that evolution; (1) the development of technical means, (2) the evolution of political will, (3) the existence of legal mandates, and (4) the formulation of common standards. Their subtle interplay slowly dissolves privacy."421

The desire and ability to manipulate the population of the United States through the media and total surveillance was on the political drawing boards as far back as 1971. When first put forward the idea was stopped, not because it was not possible, but because it had already been achieved. "The general efficiency of our surveillance system made it possible to shelve a program submitted by President Nixon in August 1971 to wire every house, car, and boat in America. The program included a blueprint for a government-operated propaganda system via a TV network that would have linked every state, city, and home. One channel would have been devoted directly to children's programs."422

As technology advanced, so did the desire to revisit the issue. New laws were passed to make it happen.423 "In June 2000, the Communication Assistance for Law Enforcement Act (CALEA) will mandate telecommunication service providers to deliver data to law enforcement agencies for electronic surveillance. Pen-Link software allows users of LINCOLN to run a local area network, and automatically loads call contents into its databases, along with tags such as target, date, time, duration, and number dialed. Pen-Link databases may be searched by call event, part of the call, or keywords and may be shared among any of the 4,000 federal, state, and local agencies that use them."424 "Full implementation of the Communications Act for Law Enforcement (CALEA) has been postponed until the summer of 2000 due to disagreements between telecommunications companies and law enforcement agencies. Following implementation, CALEA will make available the technological methods to conduct surveillance, with previous court permission, on wireless communications and modem and pager transmissions.

9. Harwood, Emily M. "RFID Systems As Security Solutions." *Security Technology & Design*, January, Aug. 26, 1999. EPI893
10. Tovian. Electronic Identification Systems. <http://www.tovian.com/nomtek.html> EPI849 January, Aug. 26, 1999. EPI893
11. Advanced Surveillance Technologies Conference. *Conference Summary*, Sept. 4, 1995. P1134
12. Frazier, Howard. *Unclanking The CIA*. Macmillan Publishing Co., 1978. EPI861
13. AP. "FCC moves to give FBI police cell-phone wiretap capability." *Anchorage Daily News*, 19. 26, 1999. EPI804
14. Kambale, Rebecca. "New Resources to Tap Into for CALEA Compliance." *Law Enforcement Technology*, June 1999. Vol. 26, No. 6. Source: NLETC Law Enforcement & Technology News January, July 22, 1999. EPI826

transmissions. Although cellular and phones and pagers have enabled criminals on the go to partake in illegal activities, most criminals still count on the dependable hard-line phone. The 1997 Wiretap Report reveals that 69 percent of all wiretaps authorized by courts were made on low-tech hard-line phones."425 This sweeping change in the law will make electronic communications privacy a thing of the past.

Telecommunications and privacy groups object to the increased surveillance, arguing that the FBI is overstepping its authority...In its review of CALEA, the FCC has restricted its inquiry to 11 FBI proposed modifications. Already, the FCC has decided that at least 4 of the 11 modifications overstep the existing CALEA law."426 The law gives the government unprecedented access to information, yet there is still pressure from law enforcement authorities to go even further. Fortunately, there are still independent thinkers at the FCC who understand the law and are not afraid to evaluate requests in light of the law.

One arm of the surveillance matrix includes an organization which draws very little attention. "The secret Foreign Intelligence Surveillance Court approved 576 government applications for domestic electronic surveillance of suspected foreign agents last year under the Foreign Intelligence Surveillance Act (FISA) of 1978, up from 509 approvals in 1993, according to annual reports obtained by S&GB from the Justice Department under the Freedom of Information Act. The integrity of the little-known FIS Court and its ability as an oversight body have been called into question because of the Court's failure to ever deny a single application for electronic surveillance."427

Several systems have been designed to improve the flow of information to police. One of these systems was brought on line in 1995. "The long-awaited upgrade of the National Crime Information Center, a 21-year-old online law-enforcement database maintained by the FBI, was completed Monday at a cost of \$106.2 million. The upgraded system, NCIC 2000, can handle mugshots and fingerprints, in addition to the textual information previously available for the system's nearly 39 million records. Sun Prairie, Wisconsin, police chief Frank Sleeter estimates a \$2,000 retrofitting cost for each patrol car to include NCIC 2000 equipment, including digital cameras and fingerprint scanners. The upgrade was originally slated to debut in 1995 at a cost of \$77 million."428

Each of these issues is significant when considered alone. However, when considered together, the magnitude of the surveillance capability of the United States goes far beyond any normal person's wildest dreams - and the revelations continue.

15. *Magnum*, Richard. "Billing a Smaller Bullet on Wiretap Costs." *Sheriff*, Nov/Dec 1998, Vol. 50, No. 6. Source: NLETC Law Enforcement & Technology News Summary, Jan. 21, 1999. EPI1044
16. Radtall, Deborah. "Crime in the 21st Century." *InfoWorld*, Dec. 14, 1998, Vol. 20, No. 50. Source: NLETC Law Enforcement & Technology News Summary, Dec. 31, 1998. EPI1049
17. *Security & Government Bulletin*. "Secret Court Increased Surveillance in 1994." Issue No. 52, Mar. 1995. EPI869
18. Fields, Gary. "Upgraded database to Aid Patrol Officers." *USA Today*, July 12, 1999. Source: NLETC Law Enforcement & Technology News Summary, July 15, 1999. EPI927

helicopter pilots to keep a far distance between their vehicle and the subject, proprietary gimbal technology that offers picture balance stability good enough to enable chopper pilots to maintain faster speeds while filming, and a versatile digital control system."441 Another version of this camera genre includes cameras that "work much like night-vision goggles, detecting differences in temperature and translating them into a picture that appears on a small screen. Hot objects show up as white, while cold objects are dark."442 In yet one more version of specialized cameras one can "see through walls." "The RADAR flashlight was designed to detect the respiration of a human subject behind a wall, door or an enclosed space with non-conductive walls. The use of the system as a foliage penetration radar has also been explored."443

Enhanced imaging for law enforcement surveillance cameras is a powerful addition to their capabilities. Through technology transfers incredible possibilities now exist in this area. "Using satellite surveillance and industrial imaging technology, scientists at Oak Ridge National Laboratory have developed a tool that enhances images captured by a security camera. By employing algorithms, the new device - Video Imaging Tool for Aiding Law Enforcement (Vitale) - increases pixels by combining elements from two closely related frames, taking certain features from one to enhance the other, thereby increasing overall clarity. A computer using technology designed for automated inspection of semiconductors compares multiple images for minute changes. Vitale-enhanced camera images enables law enforcement officials and security personnel to obtain more evidence from surveillance cameras."444

Cameras in jails are standard in many places. They can protect both security personnel and prisoners. The call for cameras in such places are in fact a very good use of the tools and can create safer environments for those working and those incarcerated in these places. As an example, "The Nassau County District Attorney urged the County legislature to install video cameras in the jail on Thursday, after an inmate serving a 90-day term for a traffic violation was beaten to death on Jan. 7. Thomas Pizuto, 38, a recovering heroin addict, was Methadone the day after his sentence began. Law enforcement officials confirmed that guards forced Pizuto to sign a statement saying his injuries were accidental. Federal Agents and prosecutors are investigating the death."445 Uses could include daycare facilities and

441. *Business Wire*, "FLIR Systems Launches Breakthrough Airborne Camera for Law Enforcement Market", Feb. 16, 1999. Source: NLECTC Law Enforcement & Technology News Summary, Feb. 16, 1999. EPI1024
 442. Komarnitsky, S.J. "Thermal camera aids firefighters." *Anchorage Daily News*, Aug. 28, 1998. P1005
 443. Graneker, Eugene F. "Radar Flashlight For Through-The-Wall Detection of Humans (abstract)." *Star Systems Division, Surface Systems Branch, Sensors and Electromagnetic Applications Laboratory, Georgia Tech Research Institute, Georgia Institute of Technology*. EPI125
 444. Schlesinger, Hank. "Souped-Up Security Cam." *Popular Science*, May 1999, Vol. 254, No. 5. Source: NLECTC Law Enforcement & Technology News Summary, May 20, 1999. EPI969
 445. *New York Times*. "Video Cameras Are Sought for Jail Where Inmate Died." Jan. 29, 1999. Source: NLECTC Law Enforcement & Technology News Summary, Feb. 4, 1999. EPI1036

hair."438 The advance of camera use in Britain was so rapid that there was little or no debate until it was already widespread. Britain may become the first fully camera-monitored country in the world and should be viewed as a bad example of public policy being shaped by technology rather than technology being used to enforce democratic values. The United States, Canada, Germany, France and every country should begin to examine the questions of surveillance now, before the technology overruns us. Whether, when and where these technologies should be used must be debated in the face of the array of technology now available.

"A compact (less than one-tenth cubic inch) covert camera with digital data capture is proposed to satisfy military, DEA, and FBI surveillance requirements...Anticipated Military Benefits/Potential Commercial applications of the Research or Development: The camera can be carried covertly by law enforcement officers or employed in rooms, parcels, luggage or vehicles. The FBI has an airport surveillance requirement. Military special operating forces have many relevant applications and will be the primary performance drivers."439 This camera will allow for the monitoring of huge areas because their cost will be cheap when mass produced. This type of camera was predicted years ago by military think tanks and would allow the policing of countries from border-to-border. Such systems can be monitored from anywhere in the world at very little cost. "According to C-Phone, the Sentinel provides highly reliable, worldwide, real-time remote video and audio within a user-friendly configuration. The Sentinel is a stand-alone device that operates over analog or ISDN phone lines and connects with either a PC or TV for remote viewing. An infrared remote control and on-screen menus facilitate the simple operation of the Sentinel, while a serial port enables both local and remote control through the use of other hardware or a variety of software applications. The recent addition of Internet/IP connectivity removes the assessment of long distance phone charges on communication between surveillance headquarters and sites being monitored."440 This kind of technology combined with others could be used in creating the ultimate "Big Brother" and will likely evolve to this point through the zeal of fear-based security planning, moving from war zones and high crime areas to everyone's neighborhoods.

Miniaturization, coupled with thermal imaging, offers even greater possibilities. "Airborne cameras and thermal imaging company FLIR Systems plans to unveil a state-of-the-art new airport camera system - called the UltraMedia LE - designed for law enforcement. Some of the features of the new camera system include super low light requirements that allow video color clearly to be captured even during nighttime, long-range optics that permit

438. *Futurist*. "Cameras See Through Digital Disguises." Jan. 1999. Vol. 33, No. 1. Source: NLECTC Law Enforcement & Technology News Summary, Feb. 11, 1999. EPI1032
 439. InVine Sensors Corp. "Covert Compact Camera." *Toplec DARPA 95-005*. EPI1192
 440. *Business Wire*. "C-Phone Introduces Sentinel Video Surveillance System." March 12, 1999. Source: NLECTC Law Enforcement & Technology News Summary, March 18, 1999. EPI1001

school rooms with entry codes held by supervisors, parents and others with access needs. Perhaps the public needs to install surveillance systems to keep track of government operations and keep them accountable to the public they serve?

Another helpful use of this technology involves the use of cameras when apprehending criminals. "Beginning as a foolproof method to establish probable cause in traffic stops, video in patrol cars has become a standard feature, perhaps to the point of creating liability in its absence. Also, a portable system available through Video Systems Plus allows the law enforcement officer to detach the camera to film away from the patrol car." 446 "The Cook County, Ill., sheriff's department has announced it will expand its pilot video program to include 12 squad cars and will later apply for federal grants to equip 50 to 75 more cars. Harrison said the cameras, capable of recording audio from 1,000 feet with a personal microphone, are particularly helpful with drunk driving prosecutions." 447

Speeders and red light runners are the subject of totally remote photo-ticket issuing systems. In many communities these are accepted with minimal debate while in others they are hotly contested. An attempt to institute electronic speed traps around school zones was made in Anchorage, Alaska, and was perceived as "smacking of big brother." It was fought in the courts and in several public forums where it was defeated and removed. Politicians involved in the issue learned by the public outcry that "big-brother" had its limits. In other areas these technologies are readily integrated without significant public attention. "A 40-camera system, introduced by the Beverly, Mass. manufacturer EDS, will be installed in Baltimore County, MD., as a way to deter drivers who run red lights. The county under a one-year contract, is trying to make highway intersections safe, while not charging taxpayers for the technology." 448 "As the growing number of communities already have implemented red light photo enforcement programs or are planning to install them, it is to prevent red light running...The agencies that will manage these programs must choose a publicity campaign determined by the program's motivation: does the municipality want to deter red light running or catch and penalize those who commit the transgression? Also, while the IIHS reports that 66 percent of Americans polled favor photo enforcement, the other third of the population could favor vocally complain, and a strategy must be developed to handle this situation." 449 Think about that ... for a moment.

446. **Paynter, Ronnie L.** "Patrol Car Video," *Law Enforcement Technology*, June, 1999, Vol. 26, No. 6. Source: NLETC Law Enforcement & Technology News Summary, July 1999, EP1937
447. **O'Brien, Cook** Sheriff's Police to Expand Videotaping," *Chicago Tribune Online*, Aug. 8, 1999. Source: NLETC Law Enforcement & Corrections Technology News Summary, Aug. 12, 1999, EP1904
448. **PR Newswire**, "Ballimore County Selects EDS for Red-Light Camera Program," *Six Months Jurisdictions Will Use EDS System to Make Streets Safer*, July 22, 1999. EP1924
449. **Sheriff**, "You Oughta Be in Pictures: Red Light Photo Enforcement," *Jan/Feb 1999*, Vol. 11, No. 44. Source: NLETC Law Enforcement & Technology News Summary, Feb. 25, 1999, EP11022

Eyes in the Sky

Eyes in the sky are being introduced in a number of areas with very different requirements for surveillance assistance. "...The grueling geographic challenges of Pima County have motivated Sheriff Dupnik to begin testing yet another CTAC-sponsored technology: a remotely controlled, unpiloted aircraft not much bigger than a model airplane...equipped with a live video camera and transmitter. It is designed for undetected surveillance of drug dealers who often take to the wide open spaces to defend against routine surveillance by cops in cars." 450 This use gives a limited number of officers a greatly enhanced ability to monitor rural areas and boarder regions. "NASA and the U.S. Army have developed a remote-controlled helicopter that could be used for a wide range of tasks, including precision crop spraying, border patrol, hazardous spill inspection, fire surveillance, crowd security and emergency medical delivery." 451 This technology represents another significant military technology transfer area.

On another scale, the technology for local policing is moving into outer space. "Astronauts pointing a HERCULES unit out of a space shuttle window can take a high-resolution picture of a house at a specific street address. The HERCULES unit is capable of taking video and still pictures at night with a resolution of less than 10 meters." 452 The idea that the space program would get involved in these areas was well beyond anyone's expectations of what going to the moon would result in, but here it is. "NASA IG Roberta Gross said in a November 3, 1998 interview that lawyers and special investigators have been considering the use of satellite imagery to identify and prosecute crimes, as well as enforce contractor compliance. Investigations would compare historical data with the satellite imagery, enabling forensic scientists to detect a change in soil composition or vegetation in a suspect area. Gross wants NASA to lead an inter-agency effort to use space-based remote sensing platforms to fight crime; the agency already uses remote sensing devices on airplanes, as well as hand-held devices." 453 Who ever thought that NASA would be involved in "crime fighting?" "And there are even more sophisticated and powerful eyes in the sky - blitted not at the outer cosmos, but toward Earth. Their pictures are only if ever seen by the public, and very little is ever revealed about the billion dollar orbiting spy gear that regularly looks in on the street affairs of various nations." 454 In September 1999, "the first commercial satellite capable of taking pictures approaching the detail

450. **CTAC**, *Advanced Surveillance & Wiretap Technologies*.
www.whitelousesdrugpolicy.gov/ciac/page13.htm EP1904
451. **USA Press Release**, *Robotic Helicopter May Offer New Option For Public Safety*.
www.robotbooks.com/robot-helicopter.htm EP11103
452. **Phuc, Chen**, *Army Imager Flashes In Test from Space*. *Defense News*, July 24-30, 1995.
453. **Phuc, Brian**, *NASA Explores Using Crime-Fighting Satellites*. *Federal Times*, Dec. 7, 1998, Vol. 11, No. 44. Source: NLETC Law Enforcement & Technology News Summary, Dec. 28, 1998, EP11055
454. **Malmarco, Fred**, *The Secret World of Spy Satellites*. *Popular Science*, April 1997. EP1821

functions is commercially available." 486 This is the first step in most electronic monitoring systems. It is expected that the loss of these cards will lead to breaches of security which will create the arguments the military will eventually present in favor of increased uses of biometric devices including the possibility of body implanted devices.

"Correctional facilities around the country are bolstering security with biometrics. Such places are using the high-tech systems to scan body parts or behaviors that are unique to an individual. David Panisar, legal counsel for the Electronic Privacy Information Center, warns of the day when employers will scan the retinas of job candidates to ascertain criminal history." 487 The use of these systems for employees is not in the distant future and again demonstrates how systems designed for criminals will eventually be used on the entire population. "Barry Babler, a special agent in the FBI's Milwaukee office, says that in the near future officers will be able to check a criminal's background and outstanding arrest warrants in as little as 10 minutes. Chris Ahmuty, the American Civil Liberties Union executive director for Wisconsin, believes the technology can be used to exonerate innocent suspects more rapidly... but should not be abused by officers, which means strong regulations need to be put in place." 488 Where are the regulations that experts in privacy and civil rights are demanding? The only changes in the law we have seen require increasing segments of the population to be invaded by the new technology rather than limiting its use. First these technologies are used to contain the villains, then the poor and, after that, the rest of the population. Such is the creeping pattern of tyranny in the surveillance society.

The poor in one state are now being expected to give up aspects of their personal privacy in order to obtain welfare funds so they can buy food and the basics of life. Again, the motivation is for security in separating criminals from ordinary citizens. "The Connecticut Department of Social Services (DSS) is among several state welfare agencies, departments of motor vehicles, and military groups using a \$5.2 million biometrics-base fraud prevention system. It uses a Identix Inc. fingerprint capture device - which goes for \$2,200 - that recalls a person's face on-screen from a database... Researchers at DSS say 11 states have adopted biometrics in their social service programs." 489

Internet Control

The control and regulation of the Internet is the result of the government's fear of identity theft, terrorists, drug dealers, hackers and computer coding (encryption), which keeps the government out

1139
1. Beiser, Vince. "Biometrics Break Into Prisons." *Wired Online*, Aug. 21, 1999. NLECTC Law Enforcement & Corrections Technology News Summary, Aug. 26, 1999. EPI889.
2. Burnett, James H. III. "System Lets Police Check Prints Quickly with FBI." Aug. 10, 1999. Source: NLECTC Law Enforcement & Corrections Technology News Summary, Aug. 12, 1999.
3. Redcliff, Deborah. "Busted!" *Computerworld*, Dec. 14, 1998. Vol. 32, No. 50. Source: NLECTC Law Enforcement & Technology News Summary, Dec. 31, 1998. EPI1050

disturbed surfaces, hidden compartments, and environmental and officer safety." 482 "Indeed: A security system consisting of an infrared camera and a computer is now using the heat patterns emitted by facial blood vessels to identify people quickly and precisely. Developed by Technology Recognition Systems of Alexandria, Virginia, the system's camera takes a picture of the heat radiating from a person's face. The computer then compares this picture, called a thermogram, with an earlier image stored in its memory." 483 This is another technology which will likely be integrated with several of those described in this book. Thermal imaging is already in field use in a number of areas across the country.

Voice Recognition

A new device was patented which will allow for the manipulation and storage of voice patterns. This system will provide a way to create a synthetic voice which sounds natural but is altered in order to hide the person's real voice and take on a new identity. The device is described as, "An apparatus for transforming a voice signal having characteristics of a different person provides apparatus for separating the talker's voice into a plurality of voice parameters including frequency components, a neural network for transforming at least some of the separated frequency components into those characteristic of the different person, and apparatus for combining the voice parameters for reconstituting the talker's voice signal having characteristics of the different person." 484

Voice recognition is also being used in law enforcement. "The Dane County, Wisconsin, Sheriff's Office says its program to monitor non-violent offenders using SpeakerID voice verification from SecurityLink has saved \$2.8 million since 1994. SpeakerID tracks the activity of offenders via random calls to their home or work. Offenders must repeat a series of number pairs during the call while the computer compares their speech pattern to a digitized voice print. Experts say the voice verification program accurately differentiates between twins and will even identify a voice that is affected by a cold." 485

Regulation and Control

"The Defense Department's Smart Card Office is expected to recommend later this summer that all military identification cards be replaced with smart cards. Smart cards have the potential to replace not only military ID cards, but also government driver's licenses, weapons cards, library cards, meal cards and others, Neal said. What makes smart cards attractive is that 'the technology for most DOD 482. Paynter, Ronnie. "Images in the Night." *Law Enforcement Technology*, May 1999, Vol. LXVI, No. 5. Source: NLECTC Law Enforcement & Technology News Summary, Sept. 1995. EPI1101
483. Stover, Dawn. "In Your Face." *Popular Science*, Sept. 1995. EPI1101
484. US Patent #5,425,130, June 13, 1995. Apparatus For Transforming Voice Using Neural Networks. Inventor: Morgan, David P. Assignee: Lockheed Sanders Inc. EPI795
485. Meier, Ed. "Phoning It In." *Corrections Technology & Management*, Jan/Feb 1999, Vol. 3, No. 1. Source: NLECTC Law Enforcement & Technology News Summary, Feb. 18, 1999. EPI1027

of a persons communications. "The increasing use of electronic records from credit card transactions over the Internet to electronic medical records gives identity thieves more and more opportunities to claim victims."⁴⁹⁰ Another development is the issuing of a specialized "chip" which allows easy access to information which communicators wish to keep private. "The chip is being launched as privacy advocates are organizing a boycott of it. They object to a feature that allows the chip to send an identification code over the Internet, arguing that it could allow operators of web sites to easily track and trace consumers."⁴⁹¹ One of the things about using the Internet is that many people do not want to give information on who they are until they are ready for two-way communication or a purchase. The tracking of on-line shoppers is analogous to providing a name and mailing address in order to get into a store and "window shop" or into a library to read a book. How long would stores stay in business if they were intruding in this way? How would a person feel if the information was used to send piles of junk mail, or sold to telemarketers and door-to-door salespeople?

Pornography on the Internet is a problem, particularly child pornographers and the assortment of perverts preying on children. "Sgt. Joe Duke, and Oakland County, Michigan, sheriff's detective, part of one of the ever-growing departments fighting child pornography on the Internet. These detectives often spend hours online portraying young children to catch pedophiles."⁴⁹² The use of Internet police will increase as human activity increases on the Internet. However, it should be recognized that people are not electronic, they are real people who are all entitled to both protection from electronic stalking or random government intrusions without cause. In protecting children we must be aggressive while at the same time making sure we are respecting our Constitutional safeguards. These are not easy things to accomplish - the balance needs to be found with civil libertarians, politicians, the public and police seeking a real solution together.

"Cookies" are a coding system built into computers to identify who a user is. What happens is that when visiting locations on the Internet, an electronic message is left which can be followed back to your home location. After your address is located, the electronic junk mail begins to flow your way. "People feel that on the Internet they're fairly anonymous, but cookies are one of the ways that are whitening down that anonymity," says Ethan Preston, a legal researcher for the Electronic Privacy Information Center, Washington, D.C.⁴⁹³

⁴⁹⁰ VJP, Pamaria, "Identity Theft: One of country's fastest-growing crimes." *Anchorage Daily News*, Oct. 25, 1999. EP1375
⁴⁹¹ Zeman, David, "Niel Unwraps New Chip." *Anchorage Daily News*, Feb. 2, 1999. EP198
⁴⁹² Zeman, David, "More Cops are Policing Cyberspace in Hunt for Pedophiles." *Denial Free*, Online, July 20, 1999. Source: NLECTC Law Enforcement & Technology News Summary, July 21, 1999. EP1920
⁴⁹³ Suiel, Seth, "Cookies don't have to crumble Internet privacy walls." *Anchorage Daily News*, Oct. 31, 1999. EP1189

Encryption & Security

Encryption, or the coding of information, is as old as human communication. Hiding information by coding is a person's right and the way business is done on the Internet. Love letters, medical records, financial information and other communications on the Internet are susceptible to being intercepted by many different kinds of people with unknown motives. Coding information is like the sealing of an envelope before mailing, but now that envelope is electronic.

"Illegal activity on the Internet increases as the number of people using the Web increases, concludes a three-year study from the UK National Criminal Intelligence Services (NCIS). NCIS says crimes being committed on the Internet include pedophilia, pornography, hacking, fraud, and software piracy, as well as use by criminals for secure communications. Britain's trade and Industry Select Committee says a national computer crime organization, similar to London Metropolitan Police computer crime unit, is necessary to combat criminals who might use encryption to commit crimes."⁴⁹⁴ What else could a person expect? As cities grow, crime increases, so why would it be any different for electronic communities? The motivation behind such studies is to create larger budgets for policing organizations and as a way to justify the violation of civil rights.

"Rep. Bob Goodlatte (R-VA), chief sponsor of the Security and Freedom Through Encryption Act (SAFE), says the legislation, which would lax U.S. encryption export rules, has a good chance of passing this year. Law enforcement groups and the FBI have expressed concern over the export of strong encryption, fearing it would facilitate terrorists and criminals. But SAFE's main goal is to prevent electronic crime, Goodlatte said, by providing a level of confidentiality."⁴⁹⁵ "One Capitol Hill staffer had some concerns. 'I think they are really trying to hobble how people use encryption,' said Ellen Stroud, spokeswoman for Rep. Bob Goodlatte (R-VA), sponsor of the Security and Freedom Through Encryption Act, which would relax controls on the export of encryption and prohibit the government from requiring a back door into people's e-mail and computer files."⁴⁹⁶ This law is an attempt to find a balance between protection and privacy. In most of these cases, law enforcement attempts to restrict privacy, while others fight to secure it. These issues also extend beyond the United States, as the Internet is the most "globalized" technology on the planet. By 1999, the necessity of privacy for electronic, and, what people now call "snail mail" (regular postal mail), is finally being recognized and the laws changed. "Although international encryption policies are restrictive and outdated, these policies may be relaxed or made obsolete in the

⁴⁹⁴ NLECTC CHRS, "Net Crime prompts Cyber Squad Call." *BBC News Online*, June 26, 1999.
⁴⁹⁵ Source: NLECTC Law Enforcement & Technology News Summary, June 24, 1999. EP1940
⁴⁹⁶ Ms. Mosquera, Mary, "SAFE Encryption Bill Re-introduced." *TechWeb*, Feb. 25, 1999. Source: NLECTC Law Enforcement & Technology News Summary, March 4, 1999. EP1014
⁴⁹⁷ Mr. Brown, Doug and Tillet, L. Scott. "Bill reopens encryption access debate." *Federal Computer Week*, Aug. 16, 1999. EP1856

Roving Wiretaps

"In a closed-door maneuver, controversial 'roving wiretap' provisions were added to the Intelligence authorization bill and passed by Congress. Previously, the federal wiretapping law allowed roving taps only under very strict limits. The new provisions dramatically expanded that authority by allowing taps on any phone whose phone it 'proximate' to, the person being tapped, no matter whose phone it is." 518 What this means is that entire areas could be secured and tapped. Using voice recognition software, sophisticated computers could immediately record conversations over the entire area. As this combination of technologies advances, it will be used globally. The idea of "proximate" is changing as the technology advances and its real meaning may soon extend to all global communications. In fact, the evidence thus far presented indicates that the technology computing power and political will already exists for a global communications monitoring system which will violate the rights of all people equally - a much different view of what the phrase "equal protection under the law" really means.

"In Pima County, Arizona, the Sheriff's Department, in partnership with CTAC, installed and adapted Borderline, a system that makes court ordered wiretap much more effective. In a state-of-the-art facility funded by HIDTA, the High Intensity Drug Trafficking Area program, wiretaps from all over the huge county are digitally recorded and transcribed, making them digitally accessible for rapid search and retrieval." 519 The area networks are already in place and the combination already being used in various regions of the world. "So-called roving wiretaps work through a digital switching system linked to voice analyzers that can record and identify a conversation instantly. The analyzer produces a numerical pattern of a suspect's voice. Then the switching system constantly scans outgoing phone lines for that pattern." 520

"In July 1992, we reported to Congress that law enforcement's ability to execute court-approved wiretaps was challenged by advanced telecommunications technologies. These discussions revealed that although some technological solutions have been developed to facilitate law enforcement agencies' wiretap efforts, other technology changes have made it more difficult for them to utilize traditional wiretap methods. Because the details of law enforcement agencies' problems and the specific technological challenges are classified, I cannot elaborate on them at the moment. S. 2375 specifies that the Attorney general, subject to the availability of appropriations, shall reimburse telecommunications carriers for reasonable costs incurred in carrying out the provisions of the bill, and details the

518. Center For Democracy & Technology. CDT's Counter-Terrorism Issues page. <http://www.cdf.org/policy/terrorism> EPI1555
519. ONDCP, CTAC. Advanced Surveillance & Wiretap Technologies. <http://www.whitehousedrugpolicy.gov/ciac/page13.htm> EPI1904
520. Johnson, Chip. "Techno-cops: Police Tools of the 90's Are Highly Advanced, But Privacy Lag." *Wall Street Journal*, Nov. 12, 1990. EPI118

nature of the costs that can be reimbursed...However, it is virtually impossible to precisely estimate the reimbursement costs discussed in this bill because costs will depend on evolving law enforcement requirements." 521 What? This means that all of the nation's telecommunications systems must provide a way for the government to intrude on a massive scale. These laws will allow many government agencies the ability to easily hack through the safeguards and illegally tap the phones of millions of people with or without court orders. Current events in the media certainly confirm that when the opportunity for government abuse is there it will be taken by those who forget the underlying mission of all government activity - to represent and protect the rights of citizens and uphold the law.

In other countries which remember the losses of freedom in recent history this issue has become very important. "The wiretapping law is similar to those in other countries. But many Japanese, remembering secret police brutality during World War II and crackdowns on radical students and labor unions in the 1950s and 1960s, have long been reluctant to hand police greater powers." 522 Recent memory of wholesale abuses by government should be the reminder we all need to insist on the security of the sacred trust between the government and those who are governed. Privacy rights are the foundation of that trust.

Echelon - Big Brother Goes Global

"Members of Congress, the European Parliament and civil liberties groups have begun to ask tough questions about the National Security Agency's interception of foreign telephone calls, faxes and electronic mail, the most intense scrutiny of NSA operations since the so-called Church committee probed the spy agency 24 years ago." 523 Echelon has become one of the biggest exposés of this century in terms of the most significant example of abuse of control ever instituted. This level of surveillance surpasses all of the combined efforts of our adversaries throughout history. "Moreover, the level of intrusion has reached new heights in recent years with the development by America's NSA of a secretive system called ECHELON, which has the capability of intercepting all the world's communications at any given time." 524 "Virtually invisible to the American Public, NSA runs the nation's most ambitious spying operation, eclipsing the Central Intelligence Agency in budget and personnel. Its operations cost nearly \$1 million an hour, \$8 billion a year. It oversees tens of thousands of eavesdroppers in listening posts from Alaska to Thailand, and with a Maryland work force of 20,000 is

521. GAO. "Electronic Surveillance: Technologies Continue To Pose Challenges." *GAO/IT-94-108*, Aug. 11, 1994. EPI1119
522. Coleman, Joseph. "Japan Arms Law Enforcement With Wiretapping Powers." *Anchorage Daily News*, Aug. 13, 1998, p. A-13. EPI1100.
523. Loeb, Vernon. "Critics Questioning NSA Reading Habits." *Washington Post*, Nov. 13, 1999. EPI210
524. Frost, Mike. "Big Brother Really Is Listening." *Anchorage Daily News*, Nov. 22, 1998. EPI102

- ex - ante discrimination and guilt prediction
- selective advertising
- inversion of the onus of proof
- covert operations
- unknown accusations and accusers
- denial of due process

b. Risks to society

- adversarial relationships
- focus of law enforcement on easily detectable and provable offenses
- inequitable application of the law
- decreased respect for the law and law enforcers
- reduction in meaningfulness of individual actions
- reduction in self-reliance and self-determination
- stultification of originality
- increased tendency to opt out of the official level of society
- weakening of society's moral fiber and cohesion
- destabilization of the strategic balance of power
- repressive potential for the totalitarian government"⁵²⁶

"While EU is aware that Echelon may be a useful tool for tracking down global terrorists, drug barons, and international criminals, Ford said the parliament is concerned that the system may also be used for espionage, spying on peaceful nations, or raising unfair economic advantage over non-member nations."⁵²⁷ Despite the European concerns about Echelon, they are creating their own tapping system in cooperation with the very nations that are violating their citizens communications. Is this the trend? To yell and scream and give the appearance of outrage and then make other agreements giving the same countries another ticket to the game? "Under the plan, Entopol 98, European telecommunication companies will be required to build tapping connection into their systems. Each EU country's 'interception Interface' must be capable of allowing its member states to tap communication throughout the EU. The US, Canada and Australia are likely to participate in the network, giving the FBI and other non-European security agencies access communications in Europe."⁵²⁸

"Echelon is NSA's cold war vintage global spying system which consists of a worldwide network of clandestine listening posts capable of intercepting electronic communications such as e-mail

telephone conversations, faxes, satellite transmissions, microwave links and fiber-optic communications traffic. However, the European Union last year raised concerns that the system may be regularly violating the privacy of law-abiding citizens."⁵²⁹ "Over the past 10 years, the Echelon system has been automated and many of the hundreds of thousands of listening operators formerly working in communication intelligence have been replaced. Interception and analysis is now done automatically, through global networks of computers that can sift unattended."⁵³⁰

The system was developed to share data between the United States, Great Britain, Canada, Australia and New Zealand after WWII. "Australia, one of five countries running the controversial Echelon global surveillance network, has become the first to admit it. The Australian government has confirmed that the system spies on the international communications of its own and other countries' citizens."⁵³¹ The concept was that since it was illegal to spy on one's own citizens participating countries would allow other countries to do it for them and then pass the information on to the country in control of the citizen that was spied on. This provided a way around the privacy laws which each nation had in place for its citizens. The net result was establishment of the largest spy network in the world, which now has the ability to intercept every form of electronic and telephonic communication, and sort the data by voice recognition, key words used or any number of other criteria. "The NSA patent, granted on 10 August, is for a system of automatic topic spotting and labeling of data. The patent officially confirms for the first time that the NSA has been working on ways of automatically analyzing human speech."⁵³² Once selected material is captured, the largest computers in the world sort the data and forward it to tens of thousands of intelligence organizational workers in the five countries for further analysis. The number of people required to do the work significantly drops as the technology advances. It is clear that when the full scope of advancing technologies is available, there will be nothing left of privacy, unless these trends are reversed and properly contained. The power of government has gone beyond the humanity of the planet and its people.

Unfortunately, the government which wants to keep track of all of our communications can not keep track of our money, or is it that they are so good at hiding the money that no one can find it? The National Reconnaissance Office, the secret agency that builds spy satellites, lost track of more than \$2 billion in classified money last year, largely because of its own internal secrecy, intelligence officials say. Critics of the reconnaissance office said Monday that the money

⁵²⁶ Vernon Dornier, "Congress, NSA but heads over Echelon," *Federal Computer Week*, June 3, 1996. EPI1139

⁵²⁷ Campbell, Duncan, "EC concern about US phone spies," *The Age*, Sept. 12, 1996. <http://nripaage.com.au/daily/960912/news/news29.html> EPI1465

⁵²⁸ Campbell, Duncan, "Australia first to admit 'we're part of global surveillance system,'" <http://www.haiese.de/dep/englist/halt/ve/2889/1.html> EPI794

⁵²⁹ Dreyfus, Suetette, "This is just between us (and the spies)," *Independent News*, Nov. 15, 1999. EPI1215

was hidden in several rainy-day accounts that secretly solidified into a 'slush fund.' 533 That's a lot of slush in that fund... What they are hiding is the truth, which is that these innovations are a greater threat to our democracy and freedom than any rogue nation with a "nuke" or any terrorist with a threat. These "intelligence" organizations supposedly protecting the free world have created systems to enslave us to their own warped version of freedom.

Fortunately, there are a few champions of freedom left in the world like European Parliament Member Glenn Ford of Great Britain and United States Representative Bob Barr. "That the National Security Agency intercepts American's missives is clear. I have a problem with what the program appears to be doing, and that is, invading the privacy of American citizens without any reason, any court order, without any reasonable cause, without any probable cause, almost a dragnet invasion of privacy," says Rep. Bob Barr, R-Georgia, one of the NSA's most outspoken critics." 534

Many over the years have found fault with the American Civil Liberties Union. However, it is important to remember that their only charge is to defend the Constitution and the Bill of Rights. We personally object to some of the cases they bring forward, but, in the end, judges decide, law is clarified and our governing documents are upheld. It is not always perfect, but it is a system which works. On this issue they have not been silent either, "The American Civil Liberties Union has focused its eye on an international electronic surveillance system that allegedly eyeballs regular citizens. The civil liberties watchdog launched Echelon Watch, a site designed to prompt governmental investigation... of a global electronic surveillance system said to be code-named 'Echelon.'" 535

The technology is still expanding and all the agencies are looking for skilled people to assist them in both their legitimate and illegitimate programs. These agencies, from the CIA to the FBI, and "Other members of America's covert intelligence community, including the National Security Agency, which conducts electronic eavesdropping around the world, and the Defense Intelligence Agency, which studies foreign military forces, also have gone public in the hunt for fresh faces." 536 They are recruiting from our colleges and universities the best minds they can get for the defense of freedom and, unfortunately, their other programs. We, the writers of this book, hope that people connected to this work will consider these words. We hope that during their careers, as they think about their mission, they will remember the mission of our forefathers when they laid their lives down for freedom. We can have security - but there is no security unless we have freedom, liberty and honor.

533. Weimer, Tim. "Spy agency finds big bucks in own coffers." *Anchorage Daily News*, Jan. 31, 1996, pp. A3. EPI326
534. Ruppe, David. "Big Brother is Listening." *ABCNEWS.com*, July 27, 1999. EPI272
535. Oakes, Chris. "ACLU to Spy on Echelon." *Wired News*, Nov. 17, 1999. EPI1224
536. Drogin, Bob. "CIA stakes out colleges for new recruits." *Anchorage Daily News*, Nov. 17, 1999. EPI1214

The problem of privacy extends beyond the government as well. We have allowed corporate cultures to create intrusive, inhumane environments for both customers and employees, treating both as common criminals rather than honest people. "Two-thirds of U.S. businesses eavesdrop on their employees in some fashion - on the phone, via videotape and through e-mail and Internet files - according to a 1999 survey by the American Management Association International." 537 So, a great deal must be done to reclaim a balance between those who would control and those who seek a small measure of privacy in an increasingly complex world.

European Perspectives on Surveillance

The news in the United States is often quite limited. O.J. Simpson, Bill Clinton and other scandalous figures dominate the news, to the exclusion of genuine information. The European perspective is an important one because their view is one from the vantage point of people who have been subjected to huge restrictions on freedom in recent decades. People who know repression understand what Americans have learned to take for granted. The time for all of us to pay attention is now. The European Parliament has the following to say in one of their reports:

'2. Developments in Surveillance Technology

Surveillance technology can be defined as devices or systems which can monitor, track and assess the movements of individuals, their property and other assets. Much of this technology is used to track the activities of dissidents, human rights activists, journalists, student leaders, minorities, trade union leaders and political opponents. A huge range of surveillance technologies has evolved, including night vision goggles; parabolic microphones to detect conversations over a kilometer away; laser versions, can pick up any conversation from a closed window in line of sight; the Danish Jai stroboscope camera can take hundreds of pictures in a matter of seconds and individually photograph all the participants in a demonstration or march; and the automatic vehicle recognition systems can track cars around a city via a Geographic Information System of maps.

New technologies which were originally conceived for the Defense and Intelligence sectors have after the cold war rapidly spread into the law enforcement and private sectors. It is one of the areas of technological advance, where outdated regulations have not kept pace with an accelerating pattern of abuses. Up until the 1960s, most surveillance was low-tech and expensive since it involved following suspects around from

537. Stevens, Liz. "Employer snooping's legal in most states." *Anchorage Daily News*, Nov. 15, 1999. EPI1121

place to place, using up to 6 people in teams of two working 3 eight hour shifts. All of the material and contacts gleaned had to be typed up and filed away with little prospect of rapidly cross checking. Even electronic surveillance was highly labor intensive. The East German police for example employed 500,000 secret informers, 10,000 of which were needed just to listen and transcribe citizens' phone calls.

By the 1980s, new forms of electronic surveillance were emerging and many of these were directed towards automation of communications interception. This trend was fueled in the US in the 1990s by accelerated government funding at the end of the cold war, with defense and intelligence agencies being refocused with new missions to justify their budgets, transferring their technologies to certain law enforcement applications such as anti-drug and anti-terror operations. In 1993, the US department of defense and the Justice department signed memoranda of understanding for 'Operations Other Than War and Law Enforcement' to facilitate joint development and sharing of technology. According to David Banisar of Privacy International, 'To counteract reductions in military contracts which began in the 1980's, computer and electronics companies are expanding into new markets - at home and abroad - with equipment originally developed for the military. Companies such as E Systems, Electronic Data Systems and Texas Instruments are selling advanced computer systems and surveillance equipment to state and local governments that use them for law enforcement, border control and Welfare administration. 'What the East German secret police could only dream of is rapidly becoming a reality in the free world.'

2.1 Closed Circuit Television (CCTV) Surveillance Networks: In fact the art of visual surveillance has dramatically changed over recent years. Of course police and intelligence officers still photograph demonstrations and individuals of interest but increasingly such images can be stored and searched. Ongoing processes of ultra-miniaturization mean that such devices can be made to be virtually undetectable and are open to abuse by both individuals, companies and official agencies.

2.2 Algorithmic Surveillance Systems: The revolution in urban surveillance will reach the next generation of control once reliable face recognition comes in. It will initially be introduced at stationary locations, like turnstiles, customs points, security gateways etc. to enable a standard full face recognition to take place.

Such surveillance systems raise significant issues of accountability, particularly when transferred to authoritarian regimes. The cameras used in Tiananmen Square were sold as advanced traffic control systems by Siemens Plessey. Yet after the 1989 massacre of students, there followed a witch hunt when the authorities tortured and interrogated thousands in an effort to ferret out the subversives. The Scoot surveillance system with USA made Pelco cameras were used to faithfully record the protests. The images were repeatedly broadcast over Chinese television offering a reward for information, with the result that nearly all the transgressors were identified. Again democratic accountability is only the criterion which distinguishes a modern traffic control system from an advanced dissident capture system. Foreign companies are exporting traffic control systems to Lhasa in Tibet, yet Lhasa does not as yet have any traffic control problems. The problem here may be a culpable lack of imagination.

2.3 Bugging and Tapping Devices: A wide range of bugging and tapping devices have been evolved to record conversations and to intercept telecommunications traffic. In recent years the widespread practice of illegal and legal interception of communications and the planting of 'bugs' has been an issue in many European states. However, planting illegal bugs is yesterday's technology. Modern snoopers can buy specially adapted lap top computers, and simply tune in to all the mobile phones active in the area by cursoring down to their number. The machine will even search for numbers 'of interest' to see if they are active. However, these bugs and taps pale into insignificance next to the national and international state run interceptions networks.

2.4 National & International Communications Interceptions Networks: The Interim Study set out in detail, the global surveillance systems which facilitate the mass supervision of all telecommunications including telephone, email and fax transmissions of private citizens, politicians, trade unionists and companies alike. There has been a shift in targeting in recent years. Instead of investigating crime (which is reactive) law enforcement agencies are increasingly tracking certain social classes and races of people living in red-lined areas before crime is committed - a form of preemptive policing deemed dataveillance which is based on military models of gathering huge quantities of low grade intelligence.

Without encryption, modern communications systems are virtually transparent to the advanced interceptions equipment which can be used to listen in. The Interim Study also explained how mobile phones have inbuilt monitoring and

tagging dimensions which can be accessed by police and intelligence agencies. For example the digital technology required to pinpoint mobile phone users from incoming calls, means that all mobile phone users in a country when activated, are mini-tracking devices, giving their owners whereabouts at any time and stored in the company's computer. For example Swiss police have secretly tracked the whereabouts of mobile phone users from the computer of the service provider Swisscom, which according [to] *SonntagsZeitung* had stored movements of more than a million subscribers down to a few hundred meters, and going back at least half a year.

However, of all the developments covered in the Interim Study, the section covering some of the constitutional and legal issues raised by the USA's National Security Agency's access and facility to intercept all European telecommunications caused the most concern. Whilst no one denied the role of such networks in anti-terrorist operations and countering illegal drug, money laundering and illicit arms deals, alarm was expressed about the scale of the foreign interceptions network identified in the Study and whether existing legislation, data protection and privacy safeguards in the Member States were sufficient to protect the confidentiality between EU citizens, corporations and those with third countries.

Since there has been a certain degree of confusion in subsequent press reports, it is worth clarifying some of the issues surrounding transatlantic electronic surveillance and providing a short history & update on developments since the Interim Study was published in January 1998. There are essentially two separate systems, namely:

(i) The UK/USA system comprising the activities of military intelligence agencies such as NSA-CIA in the USA subsuming GCHQ & M16 in the UK operating a system known as Echelon;

(ii) The EU-FBI system which is linked up to various law enforcement agencies such as the FBI, police, customs, immigration and internal security;

2.4.1 NSA Interception Of All EU Telecommunications: The Interim Study said that within Europe, all email, telephone and fax communications are routinely intercepted by the United States National Security Agency, transferring all target information from the European Mainland via the strategic hub of London then by satellite to Fort Meade in Maryland via the crucial hub at Menwith Hill in the North York Moors of the UK.

The Echelon system forms part of the UKUSA system but unlike many of the electronic spy systems developed during the cold war, Echelon is designed for primarily non-military targets: governments, organizations and businesses in virtually every country. The Echelon system works by indiscriminately intercepting very large quantities of communications and then siphoning out what is valuable using artificial intelligence aids like Memex to find key words. Five nations share the results with the US as the senior partner under the UKUSA agreement of 1948, Britain, Canada, New Zealand and Australia are very much acting as subordinate information servicers.

Each of the five centers supply 'dictionaries' to the other four of keywords, phrases, people and places to 'tag' and the tagged intercept is forwarded straight to the requesting country. Whilst there is much information gathered about potential terrorists, there is a lot of economic intelligence, notably intensive monitoring of all the countries participating in the GATT negotiations. But Hager found that by far the main priorities of this system continued to be military and political intelligence applicable to their wider interests.

Indeed since the Interim Study was published, journalists have alleged that Echelon has benefited US companies involved in arms deals, strengthened Washington's position in crucial World trade organization talks with Europe during a 1995 dispute with Japan over car part exports. According to the *Financial Mail* on Sunday, 'key words identified by US experts include the names of inter-governmental trade organizations and business consortia bidding against US companies. The word 'block' is on the list to identify communications about offshore oil in area where the seabed has yet to be divided up into exploration blocks'...It has also been suggested that in 1990 the US broke into secret negotiations and persuaded Indonesia that US giant AT&T be included in a multi-billion dollar telecoms deal that at one point was going entirely to Japan's NEC.

2.4.4 EU-FBI Global Telecommunications Surveillance System: In February 1997, *Statewatch* reported that the EU had secretly agreed to set up an international telephone tapping network via a secret network of committees established under the 'third pillar' of the Maastricht Treaty covering co-operation on law and order. Key points of the plan are outlined in a memorandum of understanding, signed by EU states in 1995. (ENFOPOL 112 1003795 25.10.95) which remains classified. According to a *Guardian* report (25.2.97) it reflects concern among European Intelligence agencies that modern technology will prevent them from tapping private communications. 'EU countries it says, should

agree on international interception standards set at a level that would ensure encoding or scrambled words can be broken down by government agencies.' Official reports say that EU governments agreed to co-operate closely with the FBI in Washington. Yet earlier minutes of these meetings suggest that the original initiative came from Washington. According to *Statewatch*, network and service providers in the EU will be obliged to install 'tappable' systems and to place under surveillance any person or group when served with an interception order.

These plans have never been referred to any European government for scrutiny, nor to the Civil Liberties Committee of the European Parliament, despite the clear civil liberties issues raised by such an unaccountable system. The decision to go ahead was simply agreed in secret by 'written procedure' through an exchange of telexes between the 15 EU governments. We are told by *Statewatch* that the EU-FBI Global surveillance plan was now being developed 'outside the third pillar'. In practical terms this means that the plan is being developed by a group of twenty countries – the then 15 EU member countries plus the USA, Canada, Norway and New Zealand. This group of 20 is not accountable through the Council of Justice and Home Affairs Ministers or to the European Parliament or national parliaments. Nothing is said about finance of this system but a report produced by the German government estimates that the mobile phone part of the package alone will cost 4 billion D-marks.

Statewatch concludes that 'It is the interface of the Echelon system and its potential development on phone calls combined with the standardization of tappable communications centers and equipment being sponsored by the EU and the USA which presents a truly global threat over which there are no legal or democratic controls.' (Press release 25.2.97) In many respects what we are witnessing here are meetings of operatives on a new global-intelligence state. It is very difficult for anyone to get a full picture of what is being decided at the executive meetings setting this 'Transatlantic agenda.' Whilst *Statewatch* won a ruling from the Ombudsman for access on the grounds that the Council of Ministers 'misapplied the code of access', for the time being such access to the agendas have been denied. Without such access, we are left with 'black box decision making'. The eloquence of the unprecedented Commission statement on Echelon and Transatlantic relations scheduled for the 16th of September, is likely to be as much about what is left out as it is about what is said for public consumption. Members of the European Parliament may wish to consider the following policy options:

2.5 Policy Options:

(i) That a more detailed series of studies should be commissioned on the social, political, commercial and constitutional implications of the global electronic surveillance networks outlined in this Study, with a view to holding a series of expert hearings to inform future EU civil liberties policy. These studies might cover:

- a. The constitutional issues raised by the facility of the US National Security Agency (NSA) to intercept all European telecommunications, particularly those legal commitments made by member states in regard to the Maastricht Treaty and the whole question of the use of this network for automated political and commercial espionage.
- b. The social and political implications of the FBI-EU global surveillance system, its growing access to new telecommunications mediums including e-mail and its ongoing expansion into new countries together with any related financial and constitutional issues.
- c. The structure, role and remit of an EU wide oversight body, independent from the European parliament, which might be set up to oversee and audit the activities of all bodies engaged in intercepting telecommunications made within Europe;

(ii) The European Parliament has the option of urging rejection of proposals from the United States for making private messages via the global communications network (Internet) accessible to US intelligence agencies. Nor should the Parliament agree to new expensive encryption controls without a wide ranging debate within the EU on the implications of such measures. These encompass the civil and human rights of European citizens and the commercial rights of companies to operate within the law, without unwarranted surveillance by intelligence agencies operating in conjunction with multinational competitors." 338

You Might Do It Again – Jail Forever

What is happening here? I truly understand the feelings of people when it comes to victimization of children, having five of my own and coming from a large family. Even in prisons, these predators of the innocent are beaten and isolated for their crimes by their fellow prisoners who have the self-respect to know – we must not violate children. However, "In a 5-4 decision, the justices said that communities could go much further than they do in Arizona, keeping sexual predators locked up even after they have served their sentences

338: The European Parliament: An Appraisal of The Technologies of Political Control. STOA Intern Study, Updated Executive Summary, Sept. 1998. EP1250
<http://www.europarl.eu.int/dg/af/af/af/publ/168498/afexecsum.htm#text1> EP1250

is automatic payments. "Customers who come to a payment center once a week get a six-digit code when they pay their bills. They punch in the code on the keypad and if it matches the proper code, the light turns green and the car can be started. If more than a week passes without a new code, the light stays red, a buzzer sounds and the car won't start."⁵⁴⁴ What if you live in Alaska, where we do, and your car stalled at 40 below zero? We need to think ahead of our technology. Because technology gives us new things does not make them either good, right or truly useful when everyone's interest is considered.

Remote Body Surveillance

Now even the body can be monitored at a distance. A new technology was recently patented which is described as follows:

"An apparatus for measuring simultaneous physiological parameters such as heart rate and respiration without physically connecting electrodes or other sensors to the body. A beam of frequency modulated continuous wave radio frequency energy is directed towards the body of a subject. The reflected signal contains phase information representing the movement of the surface of the body, from which respiration and heartbeat information can be obtained. The reflected phase modulated energy is received and demodulated by the apparatus using quadrature detection."⁵⁴⁵

Looking into your toilet and house are one in the same for the new technology mix. It is funny that toilets are one of the top targets of law enforcement when raiding a house. "Today, police here are able to use the CTAC-developed Data Locator System to check connected government agencies' public documents for information on suspect locations and persons. Burlington police lieutenant Darren Grimshaw directed the planning of the drug house raid pictured here and made routine use of the Data Locator. 'As a result we knew the number of rooms and the number of toilets in the place and were able to make sure we had officers assigned to hit those locations so fast that it was impossible for the suspects to flush the evidence.'"⁵⁴⁶

DNA Dog Tag

"Computers and information technology may be bringing average people increased comfort and convenience, but they are also quickly making the concept of privacy extinct. Although many believe that the greatest threat to privacy is the media, the real culprit is the long line of recorded transactions that occur every time a

⁵⁴⁴ Hyde, Justin. "No pay, no start." *Anchorage Daily News*, Aug 14, 1999. EPI1143
⁵⁴⁵ US Patent #4,958,636, Sept. 25, 1990. Non-Contact Vital Signs Monitor. Inventors: Sharpe et al. Assignee: Georgia Tech Research Corporation. EPI1126
⁵⁴⁶ ONDCP, CTAC. Brownsville, Texas and Burlington, Iowa: "Tech Transfer Stories from the Mean Streets." <http://www.whitehouse-drugpolicy.gov/ctac/page14.htm> EPI1301

purchase, phone call, or email is made or written. Not only is there a record of most everything we currently do available to employers, law enforcement, and government, but there will soon be a record of who we are. America, Britain, Canada, and Australia are all in the process of starting national DNA databases of convicted criminals; however, most analysts believe this will slip over into the general population as the desire to make crime virtually obsolete is too strong for any government to ignore. On that note, the article says that tiny, powerful microphones and video cameras already have the capability to conduct surveillance at any location at any time. Video cameras are already filming public streets in most large cities, and the field of biometrics allows for an inexpensive and fool-proof method of personal identification from virtually any measurable physical characteristic, such as a person's eyeballs. Market solutions such as infomediaries (companies that protect consumer privacy by brokering information between a person and various companies) and encryption will not be enough to stop widespread surveillance and government databases. There will be no one solution to reverse the slow death of privacy, as technology is most likely too powerful and widespread to save the already decaying concept of being left alone."⁵⁴⁷

Sworn to uphold the law, "The leadership of a worldwide association of police agencies has called for collecting DNA samples from all crime suspects when they are arrested. The International Association of Chiefs of Police unanimously endorsed a resolution calling on the federal and state governments to pass broad DNA collection plans."⁵⁴⁸ Suspects? What will happen when mass arrests of government protesters occurs or when suspects are found to be innocent? What happened to the presumption of innocence? Should law enforcement be permitted this intrusion into a person's body without consent? "The International Association of Chiefs of Police's (IACP) executive committee has voted unanimously to approve New York City police commissioner Howard Safir's resolution, which calls for states and the federal government to fund DNA sampling of criminal suspects upon first arrest, much in the same vein that arrestees are fingerprinted. At the moment, the FBI coordinates a DNA sample database contributed to by 14 states, but sampling is done on a state-by-state basis, and generally only from those individuals convicted of crimes."^{549,550} It seems that government never stops attempting to establish a state control of everyone through invasive means or by any means which are possible for technology. In 1999 a new bill was introduced in Congress to provide "over US\$45 million in federal funds to spur police into taking more DNA samples and using them in criminal investigations. The FBI in late 1998 finished constructing a

⁵⁴⁷ *Economist*, "The Surveillance Society," May 1, 1999 Vol. 351, No. 8117. Source: NLECTC Law Enforcement & Technology News Summary, May 13, 1999. EPI973
⁵⁴⁸ *New York Times*. "Police association joins in call for earlier DNA sampling." *Anchorage Daily News*, Aug. 16, 1998. EPI201
⁵⁴⁹ Chen, Hans H. "Police Chiefs Call for DNA Testing." *MSNBC Online*, Aug. 18, 1999. Source: NLECTC Law Enforcement & Corrections Technology News Summary, Aug. 26, 1999. EPI890
⁵⁵⁰ Commonweath Biotechnologies, Inc. "Genetic and CODIS Identify Analyses." <http://www.cb-biotech.com/genetic.htm> EPI1221

massive database with about a million entries..."⁵⁵¹

In 1999, "As a number of states begin to broaden the use of DNA technology in law enforcement, New York Governor George Pataki proposed legislation Wednesday to increase the state's ability to take DNA samples from individuals convicted of a felony or attempted felony...Forty-three states already take some DNA samples, the majority from sex offenders, but more and more states have been building DNA databases. Last October, the Federal Bureau of Investigation launched its DNA Index System that allows nine states to share information, with 21 preparing to participate. Some oppose the breadth of potential information available in a DNA sample, including New York Civil Liberties Union executive director Norman Siegel, who questions whether the practice conflicts with the Fourth Amendment's constitutional protection from unreasonable search and seizure."⁵⁵² The issues are many, but the important one is: should these samples be taken before or after conviction and if a person is later exonerated what should happen? "Using FBI-created software, states have matched DNA left at crime scenes to 425 other crimes in the last six years. State crime labs have collected 609,000 DNA samples, but fewer than half are ready to be used, according to the FBI."⁵⁵³

The pressure for expanded DNA databases comes from law enforcement agencies around the country and the United States Department of Justice has yielded to that pressure. "Establishing DNA sampling as a standard arrest procedure could protect the innocent as well as convict the guilty, members of a Federal commission to study DNA databases said Tuesday. Attorney General Janet Reno requested the 22-member Justice Department commission after repeated nudging from law enforcement officials across the country. Indeed, Louisiana recently adopted a law authorizing DNA testing of anyone arrested, and the New York City Police Commissioner has expressed support for the idea."⁵⁵⁴

"Unlike 'mug shot' photos and ink-and-paper fingerprinting, DNA identification involves taking human tissue. But few safeguards for it exist: of the 50 US states that demand DNA from criminals, only three prohibit the unauthorized release of that genetic material. The privacy implications are staggering."⁵⁵⁵ In 1999, The FBI's DNA advisory panel during a meeting "questioned whether sufficient safeguards exist to prevent the unauthorized access and release of DNA samples all 50 states collect from crime scenes and some criminals."⁵⁵⁶

The use of the technology for instant information at the scene

551. McCullagh, Deagan. "Expanding the DNA Database." *Wired News*, Nov. 17, 1999. EPI1222
552. Anderson, Lisa. "Pataki Seeks DNA Collection." *Chicago Tribune Chicago, Jan. 7, 1999*. Source: NLECTC Law Enforcement & Technology News Summary, Jan. 21, 1999. EPI1045
553. Willing, Richard. "National: FBI and DNA." *USA Today*, Nov. 20, 1999. Source: NLECTC Law Enforcement & Technology News Summary, Nov. 30, 1999. EPI1084
554. *New York Times*. "Panel Offers Case For More DNA Tests." March 2, 1999. Source: NLECTC Law Enforcement & Technology News Summary, March 4, 1999. EPI1013
555. McCullagh, Deagan. "The Marker of a Criminal." *Wired News*, Nov. 19, 1999. EPI1226
556. McCullagh, Deagan. "What to Do with DNA Data." *Wired News*, Nov. 19, 1999. EPI1225

of a crime is also now possible. "Lawmakers (sic) may no longer have to wait weeks for labs to analyze DNA information. The National Institute of Justice has unveiled new technology, the Forensic DNA Chip, that will allow law enforcement officials to use DNA information at crime scenes. Law enforcement officials will be able to determine who was at a crime scene by inserting on-scene evidence into one end of the chip, which would be placed in a small computer mounted within a police vehicle. The computer will have access to a national criminal database, and will be able to search the DNA profile identified on the chip."⁵⁵⁷ The technology will be introduced into the field within a few years. "A computer-linked microchip device smaller than a credit card may soon allow DNA analysis to be conducted at crime scenes within seconds, the National Institute of Justice announced at the Conference of the Future of DNA on Monday. "This vision is very close to reality."⁵⁵⁸ "A team of engineering and genetic specialists at the University of Michigan announced their invention of a chip that automatically analyzes DNA samples and reports the results electronically...Analysis using the chip would require no lab work."⁵⁵⁹

It is the reach which is of great concern as well. The direction of the technology is such that it may not be far into the future when a DNA sample is required at birth. "Although the technology presents enormous possibilities in law enforcement, civil libertarians warn against practices such as mass DNA testing in crime scene areas and the maintenance of a DNA database on all citizens regardless of their criminal record. The American Civil Liberties Union recently offered to support the employees of a Massachusetts nursing home where a near-comatose woman was raped and impregnated earlier this year. The district attorney's office began collecting voluntary samples from men on staff, and indicated that non-cooperative employees might be subject to a warrant."⁵⁶⁰

In other developments, a tool for self protection has also been designed to make use of this technology in conjunction with pepper spray. "Pepper spray has its advantages, but imagine a self-defense tool that enables its user to both ward off an assailant and collect a DNA sample from the thug for law enforcers. Defender DNA, manufactured by Apik Inc. in Melrose, Florida, is a pocket-sized personal protection device that appears much like a small flashlight and works using a combination of electronics and biotechnology. When users strike an assailant with the device, it emits a loud alarm and extends a small needle-like probe to extract a small amount of blood or tissue from the attacker. Apik officials say that any

557. *Law Enforcement Technology*. "New DNA Technology." July 1999. Vol. 26, No. 6. Source: NLECTC Law Enforcement & Technology News Summary, July 15, 1999. EPI1929
558. Willing, Richard. "Science at the Crime Scene: Devices Will Test DNA in Seconds." *USA Today*, April 4, 1999. Source: NLECTC Law Enforcement & Technology News Summary, May 6, 1999. EPI1977
559. *United Press International*. "Breakthrough in DNA Testing Announced." Oct. 22, 1998. Source: NLECTC Law Enforcement & Technology News Summary, Nov. 5, 1998. EPI1096
560. *Business Wire*. "Identification: Key Tronic Sign Deal to Market Peripherals With Fingerprint ID Technology as a Network Security Device." Nov. 10, 1998. Source: NLECTC Law Enforcement & Technology News Summary, Nov. 19, 1998. EPI1067

purchasers who actually use their Defender DNA in a criminal case can have it replaced free of charge to avoid messy DNA mix-ups." 561

At the end of 1999, "The International Biometric Industry Association (IBIA) recommended regulations for biometric data including retina scans, voice recognition files, fingerprint files, and DNA information Friday. IBIA spokesman Fred Norton said the group welcomes government regulation, and has not come up with specific suggestions because of 'too many different scenarios.' Simon Davies, a privacy and data protection instructor at the London School of Economics, says that a variety of scenarios will make regulation ineffective. In California, however, there are at least 12 bills pending that concern biometric privacy, including one by State Assemblywoman Liz Figueroa (D-Fremont) that would fine insurance companies and others \$1000 for using, selling, or sharing medical information, including biometric data, without consent. Many worry about the potential misuse of biometric data, but Norton believes the problem can be solved." 562 \$1000 dollars for breaking into a person's body seems like a bargain for the industry in the few instances they are likely to get caught abusing people's trust. A person's DNA signature should have the same legal protections as his private home. What could be more private than the DNA which forms the chemical essence of who we are as individuals? "California governor Pete Wilson recently expanded the list of crimes that warrant a blood draw for the state's DNA database. Official estimates report about 60,000 more felons, including those convicted of manslaughter, kidnapping, mayhem, torture, and felony spousal abuse, will be required to provide blood samples." 563

At the same time there have been instances where old cases should be reexamined to determine if the right decision was made when people were originally convicted. At the same time the use of this kind of evidence does have value in getting the "bad guys." "DNA analysis has taken center stage in the robbery, false imprisonment, and rape charges against 39-year-old Charles Peterson. Sgt. Mike Puetz was working undercover when he spotted Peterson expectorating from his motorcycle, and leapt to wipe the shady character's spitte from the St. Petersburg, Florida, street. Puetz turned the evidence over to the state police for DNA testing, where the samples matched those taken from victims in a brutal sexual battery case." 564

DNA is our own personal signature and should remain personal. Occasions for DNA extraction should be strictly limited by law to suspects of serious crimes. Justice and security can have balance in a technological world while assuring a very basic element of

561: CIO "When Pepper Spray Isn't Enough." Sept. 15, 1998. Vol. 11, No. 23. Source: NLECTC Law Enforcement & Technology News Summary, Oct. 16, 1998. EPI11095
562: Kirtz, Heidi. "Boosting Biometric Privacy." Wired News, March 30, 1999. Source: NLECTC Law Enforcement & Technology News Summary, April 8, 1999. EPI1996
563: Government Technology. "California's Criminal DNA Database Expanded." Dec. 1998. Vol. 11, No. 16. Source: NLECTC Law Enforcement & Technology News Summary, Dec. 31, 1998. EPI1051
564: Houston Chronicle. "Spit on Street Leads to Slaying Suspect's Arrest." Oct. 24, 1998. Source: NLECTC Law Enforcement & Technology News Summary, Nov. 5, 1998. EPI11081

democracy - privacy.

Drug Wars

"U.S. Customs Service agents are outsmarting cross-border drug smugglers by using the latest technology. Recently, by employing an X-ray matching the size of a car wash, agents near the border town of Laredo, Texas, noticed 5,600 pounds of marijuana worth \$7.8 million stashed discreetly in a tractor trailer. Another tool law enforcement agents find useful is a thermal imaging camera - the size of an average camcorder - that can detect temperature changes as slight as one-quarter of a degree and creates an image of light and dark contrasts. This device can be used to detect marijuana growing - given away by grow light heat - in a person's home, or locate potential snipers during nighttime border patrols." 565 "Police often use thermal imaging devices to detect grow lights used in indoor marijuana-growing operations to establish probable cause for search warrants, but use of the devices has implications regarding Fourth Amendment limitations on police activities, writes attorney Douglas A. Kash. Some thermal imagers are as small as 35-millimeter cameras and can detect slight temperature differences up to a half mile away." 566 These technologies again must be treated with care in their use so that the innocent are not held hostage by the guilty. The increased use of technology can cause the innocent to be subjected to "looks into their homes" which can lead to serious mistakes. Aggressive systems designed for use against criminals should not be targeted against ordinary citizens without clear causes of legal action.

"prison officials are buying six drug-detection machines, called Itemisers, that will allow guards to wipe an inmate or visitor with paper, place the sample into the machine, and find out whether the person tests positive for drug residue. According to officials, around 6 percent of the state's 16,500 inmates tested positive for drugs in 1999. The machines will cut back on the flow of drugs into prisons." 567 There is an old saying when someone is bothering a person, "get out of my hair." It never made sense until the government decided to get into it. "However, hair can be used in law enforcement investigations; the National Institute of Justice and the Pennsylvania Department of Corrections (PADOC) have teamed up to include hair testing of inmates, as well as use the test to evaluate other ways of keeping prisons drug free. Ion-scan testing of visitors and employees, use of drug dogs, and random searches seem to be working, according to PADOC director of research Andt Keyser. However, hair tests might be better for probation tests, which are easier to falsify, Keyser explained. Hair is also good for pre-employment and random drug checks because it will show a pattern of use, according to

565: Srinivasan, Kalpana. "Technology Deployed in Drug War." AP, June 2, 1999. Source: NLECTC Law Enforcement & Technology News Summary, June 3, 1999. EPI1955
566: Kash, Douglas A. "Thermal Imaging Devices Heat Up 4th Amendment Issues." Police, July 1999. Vol. 23, No. 7. Source: NLECTC Law Enforcement & Technology News Summary, July 8, 1999. EPI1934
567: USA Today. "Tennessee: Nashville." July 19, 1999. Source: NLECTC Law Enforcement & Technology News Summary, July 19, 1999. EPI1922

Psychomedics' Mike Lamb, rather than miss the candidate who abstained specifically for the employment screening. Retests usually have the same result because they test a long period of time." 568

"The assassination of major international drug traffickers is under consideration by senior U.S. officials devising aggressive new measures against them. Encouraged by the President, Congress and a new drug czar demanding stepped-up efforts to deal with narcotics control, a National Security Council-convened team is seriously considering 'military operations' including such actions against 'a number of high-value targets,' according to a senior administration official." 569 This violates every value of our nation. We can not act as international vigilantes, invading the sovereign territories of countries to kill their citizens, without desecrating our own heritage. All men and women are innocent until proven guilty in a court of law by a jury of their peers. This is our system and it is not perfect, but we must not ignore our foundational laws. Everyone, whether Jew, Moslem, Christian, Democrat, Republican, poor, rich or, yes, even a suspected drug dealer, is entitled to due process under the law. If we lose sight of the law and our foundational beliefs, then democracy is indeed lost. What we will put in its place is a new kind of slavery. A slavery which removes every grain of our privacy and personal freedom from us and makes us instead conforming drones of a world order which will define "normal" in some dark closet and impose that "normal" on us all. Is this freedom? Is this justice? Is this what we have become - so filled with fear that we will give up the essence of our souls in exchange for a false security? All new technologies will be undertaken by better ones. All safeguards will be worked around by those with the will to do so. In the process of realizing this, are we prepared to give up our privacy? We hope your answer is the same as ours - a resounding No!

Lock Down

"Domestic Terrorism: Is Your Corrections Facility Ready?"

High-risk inmates pose special problems for correctional facilities, and steps must be taken to ensure the safety of staff, facility, and the inmate. High risk individuals should be housed in a high security area that is closely monitored, and attempts to keep the inmate isolated should be a priority." 570 There is an increasing problem of violence and horror within our prisons. "Three Corcoran State Prison inmates infiltrated on Saturday a recreation yard for the facility's most famous and protected prisoners, beating up mass murderer Juan Corona, destroying Charles Manson's guitar and causing the staff to deal with the latest in a number of security violations. Shortly after

568: Hoffmann, John. "Bewara Hari: Corrections Technology & Management, March/April 1999, Vol. 3, No. 2. Source: NLECTC Law Enforcement & Security Technology News Summary, May 6, 1999. EPI982

569: Greve, Frank. U.S. weights assassination of foreign drug traffickers. Philadelphia Enquirer, June 10, 1998. EPI572

570: Webb et al. "Domestic Terrorism: Is your Corrections Facility Ready?" Sheriff, March/April 1999, Vol. 51, No. 2. Source: NLECTC Law Enforcement & Security News Summary, April 28, 1998. EPI986

noon on Saturday, the three inmates scurried through an unlocked emergency door that separates two recreation areas...Corrections Department spokesman Tip Kindel said the emergency exit sensor malfunctioned." 571

Rehabilitation is a sad joke, with up to 85% of serious offenders returning for a second sentence. Crime requires justice: punishment, and if it is possible, a change in behavior, not "rehabilitation." Change can be imposed by drugs, mind control techniques or by a person's sincere desire to change. We can not impose change no matter how bad the situation is, because real change is, at its root, a spiritual matter that can only last if it occurs from within a person's very soul. We can mask the soul in a cloud of "rehabilitation" drugs or other invasions but it will not last. The prison of the soul is the dark heart of crime. The inner thoughts which are acted out in the world is the point where change can occur. In each personal disaster there is great opportunity to refocus energy. When people are at their worst they can move on toward their best. They have to want to change for it to happen.

Computers Cry for Help

We really like the following story but, once again, what can be used to catch a thief can be used to keep track of an innocent person using their portable computer as they travel around the world. "Law enforcement officials are having success recovering stolen computers, thanks in large part to new technology from Absolute Software Corporation. The company has introduced ComputTrace, a computer tracking system that allows a PC to call a monitoring center and leave its address. The Know County, Tennessee, Sheriff's Department was involved in a case in which a PC owned by First Tennessee Bank in Memphis was stolen out of the car of an employee on Dec. 3, 1997. Five days later, the monitoring center received a silent call from the computer, and tracked the location of the PC." 572

Other Strange Engagements

"The CIA and U.S. intelligence community will start monitoring the environment more closely as a predictive measure for global conflict. 'Environmental trends, both natural and man-made, are among the underlying forces that affect a nation's economy, its social stability, its behavior in world markets and attitudes toward neighbors.' John Deutch, director of central intelligence, said July 25, (1996). 573 This will become an increasingly important issue in conjunction with the destabilization of economies because of climate and weather changes which are accelerating globally. These factors

571: Arax et al. "Prisoners Attack Sale Unit's Inmates." Los Angeles Times, March 16, 1999. Source: NLECTC Law Enforcement & Technology News Summary, March 18, 1999. EPI1004

572: Verdoyen, Vicki. "Changing the Criminal Mind." Corrections Today Online, March 9, 1998. Source: NLECTC Law Enforcement & Technology News Summary, March 11, 1998. EPI1009

573: Defense News. "CIA Views Environment As Conflict Barometer." July 29-Aug. 4, 1996. EPI605

will become significantly pronounced within the next two decades. These forces will create new instabilities as well as drive the search for technological and scientific solutions. Controlling the weather will become a factor as the science advances. As the next chapter will show – that science is advancing.

“Frustrated by restrictions on using military force against terrorists, the United States is turning to a lower-profile tactic. The CIA calls it ‘disruption’ – working with foreign law enforcement services to harass and hamper terrorists around the world before they can pull off major attacks.”⁵⁷⁴ These are old tactics which are being brought into the drug wars and the war on terrorism but they have been around since wars began.

“France freely admits that it conducts intelligence operations against its allies and its enemies on the ‘economic front.’ As we move into the information age, distinction between enemies and friends begins to blur. The Japanese place a high priority on intelligence gathering through both ‘official’ and corporate intelligence networks. Japan’s international telecom carrier, NTT, routinely cooperates with Japanese intelligence to tap the phone lines of competitors.”⁵⁷⁵ The United States does the same. Allies and adversaries become confused when a new kind of “state” emerges – the multinational corporations which use governments as tools for their self interests at the expense of real public policy. Governments are elected by the money of special interests around the world. These interests are confusing what is right and what is wrong and substituting greed as the controlling factor of international politics. It is time for the revolution of the heart to replace the decay of greed.

The CIA used to hide behind others in setting up their business enterprises to support both their legal and illegal activities. Today they go to Silicon Valley and create companies in the open light of day and no one blinks an eye. “Temporarily forgoing its clandestine ways, the CIA is setting up a venture-capital firm in California’s Silicon Valley to invest in young companies that are developing technologies with potential uses for spying.”⁵⁷⁶

Smart Guns?

“Philadelphia City Councilman Angel Ortiz and Mayor Edward Rendell have proposed a bill which would prosecute all owners of guns not equipped with ‘smart-gun technology.’ Ortiz and Rendell propose that the bill go into effect in 2002, when they believe that gun manufacturers will have, and be able to use, smart-gun technology. As of yet, however, manufacturers say that smart-gun

⁵⁷⁴ Diamond, John. “CIA widens new secret anti-terrorist weapon: Disruption.” *Anchorage Daily News*, March 1, 1999. EPI1629
⁵⁷⁵ Littleton, Matthew J. *Information Age Terrorism: Toward Cyberterrorism*. Dec. 1995. <http://ndoweb.navy.mil/concepts/terror/terror.htm#Chapt1> EPI1785
⁵⁷⁶ Raum, Tom. “CIA starts venture-capital firm to invest in new technologies.” *Nandolimes.com*, Sept. 29, 1999. EPI1828

technology is unreliable due to erratic recognition devices.”⁵⁷⁷ “Gun control activists in New Jersey are promoting legislation requiring that all handguns sold in the state be loaded with owner-controlled technology. The Smart Gun, developed by Colt Manufacturing Co., is inoperable without a coded transmission from a transponder in a wristband worn by the registered owner to a receiver in the grip of the gun.”⁵⁷⁸ “New Jersey Senators. Richard Codey (D-West Orange) and Joseph A. Palaia (R-Ocean Township) are pushing a bill requiring all guns in the state to use ‘smart technology.’ So far, opponents have had a field day with the issue, pointing out that no such technology exists. However, Colt is producing such a gun – which may be available in a matter of days – that utilizes a radio transmitter worn on the wrist or jacket.”⁵⁷⁹ 1999 has been an threshold year for new technology. When the villain breaks into your home we hope everyone remembers their code, has their radio transmitter close by and that the technology doesn’t “jam.”

New World Order

“The FBI report analyzes ‘the potential for extremist criminal activity in the United States by individuals or domestic groups who attach special significance to the year 2000,’ the bureau said in a written statement. “The significance is based primarily upon apocalyptic religious beliefs or political beliefs concerning the New World Order conspiracy theory.”⁵⁸⁰ There will probably be extremists among such people, just as there are in all aspects of human interaction. The true paranoids are not the individuals in these groups that do not trust the government. The true paranoids are found in the governments which hatch oppressive, inhuman schemes. Governments have lost sight of their true missions in their rush to serve their real modern masters – the economic interests which harvest the wealth of modern nations at the expense of the people.

⁵⁷⁷ Sprenger, Polly. “Philly Shoots for Smart Guns.” *Wired Online*, May 1, 1999. Source: NLECTC Law Enforcement & Technology News Summary, May 6, 1999. EPI1878
⁵⁷⁸ Greider, William. “Will The Smart Gun Save Lives?” *Rolling Stone*, Aug. 6, 1998. No. 792. Source: NLECTC Law Enforcement & Technology News Summary, Oct. 16, 1998. EPI11086
⁵⁷⁹ Aselline, Peter. “Smart Gun’ Could Blast Hole in Critics Argument.” *New Jersey Times Online*, May 31, 1999. Source: NLECTC Law Enforcement & Technology News Summary, June 3, 1999. EPI1960
⁵⁸⁰ Salfiten, Michael J. “FBI to dish out advice against attacks.” *Anchorage Daily News*, Oct. 21, 1999. EPI11772

Chapter 9

Strange Technology

“Others are engaging even in an eco-type terrorism whereby they can alter the climate, set off earthquakes, volcanoes remotely through the use of electromagnetic waves.”⁵⁸¹

Technology revolutions have impacted this generation unlike any other in tremendous ways. The Revolution in Human affairs is the bigger revolution. As we consider the future, we can look forward to changes in the direction of human energy and creativity. Each new innovation has incredible possibilities in terms of its impacts on people and future events. We have the potential to create change as we each gain an understanding of the possibilities along with the wisdom to act on the knowledge in responsible ways.

This chapter pulls together a number of technologies and military approaches to these innovations. While previous chapters bring forward the detail of many of the technologies which deserve public discussions, this chapter presents a number of other areas of importance which are in need of consideration.

The framework within which some of these technologies will be used is embedded in the concept of Special Operations and other limited military operations. These operations present new, and different, challenges to overcoming the limits of the conflict while shifting from war fighting to policing. Are these the appropriate uses of the technology? Are these the directions we want our militaries to go? What technologies should be used? Who will decide the nature of weapons deployments into the battlespace?

“Special Operations and Military Operations Other Than War – SOMOOTW

4.7 Special Operations and Military Operations Other Than War; Operational Task: Acquire, maintain, and disseminate information to plan and execute SOMOOTW.

⁵⁸¹ DOD News Briefing, Secretary of Defense William S. Cohen, Cohen’s keynote address at the Conference on Terrorism, Weapons of Mass Destruction, and U.S. Strategy, April 28, 1997, EP1317

4.7.1 Description of Operational Task. The special operations mission, more than any other military mission, must be carried out successfully the first time. As history has shown, the failure of such a mission, usually a one-of-a-kind mission carried out by small elements, becomes a national embarrassment and international news at a minimum. Thus the forces must be fully equipped, very well informed, completely trained, and thoroughly rehearsed. In an age of many rapidly evolving technologies on both sides, this is a significant challenge. As an example, the Special Operations forces typically had the night as their friend. That is, they could operate with relative impunity at night. Advances in night vision equipment and in radar have given our adversaries the capability to detect special operations at night and in poor weather, threatening the success of those operations and the lives of the special operations forces (SOF).

The SOMOOTW mission area includes an ever-increasing series of roles in the modern world. The Air Force missions include:

- successfully, survivably, and perhaps covertly infiltrate and exfiltrate personnel, equipment, and supplies in denied territory.
- Apply precise firepower in small areas to support military entry/exit, and combat non-combat rescue.
- Support counter-terrorism operations.
- Provide counter-drug surveillance and intercept.
- Assist in humanitarian operations.

In fact, SOMOOTW is the ‘now’ war, ‘fought’ every day in many locations around the world. In the future, SOMOOTW will have an increasing role in the world, with particular emphasis on counter-terrorism and counter-proliferation. One-of-a-kind missions will be the rule, rather than the exception.

4.7.2 Sensor Challenges. The sensors envisioned for the SOMOOTW missions vary from small, covert unattended sensors up to airborne (on-board and off-board) sensors and even space-borne sensors with a wide range of capabilities. Concentrating on the SOMOOTW unique sensors, the needs tend to be peculiar to a particular mission, rather than the broad applications associated with other Air Force elements.

4.7.4 Enabling Technologies. The enabling technologies supportive of the Special Operations and Military Operations Other Than War operational tasks include miniaturized versions of many of the conventional technologies.

- Miniature focal plane arrays combined with acoustic/seismic/tilt transducers, and GPS in very small packages.
- New technologies for UGS, including new transducer fabrication and integration methods such as MEMS technology.

- Chemistry lab on a chip technology to produce a micro-miniature effluent and agent detector-reporter.
- Tags made even smaller than current designs (micro-tags) could map water, sewer, and air flows which, in turn, could help map areas and buildings, and even help locate humans and equipment.
- Multispectral apertures (e.g., infrared (IR) with millimeter wave (MMW) and multicolor IR) are required, as are low cost, moderate power, tunable, coherent lasers, and analog-to-digital converters with both higher sample rates and higher linear dynamic ranges.

5.2.3.2 Sensor Concept. This concept brings a variety of sensor and platform technologies together to deal with the difficult and growing problem of buried and hardened facilities. The surveillance of underground facilities is key to monitoring and targeting the activities of enemy leadership, detecting and classifying weapons manufacture and storage (especially NBC materials and weapons), and locating and classifying command and control sites. It is also essential to tracking transfers of personnel (including captives), weapons, and other equipment and to dealing with many counter-terrorism, drug interdiction, and similar tasks.

RF/Seismic Tomography System. The radio frequency/seismic tomography system uses a bistatic approach in which either or both electromagnetic and seismic waves are transmitted from the UAV into the ground to be received by implanted UGS in a tomographic scheme to construct a three-dimensional map of the electromagnetic and seismic properties of the volume observed."⁵⁸²

The above capabilities are immense and will change the shape of conflicts into a future that brings new and an increasingly widely dimensionalized vision of the meaning of Reagan's "Star Wars." The above description establishes the mission scope and then, in very technical generalities describes the many technologies we have discussed in the preceding chapters. These developments will allow these devices to become smaller and smaller until you could place the power of the computer writing these pages into a device small enough to inject under a person's skin... These possibilities are on the horizon and in the near term will arrive. It is time for the serious discussion to begin.

Micro Machines

"Imagine a machine so small that it is imperceptible to the human eye. Imagine working machines with gears no bigger than a grain of pollen. Imagine a realm where the world of design is turned upside down, and the seemingly impossible suddenly becomes easy - a place where gravity and inertia are no longer important, but the

⁵⁸² USAF Scientific Advisory Board, *New World Vistas: Air And Space Power For The 21st Century - Sensors Volume*, 1996. EP401

effects of atomic forces and surface science dominate. Welcome to the microdomain, a world now occupied by an explosive new technology known as MEMS (MicroElectroMechanical Systems) or, more simply, micromachines. Sandia National Laboratories, motivated by a guiding vision for MEMS, has become a recognized leader in this emerging field."⁵⁸³

"Tiny machines no bigger than a fingernail, a grain or rice or a red blood cell have been twirling, buzzing and slithering across the pages of science fiction and research laboratory benches for years. Enthusiasts say they are the advance wave of a technological revolution comparable to the introduction of computer microchips. 'Imagine a machine so small that it is imperceptible to the human eye,' said Al Romig, director of the Microsystems Science, Technology and Components Center at Sandia National Laboratory in Albuquerque, N.M. Sandia, along with other government and private research centers, designs 'microelectronic mechanical systems' - called MEMS or 'micromachines' for short."⁵⁸⁴

These incredibly small machines are already revolutionizing all areas of technology. As several separated innovations begin to merge, the merger of nanotechnology, biotechnology, communications technology and information technology creates a possibility of living, thinking and decision making objects devoid of a human soul. The decisions which drive the machines will be embedded in their programming by humans who define their missions and uses.

The perceptible size of the technology is mindboggling - "Packed full of sensors, lasers and communication transceivers, particles of 'smart dust' are being designed to communicate with one another. They could be used for a range of applications from weather monitoring to spying. The tiny 'motes' are being developed at the University of California, Berkeley, to produce the smallest possible devices that have a viable way of communicating with each other."⁵⁸⁵ "The Defense Department and several top engineering schools are developing tiny aircraft that could scout out enemy snipers, sniff poisonous chemicals or locate hostages in occupied buildings."⁵⁸⁶ The uses are endless and offer great possibilities for the benefit of humankind rather than its demise and destruction by warfare. The positive side of all of these developments are the things which can head us to a greater set of realities than the destruction of values, beliefs, human dignity, and the very planet which provides the sustenance for every living thing.

The power used to energize these tiny machines will either be present or sent in via directed energy sources such as microwaves.

"One of the biggest advantages of using microwave power is that you can make these UAVs smaller and smaller. With a battery, if you

⁵⁸³ Sandia National Laboratory, "About MEMS," <http://www.mdl.sandia.gov/Micromachine/> EP1940

⁵⁸⁴ Boyd, Robert S.

⁵⁸⁵ Graham-Rowe, Duncan, "Dust Bugs," *New Scientist*, Aug. 28, 1999.

⁵⁸⁶ <http://www.newscientist.com/ns/19990828/newsstory2.html> EP1878

⁵⁸⁷ Boyd, Robert S. "Small planes have big job," *Anchorage Daily News*, March 17, 1997. EP1703

continue making it smaller, you lose power,' Jenn explained."587 Remote power transmission lightens the remote by providing its energy supply. This will create a new generation of servants or warriors for mankind, as we so choose. Will these robots be programmed for peace or war? "The day when tactical mobile robots will serve as military 'point men,' surveying enemy terrain during combat operations, is one step closer to reality with the selection of NASA's Jet Propulsion Laboratory, Pasadena, CA, by the U.S. Defense Advanced Research Projects Agency (DARPA) to lead a consortium to create a miniature tactical mobile robot for urban operations."588

DARPA is also working on the smallest mechanical "bugs," in this case an insect more like a dragonfly. "... (DARPA) has selected for negotiation six proposals to develop flight-enabling micro air vehicle technologies as part of the Micro Air Vehicle (MAV) program. ... Micro air vehicles are airborne vehicles that are no larger than six inches in either length, width or height and perform a useful military mission at an affordable cost."589

Macro Machines

The development of nanotechnology allows the larger weapons systems to advance in revolutionary ways. Troops as such are destined to be computer game operators directing remote units which allow the human soldier to remove himself from direct confrontation with an enemy. Immune from the emotion of battle, insulated from the stench of death, the soldier is immunized from the harsh reality of his actions. The horror of war can bring reflections of its awful waste. Will we lose this motivation for peace by reducing soldiers to remote-controlling technicians with power unprecedented on past battlefields? Who will direct the weapons of political control? Will these be weapons of the next revolution, or, better... the inspiration for an alternative revolution - a revolution which will lead toward a thousand years of peace.

"The day is not far off when the computer chip and the robot will be mobilized as the military's shock troops. The essence of this revolution is simple enough. It's the power of the microprocessor - the computer chip - applied to warfare. Which means that, for at least the next 15 years or so, the ongoing RMA greatly favors the world's dominant microchip manufacturer, the United States."590

The ability of larger military systems to overcome their technological limits changes the balance of power at all levels of conflict. "Basically, the Osprey converts from a helicopter into a

587. Kuska, Dale. "Micro-UAV's Possible in Near Future." American Forces Information Service. http://www.defenseinfo.mil/news/Jan1998/n0107998_9801072.html EPI351
588. NASA. JPL To Develop Miniature Robots For Tomorrow's Soldiers. Sept. 8, 1998. <http://www.robobooks.com/war-robots.htm> EPI1104
589. Office of Assistant Secretary of Defense (Public Affairs) "DARPA Selects Micro Air Vehicle Contractor." Defense/INR News Press Release No. 8706-97. EPI352
590. Watson, Russell and Barry, John. "Tomorrow's New Face of Battle." Newsweek, Special Issue, EPI862

speedy fixed-wing plane in 20 seconds, offering new capabilities for troop deployment, drug interdiction and search and rescue, including hostage rescue. "This is the revolution in military affairs," said Cohen, describing the aircraft as 'the epitome of what our forces will need and what they will become in the 21st century.'"591 These advances and their implications are understood by the U.S. Secretary of Defense and those at the top of military operations globally. The use of these systems must rest on the platform of human and democratic values and not just "platforms" hanging in space energized to dominate and control.

Urban conflict spilled into the streets of Seattle at the end of the millennium as demonstrations against the globalization of trade was met with a brutal use of "non-lethal" weapons. The globalization of economies through the World Trade Organization has created a counter force - a counterrevolution - which has united the cause of working people with the concept of planetary environmental stewardship. The coalition of human rights, labor, and the environment will propel the next revolution. The battle is engaged, and the masters have removed their velvet gloves. We believe that peaceful means are the route to change and preempts decision makers' ability to use new forms of force. Political control is the outgrowth of technology - political power inherently belongs to the people - all people. The cause of peace remains a noble cause. The models of economic homogeneity and domination of the earth and its diverse people is fundamentally wrong and works against the common interests of individual people and cultures. These cultural foundations are what underly our diversity and personal integrity. Urban conflict, police actions, and international conflicts are being driven by both economic and cultural conflicts which will either accelerate or be replaced with a new concept of freedom and peace which respects the individual's right to self actualization and expression.

Urban War

"While there will continue to be a role for traditional indirect fire systems in future urban operations, the vast majority of urban precision engagement capability in the future will come from robotic or unmanned systems operating within the city. These systems must be capable of semi-autonomous movement within the urban battlespace and be equipped with both high-speed and extended loitering capabilities. These systems must be capable of providing rapid, precise, lethal and non-lethal fires and be able to "occupy" areas of the city that have great military significance, but which do not require physical human presence.

The 2025 urban warfighter must have an unprecedented level lethality across a broad spectrum of capabilities. In addition to precision lethal fire provided by his next-generation individual assault

591. Bischof, David. "Military Introduce New Helicopter." Newsday.com, Sept. 8, 1998. <http://www.newsday.com/np/mnpw15.htm> EPI1145

weapon, he should be able to access digital, voice, or possibly even thought-activated fires from a variety of robotic systems operating semi-autonomously within the urban battlespace.

He must also have direct access to precision fire support from distant platforms when larger engagement opportunities present themselves. Additionally, the future urban warfighter needs to possess nonlethal weapons to assure crowd control and minimize collateral damage in certain situations.

In addition to that provided by the advanced urban combat vehicle, the individual soldier will require enhanced individual mobility in both the horizontal and vertical dimensions. Some of this capability will be provided by UGVs (unmanned ground vehicles) that will carry much of the load currently borne by the soldier. Small, individual aerial assault systems can also be used to provide soldiers with a dramatically improved ability to move vertically and horizontally. With only small R&D investments, the 2025 Urban Warfighter System can include a Vertical Assault Urban Light Transporter (VAULT) that will give a soldier the ability to "leap" to the top of three- or four-story buildings and "jump" long distances over rubble at speeds of up to 30 knots.⁵⁹²

Geographical Positioning Systems

"Global positioning information comes from a network of 24 Department of Defense (DOD) satellites. Planes, boats, vehicles, and mapping and survey teams can determine their position on earth by using equipment that receives and interprets signals from these satellites. For civil applications, the satellites provide a signal that is accurate to about 100 meters without the use of DGPS.

DGPS is a technology for improving the accuracy of this positioning information. This greater accuracy is potentially useful in such ways as improving the accuracy of maps, enhancing search and rescue efforts, improving navigation in crowded waterways, and helping planes land in bad weather. DGPS increases the accuracy of the satellite signal through the use of earth-located 'base' or reference stations. The cost of these base stations varies from about \$10,000 to \$200,000 depending on the type of application and communication link needed to get the information to the user."⁵⁹³

The use of highly precision GPS systems allows for energy transfer to remote devices of every size, shape and description.

New Biological Weapons and the Food Supply

The advancement of genetic and biological technologies raises other questions. There is great concern about the use of crops which do not generate seed, for example. This technology is designed to

592. Hain II, Robert F. et al. "Urban Warfare and the Urban Warfighter of 2025." Parameters, Summer 1998. EPI825
593. GAO. Global Positioning Technology. GAO/RCED-94-280. Sept 1994. EPI453

make farmers totally dependent in their food source, creating agraveslaves where once there was a self-sustaining agricultural economics. Not every culture wants to become involved with western economic greed and its misplaced values.

There are also the suggestions of introducing biological material into natural environments without a full understanding of the impact on systems which are interdependent. "Deliberately infecting crops, even drug crops, starts us down a slippery slope. It tells the world that using disease to achieve an end is legitimate - and fairly easy. Whatever the UN might say, these fungi certainly look like biological weapons, which are supposed to be prohibited by an international treaty."⁵⁹⁴ The treaty intent is to forbid such violations of good sense.

EMP - Electromagnetic Pulse Weapons

"NATO has widened its target list to include power plants throughout Serbia. The action has had a serious effect on the general population. Although he was unable to give more details, the weapon is thought to be a so-called 'soft-bomb.' Unlike conventional explosives, these explode in the air above the power plants, showering splinters of graphite onto the electrical transformers below."⁵⁹⁵ These new systems are ten years old, having been used in Desert Storm. "During Desert Storm, the navy fired hundreds of sea-launched cruise missiles at targets in many parts of Iraq. Most were equipped with high explosives, but some carried small spools of carbon-fiber wire that were dispersed by a small 'burst' charge. These formed long strands, which rained down on electricity sub-stations and other switch-gear and short-circuited them - part of a program to destroy power supplies throughout Iraq."⁵⁹⁶ Was it really carbon or graphite filaments or was it something else? What was the rest of the story?

Electromagnetic pulse attacks on power plants will shut them down. "The introduction on non-nuclear electromagnetic bombs into the arsenal of a modern air force considerably broadens the options for conducting strategic campaigns. The massed use of such weapons would provide a decisive advantage to any nation with the capability to effectively target and deliver them."⁵⁹⁷ The military is not alone. Through technology transfers from the Department of Defense and our national research labs, a small version of these systems will soon be available throughout the country for police organizations. The National Institute of Justice issued the following solicitation which illustrates the points:

"New Scientist" "A very unquiet war." Sept. 11, 1999. <http://www.newscientist.com/news/1990911/editorial.html>
BBC News. "Soft bombs" hit hard. May 3, 1999. http://news.bbc.co.uk/1/englist/world/europe/newsid_334000/334361.stm EPI928
Bernett, Felix. "New US weapon destroys electronics but not people." New Statesman & Society, 1999. EPI1153
Kopp, Carlo. The E-Bomb - A Weapon of Electrical Mass Destruction. http://www.infowar.com/mil_c4/mil_c4ib.html EPI766

"The purpose of this solicitation is to request interested applicants offer their prototype electromagnetic (EM) devices for submission to NIJ's vehicle stopping Phase III testing (i.e., engineering field testing). Three types of EM devices will be considered for testing: electrostatic discharge, non-nuclear electromagnetic pulse, and high power microwave or radio frequency energy. NIJ is presently involved in a four-phase, multi-year effort to investigate the feasibility of EM technology to stop vehicles. Phases I and II are completed. In those tests, the EM devices were applied to targeted vehicles that were either idling or operating on a dynamometer with their engine and drive train engaged. The Phase II test results support the viewpoint that EM technologies have promise for eventual use in stopping vehicles."

ELF Impacts on Marine Life

Another strange and increasingly noticeable effect of our technologies is on other species. These effects are causing scientists to rethink the effects of these new technologies on humans as well. All biological systems are impacted in very different ways. However, the impacts are not well understood by those creating or consuming the technology. Mankind is on the threshold of either being reduced to total political domination or must initiate a cry for counterrevolution by acting on what we each know to be right and true. We can change the direction of our technological advances and insist that higher human values are applied to the decisions effecting them. We are responsible for the decisions our leaders and governments make. We can change the game from within by using existing structures to replace the leadership and activating those with the right heart for service.

Some of the impacts to animals have been noted. "Noise from supertankers, oil exploration and new military sonar equipment scrambles the communications systems of sea life, forcing changes in migration routes and breeding grounds, a new report warns." 598 While, "In May 1996, twelve Cuvier whales washed up on the west coast of Greece, just days after NATO tested an LFAS system to detect nuclear submarines. The deep-diving species rarely gets stranded." 599 This was attributed to the NATO test of this new system. Similar technology has been tested off the coast of Alaska, California and Hawaii.

The idea that the brain is effected by magnetic fields is for some scientists a revolutionary discovery within their disciplines. "Catech researchers have discovered tiny magnetic particles in the brains of humans, similar to those that have been found in other animals. In many other species, such as pigeons, salmon and whales." 598 AP: "Man-made underwater noise threatens sea life." *Anchorage Daily News*, June 28, 1998. EP1187
599. Gong Jr., E.J. "Sounding Out Humpbacks." *ABCNEWS.com*, March 4, 1998. <http://www.abcnews.go.com/sections/science/DailyNews/whales0305.html> EP1774

the magnetic particles allow the organisms to navigate in Earth's magnetic field, providing an inborn sense of direction." 600 "The recent discovery of magnetite in the human brain could change the picture in a very significant way. The magnetic properties of this material, which are very different from those of typical cellular constituents, provide a physically plausible mechanism by which magnetic fields might perturb biological systems." 601 "Scientists have discovered that about 60 species of animals can sense the Earth's magnetic field and may use an internal compass to help guide them on migrations that can span thousands of kilometers." 602 The Earth's pulse, (7.83hz), is more than some disconnected energy - it is the pulse rate of the creative process in the human brain - the alpha rhythm - the point of beginning. This pulse rate is impacted by the fields we surround ourselves in and it does have an impact on all living things. The end is omega. What shall it be?

Owning the Weather

Nature can also create an electromagnetic pulse which can have the same effects as a weapon. "U.S. satellites and power grids could be disrupted for the next three years because of intense solar activity called Solar Maximum, scientists said Wednesday. Starting next year space storms, radiation showers and affects on power grids are all expected during the upcoming Solar Max period, which is expected to last about three years." 603 The fact that nature creates its own space and terrestrial weather has led to a pursuit that one military article referred to as "owning the weather."

"Weather modification was another area of China Lake preeminence. Between 1949 and 1978 China Lake developed concepts, techniques, and hardware that were successfully used in hurricane abatement, fog control, and drought relief. Military application of this technology was demonstrated in 1966 when Project Popeye was conducted to enhance rainfall to help interdict traffic on the Ho Chi Minh Trail." 604 Projections into the future are even more incredible:

"In 2025, US aerospace forces can 'own the weather' by capitalizing on emerging technologies and focusing development of those technologies to war-fighting applications. Such a capability offers the war fighter tools to shape the battlespace in ways never before possible. It provides opportunities to impact operations across the full spectrum of conflict and pertinent to all possible futures."

600. Maura II, Thomas H. "Catech Scientists Find Particles in Human Brains." *Los Angeles Times*, 12, 1992, pp. 3, A21. EP150
601. *MicroWave News*, "JASON on EMFs and Health." Sept/Oct 1993. EP1496
602. Woods, Michael. "Magnet in brain directs research on sixth sense." *Anchorage Daily News*, 12, 1992. EP1530
603. Reuters. "Solar Storms Endanger U.S. Satellites And Power Grid." Nov. 11, 1989. EP11198
604. *The Rocketeer*. China Lake Weapons Digest. <http://www.navwcwps.navy.mil/~bronh/crml/rlk45>

Technology advancements in five major areas are necessary for an integrated weather-modification capability: (1) advanced nonlinear modeling techniques, (2) computational capability, (3) information gathering and transmission, (4) a global sensor array, and (5) weather intervention techniques.

As indicated, the technical hurdles for storm development in support of military operations are obviously greater than enhancing precipitation or dispersing fog as described earlier. One area of storm research that would significantly benefit military operations is lightning modification. Most research efforts are being conducted to develop techniques to lessen the occurrence or hazards associated with lightning. This is important research for military operations and resource protection, but some offensive military benefit could be obtained by doing research on increasing the basic efficiency of the thunderstorm, stimulating the triggering mechanism that initiates the bolt, and triggering lightning such as that which struck Apollo 12 in 1968. Possible mechanisms to investigate would be ways to modify the electropotential characteristics over certain targets to induce lightning strikes on the desired targets as the storm passes over their location.

Communications Dominance via Ionospheric Modification. A number of methods have been explored or proposed to modify the ionosphere, including injection of chemical vapors and heating or charging via electromagnetic radiation or particle beams (such as ions, neutral particles, x-rays, MeV particles, and energetic electrons). It is important to note that many techniques to modify the upper atmosphere have been successfully demonstrated experimentally. Ground-based modification techniques employed by the FSU include vertical HF heating, oblique HF heating, microwave heating, and magnetospheric modification. Significant military applications of such operations include low frequency (LF) communication production, HF ducted communications, and creation of an artificial ionosphere...

An artificial ionospheric mirror (AIM) would serve as a precise mirror for electromagnetic radiation of a selected frequency or a range of frequencies. It would thereby be useful for both pinpoint control of friendly communications and interception of enemy transmissions.

This concept has been described in detail by Paul E. Kossey, et al. in a paper entitled "Artificial Ionospheric Mirrors (AIM). The authors describe how one could precisely control the location and height of the region of artificially produced ionization using crossed microwave (MW) beams, which produce atmospheric breakdown (ionization) of neutral

species. The implications of such control are enormous: one would no longer be subject to the vagaries of the natural ionosphere but would instead have direct control of the propagation environment. Ideally, the AIM could be rapidly created and then would be maintained only for a brief operational period.

Artificial Weather. Nanotechnology also offers possibilities for creating simulated weather. A cloud, or several clouds, of microscopic computer particles, all communicating with each other and with a larger control system could provide tremendous capability. Interconnected, atmospherically buoyant, and having navigation capability in three dimensions, such clouds could be designed to have a wide range of properties. They might exclusively block optical sensors or could adjust to become impermeable to other surveillance methods. They could also provide an atmospheric electrical potential difference, which otherwise might not exist, to achieve precisely aimed and timed lightning strikes. Even if power levels achieved were insufficient to be an effective strike weapon, the potential for psychological operations in many situations could be fantastic.

One major advantage of using simulated weather to achieve a desired effect is that unlike other approaches, it makes what are otherwise the results of deliberate actions appear to be the consequences of natural weather phenomena."605

Welcome back to HAARP. Paul E. Kossey is one of the inventors of the original HAARP patents.606 He has also consulted and is credited by NATO France for his research into ionospheric modification for weapons applications. The above description is part of what HAARP is about.

The Russians also are advancing in this area and may even exceed the United States' technology. A Russian company created a plan which "calls for the use of new Russian technology to create cyclones - the giant storms known as typhoons and hurricanes - to cause torrential rains, washing the smoke out of the air. A Malaysian company, BloCure Sdn.Bhd, will sign a memorandum of understanding soon with a government-owned Russian party to produce the cyclone."607 What are the consequences of such manipulations? Does a weather change in one place shift the weather of the world?

605. House, Col. Tammy J. et al. *Weather as a Force Multiplier: Owning the Weather in 2025*. Air Force 2025, Aug. 1996. EPI316
606. Belgich and Manning, *Argels Don't Play This HAARP*, *Advances in Testa Technology*. 1995, Argel Press. EPI1229
607. *Wall Street Journal*, Malaysia to Battle Smog With Cyclones. Nov. 13, 1997. EPI322

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The Politics of the Weather

“Resolved, That it is the sense of the House of Representatives that the United States Government should seek an agreement with other members of the United Nations on the prohibition of research, experimentation, or use of weather modification activity as a weapon of war.

I can see only two circumstances in which weather modification could be usefully employed by the United States as a weapon of war. First, some fundamental breakthrough might make weather modification a weapon of mass destruction.

The other possible use of weather modification is its employment in a covert war. In the future, it may be to a nation's advantage to engage in covert warfare rather than overt warfare to secure national advantages.

One important indicator of a nation's commitment to a ban on weather warfare is the nature of its weather modification research and the manner in which it is conducted. If weather modification by research is open and aboveboard, if it is conducted domestically by domestic agencies, then a fairly high level of credibility can be established. If, on the other hand, weather modification research is conducted in secret, frequently outside the country by military or intelligence agencies, then I would suggest that any treaty would not be worth the paper it is printed on.”⁶⁰⁸

“Weather Control – Scientists have experimented with weather control since the 1940's, but Spacecast 2020 states that ‘using environmental modification techniques to destroy, damage or injure another state are prohibited.’ Advances in technology, however, ‘compels a reexamination of this sensitive and potentially risky topic.’”⁶⁰⁹ It seems that we now have the answer about the treaty and what it means. The congressman was correct in terms of the 1975 hearings on the subject when he suggested that “any treaty would not be worth the paper it was printed on.”

Weather War

The military has a great deal to say in this area and has published the following summary:

‘POTENTIAL WEATHER MODIFICATION CAPABILITIES DEGRADE ENEMY FORCES

PRECIPITATION ENHANCEMENT

- Flood Lines of Communication
- Reduce PGM/Reece Effectiveness
- Decrease Comfort Level/Morale

⁶⁰⁸ Hearing Before The Subcommittee On International Organizations Of The Committee On International Relations, House of Representatives, July 29, 1975, ‘Prohibition Of Weather Modification As A Weapon Of War,’ H. Res. 28, EP1408

⁶⁰⁹ Lawyer, Andrew, ‘Visionary, Classified Plan Includes Nuclear propulsion,’ Defense News, 9/13/18, p. 10A

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STORM ENHANCEMENT

- Deny Operations

PRECIPITATION DENIAL

- Deny Fresh Water
- Induce Drought

SPACE WEATHER

- Disrupt Communications/Radar
- Disable/Destroy Space Assets

FOG AND CLOUD REMOVAL

- Deny Concealment
- Increase Vulnerability to PGM/Reece

DETECT HOSTILE WEATHER ACTIVITIES

ENHANCE FRIENDLY FORCES PRECIPITATION AVOIDANCE

- Maintain/Improve LOC
- Maintain Visibility
- Maintain Comfort Level/morale

STORM MODIFICATION

- Choose Battlespace Environment

SPACE WEATHER

- Improve Communication Reliability
- Intercept Enemy Transmissions
- Revitalize Space Assets

FOG AND CLOUD GENERATION

- Increase Concealment

FOG AND CLOUD REMOVAL

- Maintain Airfield Operations
- Enhance PGM Effectiveness

DEFEND AGAINST ENEMY CAPABILITIES”⁶¹⁰

These summary statements are revealing and give clear indications of where we are and where we are headed. The following is another summary which speaks to the present ability of existing technologies in these areas:

⁶¹⁰ U.S. Army (TSCOM) JTS 97- Potential Weather Modification Capabilities AF 2025. <http://www.icsom.army.mil/its/987/proc/ed/abarnes/sk004.htm> EP1437

"SUMMARY

- Major Improvements in Short Term Forecasts by 2010
- 14 Day Forecasts by 2040

CURRENT CAPABILITIES

- Targeted Fog Dispersal
- Local Changes in Precipitation
- Cloud Modification - Surveillance/Coverage
- Hole Boring
- Create/Suppress Cirrus/Contrails
- Ionospheric Modification
- Energy Requirements Too Large For Major Storms
- Treaty Restrictions
- New Weapons Systems Push the Envelope
- The Environment Must Be Considered From the Start of the Concept/Design For All New Weapon Systems

As weapons and other systems become more sophisticated, the atmospheric environment will continue to be a major factor in the usefulness and operational effectiveness of these systems. For this reason it is imperative that atmospheric scientists be brought in at the beginning on any and all new proposed systems so as to avoid the costs of altering or abandoning the system at a later date." 611 Are we waking up to the reality?

Stop the Tornadoes & Lightning

"Mr. Clinton said he would support money for a national weather center at the University of Oklahoma, where he hoped research could be done into how to 'deflate the strength of some of these very powerful tornadoes before they hit.' Earlier, on the helicopter tour, the president seemed stunned by the destruction." 612 Dr. Bernard Eastlund was the lead scientist in the development of the HAARP technologies. He has completed additional research into these areas for the European Space Agency and others. The research took place at the University of Oklahoma some months before the President's statements. These technologies are already feasible. "Eastlund and Jenkins suggested Saturday that a coordinated system of ground - and/or space-based Doppler radars could warn an impending storm in time to target and power up an orbital microwave gun. "The bottom line is that the elements to actually control tornadoes look like they might be there," Eastlund says." 613 In addition, it will be possible to control lightning for civilian advantage in the future. "If any of these approaches to space

611. U.S. Army (Tecom). Summary. <http://www.tecom.army.mil/tes/1997/proceed/abarnes/ald018.htm> EPI450
 EPI450
 612. Rosenbaum, David E. "Clinton Orders Job Relief In Aftermath of Tornadoes." New York Times, May 8, 1999. EPI214
 613. Discovery News Brief. "Tornadoes Zapped from Specs." June 1, 1999. <http://www.discovery.com/news/briefs/brief3.html> EPI177

lightning with laser beams ultimately succeeds, application of the technique could be commonplace. Lasers might one day scan the skies over nuclear power plants, airports and space launch centers. And electric utilities of the 21st century, with their growing network of equipment at risk, may finally acquire the means to act on the threat of a gathering storm, instead of being destined to react only after the damage is done." 614 It may not be lasers. Who really knows what conductive pathways can be created, but what are the risks of such controlled discharges? What if they begin to shift the energy from higher, more powerful, sources of energy like the ionosphere or magnetosphere? What type of discharges could occur and will they be able to be switched off once the connections are made?

What type of energy are we toying with? "In one day a hurricane would expend 2 x 10¹⁹ joules @ 5000 Megatons of TNT. The amount of energy available for man to use is small compared to the energy of these storms. In addition, the effects of adding large amounts of energy to these storms would have unpredictable and possibly undesirable side effects. CHAOS theory shows that small perturbations can end up having large effects, but available atmospheric data and model resolution are currently, and in the foreseeable future, not good enough to predict the outcome of adding energy to these storms." 615

New Weapons of Mass Destruction

"There are some reports, for example, that some countries have been trying to construct something like an Ebola Virus, and that would be a very dangerous phenomena, to say the least. Alvin Toffler has written about this in terms of some scientists in their laboratories trying to devise certain types of pathogens that would be ethnic specific so that they could just eliminate certain ethnic groups and races; and others are designing some sort of engineering, some sort of insects that can destroy specific crops. Others are engaging even in an eco-type terrorism whereby they can alter the climate, set off earthquakes, volcanoes remotely through the use of electromagnetic waves." 616 United States Secretary of defense, William Cohen, when he said these words in 1997, put the world on notice of the beginning of a Revolution in Military Affairs.

"Unusual radio waves recorded hours before the Loma Prieta earthquake struck may someday provide a way to warn of an impending temblor, a Stanford University researcher said Thursday." 617 These kinds of energy fields may be natural or could be enhanced by mankind either by design or by accident. Once the dominant or harmonic fields are recognized they can be modified by man. Herein is the danger and the light. How we use energy is relevant to us all. "Strategic Control with Lasers." Scientific American, Aug. 1997. EPI411

www.tecom.army.mil/tes/1997/proceed/abarnes/ald018.htm EPI448
 DOD News Briefing, Secretary of Defense William S. Cohen. Cohen's keynote address at the Service on Terrorism, Weapons of Mass Destruction, and U.S. Strategy. April 28, 1997. EPI317
 Stocker, Dan. "Strange radio waves preceded big quake." San Jose Mercury News, Dec. 8, 1999.

to each person. We can use our personal energy and the great powers that our creative capacities have provided us with to either breath life into the planet or snuff the remaining life from the face of the earth. We must each decide how we wish mankind to proceed.

Clean Up The Environment With What?

"In developing their high-powered microwave equipment, the Russian scientists discovered the beams destroyed chlorofluorocarbon molecules. The hope, Mr. Tulupov said, is to find a feasible way to remove the chemical before it floats high enough to combine with the ozone in the stratosphere." 618 This was also one of Dr. Eastlund's ideas in his original patents for the HAARP technology.

Natural Power Surges

"The eruptions produce shock waves and atomic radiation that disable satellites before their life cycle has been completed by crippling their onboard computers, rendering them useless. These storms can also cause disruptions of communications and electrical grid systems here on Earth. Forecasts from such an observatory will make space missions, manned and unmanned, safer and more dependable." 619

"In the past solar activity has disrupted communications, navigation and surveillance systems, and has shut down electric power grids. Recent loss of a communication satellite, Telstar 401, has been attributed to solar emissions which passed the satellite at the time of the failure. Solar max will increase the IR background through which surveillance, threat warning and missile systems must operate. Heating of the upper atmosphere will change the orbits and cause the early demise of some satellites. PL/GP is developing methods to forecast and mitigate these changes." 620 For the last three hundred years, the waxing and waning of sunspots has been quite regular. If this cycle continues, the next solar maximum will be near the year 2000. Scientists at the Space Environment Center are getting prepared for this cycle which will be solar cycle 23." 621 "Damage from past solar storms has been impressive. One of the most notable events occurred on March 13, 1989, when electrical surges broke circuits across the grid of the Hydro-Quebec power company, blacking out the entire province of 6 million people in just 90 seconds. It cost the utility more than \$10 million and customers tens or hundreds of millions more." 622

818. Schmitz, Tom. "Call's Livermore Weighs Plan to Use Russian Technology." Knight-Ridder Newspapers, April 9, 1993. EPI 320
619. Miller, David W. *The New Federalist*. "Mapping Magnetic Fields For Solar Forecasting." Oct. 1989, p. 11. EPI464
620. U.S. Army (Tecon). *Solar Activity - Next Maximum*. Jan. 1989 March 2000 June 2001. <http://www.tecon.army.mil/star/1997/proc/edabarnes/d005.htm> EPI438
621. NOAA. "Solar Flare Knocks Out Radio Communications." Press Release No. NOAA 98-602 July 11, 1989. EPI404
622. Scripps Howard News Service. "Scientists: Big Storm is Coming." *Sunday Republican*, May 1996. EPI406

Chapter 10

Earth Rising – The Revolution

*"in the end they will lay their freedom
at our feet and say to us,
'make us your slaves, but feed us.'"*

Dostoevsky

The military has announced a new revolution – their revolution is a "Revolution in Military Affairs" (RMA). The first reference to the Revolution in Military Affairs in our research was from a military war college document we discovered five years ago. 623 The RMA encapsulates the idea that technology has changed to such a degree that the very nature of war is forever altered. It suggested that what was coming in new technology could be equated to the introduction of gun powder to Europe a few centuries ago or the discovery of the atom bomb in more recent history. The Revolution in Military Affairs states that these new systems are contrary to American values and that their introduction would be heatedly opposed in the United States. The authors of that paper proposed that in order to introduce these new weapon systems that American values would have to be changed!

It is particularly alarming when military "think tanks" begin to publish material in which they suggest that commonly held national and human values are insufficient to meet the demands of desired military objectives in introducing new technology. What is wrong with this picture? Do these institutions, and their extension to other public enterprises, *reflect popular values or should they be empowered to create popular values?* Are these public and quasi-public institutions, focused on defense and warfare, the right groups to determine values or should they mirror popular values so that a nation's foundational truths are expressed through their national institutions?

"The buzzwords haunting the Pentagon today are 'revolution in military affairs'. The idea, simply put, is that the same technologies that have transformed the American

623. Meitz, Steven and Kent James. *The Revolution in Military Affairs and Conflict Short of War.* Strategic Studies Institute, U.S. Army War College, July 25, 1984. EPI518

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workplace may have no less profound an effect on the American way of war." 624

The Revolution in Military Affairs described a philosophy of "conflict short of war" ("terrorism, insurgency or violence associated with narco-trafficking") that requires new weapons and a change in public opinion. The RMA says that this change in opinion does not have to evolve naturally, but can be deliberately shaped by the government. The idea is that belief systems of Americans can be slowly altered to allow the military to introduce new weapons technology which, at this time, would be resisted by most Americans. What this paper puts forward is:

"In its purest sense, revolution brings change that is permanent, fundamental, and rapid. The basic premise of the revolution in military affairs (RMA) is simple: throughout history, warfare usually developed in an evolutionary fashion, but occasionally ideas and inventions combined to propel dramatic and decisive change. This not only affected the application of military force, but often altered the geopolitical balance in favor of those who mastered the new form of warfare."

The military's authors discuss emerging technologies which may go against Americans' beliefs in such things as the presumption of innocence, the right to disagree with the government, and the right to free expression and movement throughout the world. The examples of technology given include the disabling of aircraft while in flight, resulting in a crash which cannot be connected to the firing of a weapon - in other words "pilot error" or an "unexplained incident" likely would end up in official accident reports. Moving of funds out of "suspect" bank accounts is another technology discussed. Essentially the paper describes numerous ways an adversary could be attacked by these new technologies, how they would violate fundamental laws and how to change the attitude of Americans so that they could be used. What will those with the power to invade the privacy of individuals do and what would form the basis of their decisions? Based on what rationale? Will the holders of this power be trusted by the rest of the population? The military planners have anticipated that the population would answer with a resounding - "NO"! Therefore, they propose a series of events to shift the popular view to the opposite extreme. They propose a revolution in society, based on fear, which will allow for a Revolution in Military Affairs.

Terrorism is defined in one report as "a purposeful human activity primarily directed toward the creation of a general climate of fear designed to influence, in ways desired by the protagonists, other

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human beings, and through them, some course of events." 625 Under this definition the very condition the military intends to exploit in order to introduce their weapon concepts are the very things that they should be guarding against.

The United States Secretary of Defense, William Cohen, stated that:

"The best deterrent that we have against acts of terrorism is to find out who is conspiring, who has the material, where they are getting it, who they are talking to, what are their plans. In order to do that, in order to interdict the terrorists before they set off their weapon, you have to have that kind of intelligence-gathering capability, but it runs smack into our constitutional protections of privacy. And it's a tension which will continue to exist in every free society - the reconciliation of the need for liberty and the need for law and order."

And there's going to be a constant balance that we all have to engage in. Because once the bombs go off - this is a personal view, this is not a governmental view of the United States, but it's my personal view - that once these weapons start to be exploded people will say protect us. We're willing to give up some of our liberties and some of our freedoms, but you must protect us. And that is what will lead us into this 21st century, this kind of Constitutional tension of how much protection can we provide and still preserve essential liberties." 626

This view reminds us of other periods in history occurring just before the general decline in civil liberties and basic concepts of freedom. This is the context of the current condition of our democracies and this is what must be reshaped.

The authors of an earlier U. S. Army War College paper lay out a fictional scenario where the illusion of the need for a trade-off of individual liberties in exchange for security is presented. In their scenario, a plan to desensitize the population to increasing control and introduction of the new technology, through systematic manipulation and disinformation by the government is described. 627

In another section, The Revolution in Military Affairs discusses the reality of the RMA. Even with all the constraints, there is no question in the writers' minds that the new technology should be utilized. But then they present another alternative: "We could deliberately engineer a comprehensive revolution, seeking utter

625. Sissar, Stephen. "Technology & Terrorism: Privatizing Public Violence." *IEEE Technology and Society Magazine*, Summer 1991. EPI1127
626. Cohen, Secretary of Defense William S. Hemispheric Cooperation in Combating Terrorism, Defense Ministerial of the Americas III. *Defense Viewpoint*, Dec. 1, 1996. EPI660
627. Metz, Steven and Klevit, James. "The Revolution in Military Affairs and Conflict Short of War." *Strategic Studies Institute, U.S. Army War College*, July 25, 1994. EPI1516

transformation rather than simply an expeditious use of new technology.”

The implications, the tradeoffs and the direction of this technology shift are being developed outside of public scrutiny and behind veils of secrecy. The issue of global terrorism is even leading to the unilateral abandonment of the ABM Treaty “because of the threat posed by rogue states” deploying weapons of mass destruction.

The Revolution in Military Affairs describes “people’s wars” as a shift to “spiritual” and “commercial” insurgencies, which they do not define well. They imply that these kinds of “insurgencies” represent national security risks to be defended against, which may be the case, but, who will decide what “people’s wars” to fight and who will determine what is “spiritually” or “commercially” correct?

The writer Aldous Huxley, in one of his last essays published before his death, expressed great concern about the direction of technology and its impact on future generations. More importantly, his perspective included an assessment of the impact of technological change on the belief systems of young people. He concludes that, over time, young people would be taught to undervalue the basic elements of democracies and individual freedom mainly through neglect in education curriculums.

Huxley is perhaps best known for his novel *Brave New World*, which first appeared in 1932. This novel was about a scientific dictatorship which sought to control the thought of citizens beyond the wildest dreams of any Hitler, Stalin or modern dictator. By 1958, five years before his death, Huxley had assessed the technology of his day and wrote the essay *Brave New World Revised*.⁶²⁸ In this work, he addressed the real concerns which were only fictionalized in his earlier book. When *Brave New World* was “revisited,” Huxley considered the subject not in fictional form but on a platform of the state of the technologies available in 1958. At that time, he believed that it was forty years ahead of where he expected it to be when he wrote *Brave New World*. “Propaganda in a Democratic Society,” “Propaganda Under a Dictatorship,” “Brainwashing,” “The Art of Selling,” “Over-Organization,” “Chemical Persuasion,” “Subconscious Persuasion,” “Hypnopaedia,” were all chapters in his essay as were sections delivering solutions including the chapters “Quality, Quantity, Morality,” “Education for Freedom,” and “What Can Be Done?” The questions and points he raised in the concluding paragraphs included:

“Does a majority of the population think it worth while to take a good deal of trouble, in order to halt and, if possible, reverse the current drift towards totalitarian control of everything? In the United States – and America is the prophetic image of the rest of the urban-industrial world – it will be a few years from now – recent public opinion

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polls have revealed that an actual majority of young people in their teens, the voters of tomorrow, have no faith in democratic institutions, see no objection to the censorship of unpopular ideas, do not believe that government of the people by the people is possible and would be perfectly content, if they can continue to live in the style to which the boom has accustomed them, to be ruled, from above, by an oligarchy of assorted experts.”

Granted, Huxley didn’t live to see the revolutions in thinking of the decades between 1960 and now. The ideas which concerned him then are the same as those which concern many of us now. The significant difference being Huxley “hadn’t seen anything yet” in terms of the technology of the next four decades. Technology had been doubling about every fifteen or so years between 1932 and 1958.

The advances in science in the last 40 years had all been relegated to science fiction of the early 1900s through the 1950s – science fiction which eventually became reality, almost as if whatever the mind of mankind could envision, it could eventually translate into material reality. In fact, some modern and ancient orders of thinkers believe that this is precisely the case in terms of human creativity in the context of the creation itself – the idea that we each individually contribute to the outward expression of the whole of creation. Perhaps they are right? Perhaps they are correct in terms of what we create culturally and societally within all of our institutions.

Huxley goes on to describe the risks of a complacent society which is well fed with the trappings of comfort and how this really emerges as a subservient, almost slave-like society, where people are happy with some form of social order devoid of democratic principles. Huxley quotes Dostoevsky’s parable in which the Grand Inquisitor declares, “in the end they will lay their freedom at our feet and say to us, ‘make us your slaves, but feed us.’” Consider the state of technology when the Grand Inquisitor is depicted and the transformation of systems of control by the time Huxley completed his work in the late 1950s and the incredible leap in the four decades since. In *Brave New World*, Huxley empowers the new authority – the dictator – with the miracles of science which are used for “manipulating the bodies of embryos, the reflexes of infants and minds of children and adults.” Unlike the Inquisitor of ages past merely talking about miracles and mysteries, the new scientific totalitarian uses science to create direct experience through drugs and other means to transform faith into experiential knowledge. Since Huxley sounded the alarm in 1958, the science he feared has become reality and gone even well beyond his imagination of what would emerge in coming decades. As we begin the next millennium we are challenged by the same risks magnified several times. In the last lines of *Brave New World Revised* Huxley writes:

⁶²⁸ *Brave New World Revised*, by Aldous Huxley, Harper and Row - Publishers 1958. EP11258

"Under a scientific dictator education will really work - with the result that most men and women will grow up to love their servitude and will never dream of revolution. There seems to be no good reason why a thoroughly scientific dictatorship should ever be overthrown."

"Meanwhile there is still some freedom left in the world. Many young people, it is true, do not seem to value freedom. But some of us still believe that, without freedom, human beings cannot become fully human and that freedom is therefore supremely valuable. Perhaps the forces that now menace freedom are too strong to be resisted for very long. It is still our duty to do whatever we can to resist them."

Other thinkers have continued to evaluate the trends in technology, some gaining the attention of mainstream media with their work. One of those not so well recognized by most readers is Zbigniew Brzezinski. For those who may not remember, Zbigniew Brzezinski was the National Security Advisor to President Jimmy Carter, a professor at Columbia University and a recognized global political and social strategist. His views have been reflected in public policy evolution around the world as an insider within the process of the social change which he writes about.

In Brzezinski's book, *Between Two Ages - America's Role in the Technetronic Era*,⁶²⁹ he presents a rational projection of the future. This book was first published in 1970 and sets out a vision for the future based on the historic development of the present at that time. Brzezinski had a very different view, having personally seen the impact of totalitarian regimes of Eastern Europe and was able to consider the consequences of proliferating technologies on cultures, societies, politics, business and virtually every area of human interaction. His vision of the likely events proved to be true. In fact, as we count down the last few days of 1999 it is clear that much of his vision has been realized. His cautions have also been heard.

Several points are made which warrant even greater consideration today given the state of these technologies and the directions in which our governments are moving. He believed that our rapidly changing global reality would alter the very foundation of our existence. At the same time local social systems would be fragmenting as a result of globalization - and in the process losing the higher aspects of who we are individually. The result of both an explosion in technology globally and implosion of its effects in each locality can only end in insecurity, tension and the stress. He goes on to observe that "Life seems to lack cohesion as environment rapidly alters and human beings become increasingly manipulable and malleable.

629. *Between Two Ages - America's Role in the Technetronic Era*, by Zbigniew Brzezinski, The Viking Press, 1970. EPI787

Everything seems more transitory and temporary: external reality more fluid than solid, the human being more synthetic than authentic. Even our senses perceive an entirely novel 'reality.'" He continues to describe his increasing concern about the possibility of biological and chemical control of populations violating the very foundation of who we each are as individuals. He goes on to quote the ideas of an expert in intelligence control as follows:

"I foresee the time when we shall have the means and therefore, inevitably, the temptation to manipulate the behavior and intellectual functioning of all the people through environmental and biochemical manipulation of the brain."⁶³⁰

The concerns which are raised by Brzezinski include the ideas of genetic manipulation, chemical control of populations, medical advances, scientific breakthroughs and media manipulation as contributors to a breakdown in self-perceptions. Extensive transplantation of global populations coupled with political, cultural and societal changes through the introduction of technology and access to global communications would create a highly controlled society. This controlled society would be the outgrowth, according to his predictions, of the insecurity and tension created by the impact of change resulting from technology. He analyses the impact of societal disruptions which cause mass migrations of populations and disruption of stable social and cultural structures. He describes the clash of values between young and old, the establishment and its order and new thinking, based on the changes, causing individuals to raise basic questions dealing with who we each are as people within the greater context of the whole presented by unavoidable integration and globalization.

Brzezinski raises the stakes in his presentation of what was theoretical then and is possible now when, in 1970, he quoted the work of Gordon J. F. MacDonald, a geophysicist specializing in problems of warfare. MacDonald believed that in the coming decades technology would advance so that artificially excited electronic bursts of energy could be created which would stimulate the electrified ionosphere above the earth in such a way as to create a returning electronic signal which could interact with the human body in a manner which would create behavioral changes in people over a large geographic area. He said, "...one could develop a system that would seriously impair the brain performance of very large populations in selected regions over an extended period...No matter how deeply disturbing the thought of using the environment to manipulate behavior for national advantages to some, the technology permitting such use will very probably develop within a few decades."⁶³¹

630. Testimony by Dr. D. Krach, Government Research Subcommittee of the Senate Government Operations Committee, as reported by *The New York Times*, April 3, 1968, p. 32. EPI1259
631. Unless Peace Comes, *A Scientific Forecast of New Weapons*, Edited By Nigel Calder, "Geophysical Warfare, How to Wreck the Environment," by Gordon J. F. MacDonald, pp. 181-205, 1968. EPI573

This technology now exists, as the evidence has shown in this book. The other important observation that Brzezinski made was that only the most advanced countries would possess this new technology. For the most part this is true for the most sophisticated technology, but increasingly, over the last few years, the idea that others, including terrorist organizations, might possess this technology leaks to the media and surfaces in congressional inquiries, parliamentary investigations and academic literature, many of which are drawn upon in the context of this book.

We have presented a much different view of the world of possibilities in addressing the technological revolution which might otherwise overwhelm us. We are proposing a counterrevolution. A revolution which empowers individuals to assert increased control over the factors regionally unique to each area of the globe. We propose, that while the need to communicate increasingly in a global context is unavoidable, mutual respect for the differences in philosophy, religion, politics and every other area of human activity is required. What is “good” in the context of one’s own region of the planet may *not* be “good” within another’s cultural context. The global vision presented in the work of Brzezinski suggests a movement toward a global vision and religious philosophy – a dissolution of individual regional differences substituted by an increasing number of external factors which create a homogeneous society and global culture. Our individual experience also shows that since 1970 when Brzezinski’s views were being expressed – the reality has begun to form and the resulting tensions are obvious to all. We take a different view, believing that regional belief systems and cultures have a right to their own evolution, or change, according to their own regionalized cultural context, even with increased international interactions. The need for mutual respect for very different groups must be translated into action. Values and beliefs must be respected as constituted regionally, with support from outside interests limited to providing resources when the external values and beliefs line up with those resident within a local population.

The vision of the modern globalist represents, to the greatest extent, the vision of economic interests. Commercial interests do not view humans as individuals but rather as “consumers” – a class of markets and market potentials not yet realized in the developing world or in the parts of the world previously inaccessible to multi-national economic interests. These economic interests eventually exploit the resources, labor and environments of the underdeveloped regions, creating another group of consumers in the process. The result of this shift has been devastating as crime rates increase, poverty rates rise, global hopelessness increases; and, illness and social tensions emerge coupled with the dissolution of local “norms” with the introduction of the conflicts presented by external influences.

The complexity of modern society also creates the need for increased transparency in governments and other institutions vested

with public authority. These institutions become impersonal and reduce individuals’ overall sense of power to reform or alter the direction of societal development. The sense of powerlessness is amplified in each impersonal interaction. What Brzezinski predicted was that if this feeling of isolation and loss of power were to pervade American culture, then the results would show themselves in withdrawal from political and social involvement and an individual inner retreat and outward conservatism. At the same time, an elite of “educated” people would emerge which is trained in technical areas, and believing that they possess “the answers.” These educated technicians in many cases *are not* exposed, in the course of their educations, to the underlying, truly important questions explored in studies of the humanities, philosophy and religion. On the other side of the issue, the “doctrine liberal erred in assuming that economic progress would prompt social well-being,” which underestimated the psychological and spiritual dimensions. It is these dimensions which we maintain are the foundation of human values and beliefs which when focused in regionally established goals yield culturally compatible results. Through democratic principles, increased transparency in governments and other authorities, open dialogue and mutual respect for the unique differences of each person and population, alternate possibilities are achievable. The old models have failed to create stability and are not balanced by underlying traditional values: they need to be abandoned. Those values begin with respect for personal freedom and individuality, access to justice and the desire to see each person achieve their highest and best potentials, which when expressed in action contribute to the whole of humanity.

The choices that this technology forces deal with the underlying ethical and moral questions regarding its use. Whether these technologies undermine our individual and collective rights will become increasingly clear as the state of the technology advances, presenting the greatest threat to the way of life of every person in every country of the world. The need to maintain traditional values in the front of our technological decisions must be made apparent to all.

Brzezinski goes on to suggest that a more directed and controlled society would be the outcome of our technological advances. He believed that the changes would be slow, gradual and continuous, becoming dominated by an “elite whose claim to political power would rest on allegedly superior scientific know-how. Unhindered by the restraints of traditional liberal values, this elite would not hesitate to achieve its political ends by using the latest modern techniques for influencing public behavior and keeping society under close surveillance and control. Technical and scientific momentum would then feed on the situation it exploits.” He went on to suggest that in this condition a charismatic leader could emerge who could exploit the mass media to gain public confidence and would, in piecemeal fashion, transform the United States into a highly controlled society. He further suggests that the liberal left would

"On top of allegations that police overreacted to protesters last week with tear gas, rubber bullets and concussion grenades, Siegel said protesters reported abuse at the hands of jail personnel - beatings and denial of medication, food and legal counsel." 648 The abuses were incredible and widespread throughout the crackdown. Had military personnel been fully utilized the abuses would have been even worse, based on the lack of police training by military and their conflict of mission. "But a senior King County police official, speaking on condition of anonymity, said even though every deputy on duty in Seattle has been trained to deal with riots, some are going to lose their tempers and act unprofessionally at times. They represent a minority, just as only a relatively small number of protesters are responsible for the worst conduct, the official said." 649 "The kick to the groin. The TV replay of a riot-clad police officer pursuing a young protester up a sidewalk and the painful-looking kick has become a symbol for an ugliness many thought they'd never see in Seattle." 650 "Downtown's no-protest zone also served to push demonstrators onto Capitol Hill. On Wednesday, residents who tried to get the protesters to leave were gassed and shot with rubber pellets. City officials defend the Capitol Hill confrontation, saying demonstrators had planned to try to seize the East precinct." 651 "Angry residents and human rights groups on Thursday demanded a probe of claims that riot police brutalized peaceful protesters as city officials admitted they botched security for an international meeting on trade. Besides pummeling innocent bystanders with teargas and rubber bullets, critics said police... trampled demonstrator's Constitutional rights of assembly and free speech." 652

In a hail of public outcry which was still ringing at the end of December 1999, the Seattle "police chief announced his resignation Tuesday, becoming the first political casualty of the violent protests that disrupted the World Trade Organization conference. Stamper said he will cooperate in any investigation of the police department's role in dealing with the demonstrations. However, he declined to answer several questions Tuesday about the rioting." 653 The Chief said he would cooperate but much was left unsaid. "In addition to hundreds of very visible Army National Guard troops called-up because of the civil disturbances in Seattle, more than 160 active duty military personnel, including a small number of Special Forces troops, were sent to Seattle by the Defense Department for the meeting of the World Trade Organization." 654

648. Rainer, Mark. "Most jailed WTO protesters are no longer behind bars." *Seattle Times*, Dec. 6, 1999. EPI1250
 649. *Ibid.*
 650. Flores, Michele Matassa. "Seattle left less naive as it counts physical, psychological costs." Dec. 5, 1999. EPI1252
 651. *Seattle Times* staff. "How did the police do? Everyone has an opinion." Dec. 6, 1999. EPI1253
 652. Stelzewicz, Chris. "Serene Seattle Faces Rights Abuse Allegations." Reuters, Dec. 3, 1999. EPI1254
 653. Klahn, Jim. "Seattle Police Head Quits After WTO." AP, Dec. 7, 1999. EPI1255
 654. CNN. "Troops sent to Seattle as part of terrorism contingency plan." CNN.com, Dec. 2, 1999. EPI1256

Vietnam

"The American effort in Vietnam was the best that modern military science could offer. The array of sophisticated weapons used against the enemy boggles the mind. Combat units applied massive firepower using the most advanced scientific methods. Military and civilian managers employed the best techniques of management science to support combat units in the field. The result was an almost unbroken series of American victories that somehow became irrelevant to the war. In the end, the best that military science could offer was not good enough.

The American military establishment considers low-intensity conflict to be manifested in four different ways: (1) counterterrorism (assuming there is a terrorist to counter); (2) peace keeping; (3) peacetime contingencies (quick, sharp, peacetime military actions like the air raid on Libya in 1986); and (4) insurgency/counterinsurgency.

The results of the intervention of France, the U.S. and the Russians were decidedly one-sided. The super powers of the first world overwhelmed their opponents with technology, equipment, and manpower and still lost the war. In the war of ideas its really true that the pen is mightier than the sword and ideas are harder than bullets and bombs. The wars were settled politically with the major powers leaving the country over which they fought - with the exception of Chechnya. Chechnya was unique in that it was surrounded by Russian territory: the rebels had nowhere to hide and no one to help them. While they made life difficult for the Russian military they would have a very difficult time in achieving their goals.

A common error in the cases studied here is readily apparent: the intervening power did not consider what it was that the people living in the country wanted for themselves. The major powers seemed to think that they already knew what was best for the common people of the country when in fact the politicians had no real idea what was wanted at the grassroots level.

In short, there is much to be learned by studying the history of insurgent warfare. Chief among them is that technology is not the answer to everything a country tries to do. In the end it is the human element that will persevere; it is the human element that makes the difference in winning and losing an insurgency. Without recognizing this, technology will be to no avail." 655

"An obsession with expensive weapons systems is robbing the nation of a chance to recast its defense strategy. The United States will spend more than \$265 on defense next year." 656 "...the Army's top officials are launching what they describe as an aggressive initiative to make the force lighter, faster and more lethal. They will experiment to

655. Hain, Raymond F. "The Use and Abuse of Technology in Insurgent Warfare." <http://www.altpower.maxwell.af.mil/airchronicles/cc/ EPI1677>
 656. Peters, Katherine. "Overkill." *Gov.Exec.com*, Dec. 1997. <http://www.govexec.com/features/129751.htm> EPI823

develop new battlefield equipment and an organizational structure they hope will ultimately supplant the old division structure that dates back to the 19th century and Napoleon's Grand Arme." 657

International Law

"For new weapons, however, even with respect to which no collective pronouncements have been made, each party to the Draft Additional Protocols to the 1949 Geneva Conventions will have to apply the principles of the law of war. This duty is emphasized in the proposed Article 34 of Protocol I: In the study, development, acquisition, or adoption of a new weapon, means, or method of warfare a High Contracting Party is under an obligation to determine whether its employment would, under some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party." 658 "By targeting highly dangerous technologies that could include directed energy, acoustic and microwave weapons, non-proliferation goals have a better chance of being at least partially met, the experts said." 659 "The fact remains that the scientists whose livelihoods were created by the Cold War have yet to secure their future in its aftermath. For western governments, the dilemma is how to justify maintaining an expensive scientific resource devoted to the military at a time when no single, clear threat is apparent." 660 In what direction shall these technologies go? How shall they be used and what standards will be applied to Americans and others? Should these weapons, prohibited against our external adversaries, continue to be used against our own citizens?

Within these concluding pages of *Earth Rising* - The Revolution, we propose a number of possible solutions - we note the following:

- We propose that the existing treaties which address chemical and biological weapons be revised to include bans on electromagnetic and acoustic weapons which effect human health or behavior.
- We propose that those treaties dealing with environmental, weather or geophysical manipulation be revised to consider the state of the technology and forbid both cross-border and domestic testing and development of these systems.

• We propose that the issue of privacy as it relates to new technology be considered in terms of the spirit and intent of the law to maintain

857. Richter, Paul. "Army sees signs on war of future." *Anchorage Daily News*, Oct. 12, 1989. EP1631

858. Roling, Prof. Bert A. et al. *The Law of War and Dubious Weapons*. SIPRI, 1976. Stockholm, Sweden. EP1474

859. Opall, Barbara. U.S. Experts: Focus Arms Control Goals. *Defense News*, Nov. 24-30, 1987. EP1420

860. Shukman, David. *The Sorcerer's Challenge*. Hodder & Stoughton, 1995. EP11137

the right of people to a private life. We can not allow the invasion of heath and home by either government or private persons.

• We further propose that an international "whistleblower" system be established. Such a system would include an international ombudsman's office. This office would be a place where any person could go and make any disclosure that the individual feels needs to be a matter of public policy review. The individual bringing the complaint would be protected in terms of confidentiality and supported, if need be, until the issues are resolved. This would allow people of conscience, whether they emerge from the government or private sectors, an opportunity to clear their conscience by speaking out on things that they have seen. This would allow people to bring forward the truth in the greater interests of humanity.

These things represent some of our ideas. We know that they are possible. It is time to expose to the light of truth those things hidden in darkness by institutions which have exempted themselves from public scrutiny for interests which no longer serve the cause of mankind. We call for the initiation of a counterrevolution based on truth, justice and freedom.

The adoption of new technological ideas and their potential impact on our lives is increasingly more important and relevant. The present age of discovery is offering both challenges and points of decision for our future directions. At the same time that we are presented great possibilities in science, we are also faced with the darker side of technology.

Historically, mankind has always coupled political structures with a method of influencing the will of the political leadership. Enforcement has usually come at the end of a gun barrel by developing and maintaining military organizations. Ultimately, the law of force and power determines who's political will shall prevail. In the last hundred years, politicians have increasingly recognized that technology and science offer new mechanisms for control. World War I and World War II brought a clear recognition of the role of science and technology in creating the most powerful war machines in recorded history. Science offers governments a seemingly endless supply of new innovations for maximizing their destructive capabilities.

Innovations based on very complex science have also led to the greatest concentration of wealth ever contemplated by industry. Trillions of dollars have been dedicated to developing the best systems for destroying people and property. Huge transfers of wealth have been made from taxpayers to corporate bottom lines.

At the end of the cold war people were relieved and hoped for a shift in resources to more productive ends. Many of us realized that although the largest risks were seemingly over, new threats to stability would emerge. The need for strong armies is far from over and will

several of these scientists over to work in our defense industry. The possibility of organizing teams in Russia for the purpose of exploring specific problems in science is a great opportunity and may represent a dimension to the "peace dividend" which is otherwise being missed. Just throwing money at the problem is not the answer. Developing missions which have goals of benefit to the rest of us would be much more productive. The western countries have the ability to organize projects which can utilize the skills of these scientists to contribute to all of our lives.

The situation in Russia has been poorly reported in the western media. The disintegration has not been well understood by other than high level policy planners. There is increased concern, even fear, that the lack of a structured society will result in an even more chaotic situation. It was surprising to us to find out the true limits of knowledge in terms of the functioning of capitalistic systems. There are no points of reference for citizens of the former Soviet Union in terms of understanding those systems. How capitalism really works, aside from theoretical descriptions, is a great mystery and the assumptions that they reach are far off the mark. The need for infusing entrepreneurial thinking into their society, coupled with specific goals and outcomes, could build solid bridges for the future stability of the region. Without stability, the worst is possible and most likely will come to pass.

In the West we hear about the political corruption, the Russian mafia, the disintegration of the economy and support systems and the increasing level of social and political unrest. However, perhaps the greatest problem is one of leadership and confidence in the leadership. Much of the system has been reduced to the modern equivalent of the "survival of the fittest," without rules or order - something between predatory capitalism and a police state run by competing thieves has been created.

Russia's contribution to culture, through its people, has been noted throughout history. In literature, art, sports, science and virtually every area of human interactions, exceptional performance has been seen. Over the last seventy years, many of the scientific innovations created in Russia have been hidden from the rest of the world just as many of our own innovations have been hidden by the military-intelligence community in the west. A paradox now exists in that the hidden science of the east is becoming known while much of ours remains hidden. The new contributions possible from the former Soviet Union are just now being discovered at the same time as the risk of disintegration presents itself.

In the west, we are on occasion thrown a "bone" of information for the public to chew on. Some of these recent "bones" include electromagnetic weapon systems, CIA involvement in remote viewing and physic research, and space related innovations, among others. Contrast this situation with Russia, where the knowledge of science is pouring out freely for the first time in seventy years.

Interesting issues are emerging in science, some very clear, while some are highly speculative. What is obvious is that a great deal can be either lost or preserved at this point in our history.

Future Possibilities

A historic view of what happened in Russia in terms of keeping up with the west was, to the greatest extent, the outgrowth of their ability to develop science. What could not be built in productivity, distribution systems and their economy was made up for in scientific innovation. What places modern governments on an equal footing is their knowledge and control of science and technology. Science and technology are the handmaidens of political organizations. These represent the power of modern military machines and systems of control. While the systems of control continue to disintegrate in Russia to the point of near economic and political anarchy, scientists ill equipped to deal with either are being lost in the confusion and reduced to the level of basic survival. What is the greatest loss in all of this? It is the ability of humankind to use the knowledge in a way which benefits society. Russian scientists are being picked up by some private companies, other governments and most likely by criminal elements. The intellectual investment of all of the Russian people which was the outgrowth of their suppression and sacrifice over seventy years is being lost. The science of Russia, freed from the military, in combination with the productivity of the west, could present a needed core of innovative solutions to many problems in science. Moreover, the services of such scientists could be oriented towards a common interest through a distribution system based on capitalistic principles. In other words, a system that for seventy years attempted to develop a view of collective thinking for the benefit of society can now be synthesized into an individually driven system operating on a foundation of capitalistic distribution and democratic principals. This combination of a "collective good" driven by individual effort could yield combinations that solve significant problems.

Existing systems do not have the right level of independence in either the west or the east. A new system which becomes the outgrowth of organizational innovation will likely be what brings about the greatest possibility. Time is of the essence as science continues to be lost.

Solutions in Innovative Science

A clearing house for innovative science should be undertaken by organizations big enough to fund such efforts. Such a clearing operation would be the "Intelligence Link" for new ideas in humane science. The idea is relatively simple. A mechanism for connecting new ideas, scientists, business talent and financial resources could be established. The funding for such a project could come from revenues



I am a contract stalked, former student leader and political whistle-blower who became a targeted and tortured individual in 2004 in my graduate student dorm room after serving on the Oregon State Board of Higher Education.

I have a failed, pro se federal case where the U.S. government says that it can't be sued for torture, enslavement and 94 pages of other crimes perpetrated against myself and my family, by federal fusion center sponsored gangs of Anti-Social Personality Disorder terrorists, attackers, stalkers and criminals.

1 of 9

I am Remote Neural,
Monitored, Microwave Auditory
Effect abused, Image to
Skull victimized and I was
remote torture, rectal tortured
for six years and had 6
hemorrhoids removed.

In Tualatin, Oregon a criminal
gang invaded and I was
nearly suicided by remote
torture techniques, that
really was a failed murder
attempt.

Jeffrey Edward Taylor, aka
Timothy Darrell Young v.
United States of America,
Federal Government can be
found in the P.A.C.E.R.
Legal Database: Civ. No
3:21-cv-00199-AA
2 of 9

Please consider my federal case in this plea of me to have the Court's permission to change my name back to my birthname. It is in the public interest to do so.

Criminals posing as government officials have modified my medical records, and even my very limited arrest record back in 2019. Out of whistleblower retaliation I have been falsely accused and slandered as a child sex addict, international terrorist and drug trafficker. I am none of these things but evidence itself is faked to keep me without Court, rational or human rights.

3 of 9

Why? It was political
and these gangs of security
industry stalkers employ some
real, DSM-5 psychopaths,
sociopaths, narcissists and
anti social personality disorder
burdens on society.

That is who tortures and
stalks and ~~commits~~ all
the stated crimes in my
federal case, against myself,
my family and the community
of Oregon, the U.S.A. and
the world.

Our, the T.I. community's various
sense organs are deceived
by "controlled effects" as
defined by the U.S. Air Force
using technologies for

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"Military Operations Other
than War" on our domestic
population. Reportedly the
Department of Defense gave
"controlled effects" technology
to the Department of Justice
at or around the time of
Sept. 11th or earlier, in secret.

I have been deceived,
tortured slave of this tech
since 2004. In 2019 I
was tricked into killing a
what appeared to me, a 17
year old talking dog.

The dog was not talking but
the "controlled effects" of
this technology made it look
like it was. I was intoxicated,
regret it and no better now
and gave up drinking.

Sotg

Also, after getting attacked
by a group of my roommates
associates back in Oregon
City under my birth name
Timothy Darrell Young, G.S. M.P.A.
I was picked up and spent a
night in the drunk tank for
calling the police, too many times.

That is the extent of my
trouble with crimes I committed,
but the trouble with crimes
committed against me is
onopion, overwhelming and
was nearly deadly.

I want my birthname back
because voice to skull human
rights abusers coerced me
into changing my name, using
extreme undue influence
to do so,
b of 9

changing

in the first place lying
that it would help me
hide from the organized
crime groups abusing the
secret surveillance systems
and us T.I.

~~Changing~~ my name did not
help me hide from the
electronic assailants and
Security, industry Anti-Social
Personality disorder stalkers
of myself and my family.

I am in the care of the
Oregon State Hospital for
taking the life of the dog,
an out of character huge error
that I was tricked into.
I am not an abuser of animals
or people. I am a master

7 of 9

of Public administration
who has been tortured
since grad school.

Allowing me to change
my name back to my
birthname will help me
combat elaborate
identity theft against
me, community slander
against me and make it
harder to cover up these
organized criminal attacks
on myself and my family.
All that is in the
community interest I
humbly hope the court
will agree. I want to
request a video appearance
of me from the Oregon
State Hospital for a court
date where I can
8 of 9

ask and answer any questions the Honorable Judge may have.

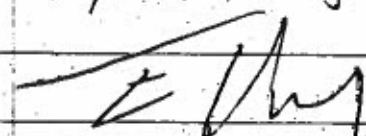
I have been Jeff Taylor only since 2016/2017. Changing my name did not hide me from organized crime.

It is in the public's best interest to allow me to change my name back to my birthname, a good name in higher education, advocacy, leadership and a little in ~~open~~ public Affairs.

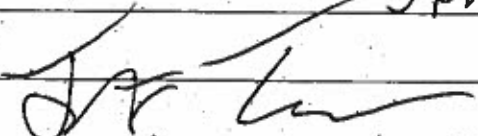
Thank you,

1/3/21

5pm


Timothy D. Jones

AKA


Jeff Ed. Taylor

90#9

This is the century of the brain and the mind. The technologies that have advanced, under cover of secrecy and national security, now have the power to either enslave us or free us to our higher potentials. These technologies will impact our consciousness itself and as a result require an invigorated public debate, in the light of day. At the same time, there is hope and great possibility in these areas of science. The first part of this book deals with the sinister side of *Controlling the Human Mind* with the second part exploring the possibilities that are emerging with new brain and mind enhancing technologies. The greatest threats and the greatest possibilities reside within the core of who we are and what happens in the center of our minds, the seat of our souls.

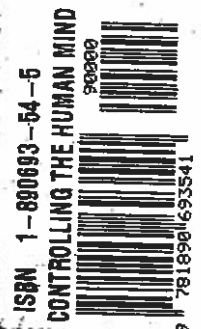


"The best deterrent that we have against acts of terrorism is to find out who is conspiring, who has the material, where they are getting it, who they are talking to, what are their plans. In order to do that, in order to interdict the terrorists before they set off their weapon, you have to have that kind of intelligence-gathering capability, but it runs smack into our constitutional protections of privacy. And it's a tension which will continue to exist in every free society - the reconciliation of the need for liberty and the need for law and order...that once these weapons start to be exploded people will say, 'Protect us. We're willing to give up some of our liberties and some of our freedoms, but you must protect us.' And that is what will lead us into this 21st century, this kind of Constitutional tension of how much protection can we provide and still preserve essential liberties."

Secretary of Defense William S. Cohen
Defense Viewpoint, December 1, 1998

"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. It would also appear possible to create high fidelity speech in the human body, raising the possibility of covert suggestion and psychological direction... Thus, it may be possible to 'talk' to selected adversaries in a fashion that would be most disturbing to them."

United States Air Force Scientific Advisory Board
New World Vistas: Air and Space Power For The 21st Century



\$18.00 US

ISBN: 1-890693-54-5



Controlling the Human Mind

The Technologies of Political Control

OR

Tools for Peak Performance

Dr. Nick Begich

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR LANE COUNTY

In the Matter of

JEFFREY EDWARD TAYLOR BS MPA,

Petitioner.

Case No. 21CV22507

ORDER DENYING PETITION FOR
CHANGE OF NAME

THIS MATTER came before the Court on July 14, 2020, on Petitioner's Petition for Change of Name, filed June 3, 2020; the Court having reviewed the file, and now being fully advised;

THE COURT FINDS pursuant to ORS 33.410, the change of name is not consistent with the public interest;

IT IS HEREBY ORDERED that the Petition for Change of Name, filed June 3, 2020, is denied.

Signed: 8/16/2021 01:37 PM



Kamala H. Shugar, Circuit Court Judge

Prepared by: T. Cortright



Patents related to behavior modification, targeting, "mind control" etc..

I wonder if you can help me post this out on telegram... i figured if you havetelegram on computer its more easy to cospypaste.?

This is a small part of my research ,, i have spent too much time on this to figure it out haha..

(maybe got a bit long .. I should PM it to the profile "Expose Vac Dangers.. ") :

<https://www.soundlazer.com/product/sl-01-open-source-parametric-speaker/>

<https://patents.google.com/patent/US6506148B2/en>

<https://patents.justia.com/patent/10709421>

<https://patents.justia.com/patent/10735106>

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Actual Patents Of Mind

Control And Behavior

Modification Technology

Compiled by Theresa de Veto

SURFING THE APOCALYPSE

http://www.surfingtheapocalypse.com

http://www.surfingtheapocalypse.com/intelligence2.html#patentscontrol

8-25-00

US PATENT --4,717,343 --METHOD OF CHANGING A PERSON'S BEHAVIOR--A method of conditioning a person's unconscious mind in order to effect a desired change in the person's behavior which does not require the services of a trained therapist. Instead the person to be treated views a program of video pictures appearing on a screen. The program as viewed by the person's unconscious mind acts to condition the person's thought patterns in a manner which alters that person's behavior in a positive way. SOURCE: Judy Wall, Mike Coyle and Jan Wiesemann. Paranoia Magazine Issue 24 Fall 2000 -Article -'Technology to Your Mind' - By Judy Wall

US PATENT 5,270,800 --SUBLIMINAL MESSAGE GENERATOR--A combined subliminal

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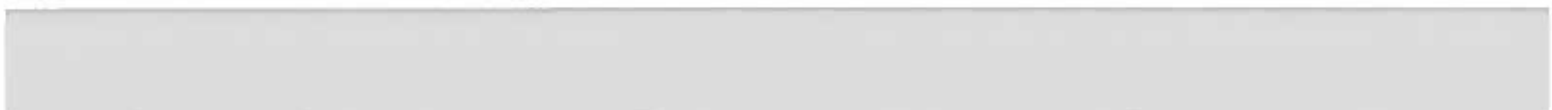
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and supraliminal message generator for use with a television receiver permits complete control of subliminal messages and their manner of presentation. A video synchronization detector enables a video display generator to generate a video message signal corresponding to a received alphanumeric text message in synchronism with a received television signal. A video mixer selects either the received video signal or the video message signal for output. The messages produced by the video message generator are user selectable via a keyboard input. A message memory stores a plurality of alphanumeric text messages specified by user commands for use as subliminal messages. This message memory preferably includes a read only memory storing predetermined sets of alphanumeric text messages directed to differing topics. The sets of predetermined alphanumeric text messages preferably include several positive affirmations directed to the left brain and an equal number of positive affirmations directed to the right brain that are alternately presented subliminally. The left brain messages are presented in a linear text mode, while the right brain messages are presented in a three dimensional perspective mode. The user can control the length and spacing of the subliminal presentations to accommodate differing conscious thresholds. Alternative embodiments include a combined cable television converter and subliminal message generator, a combine television receiver and subliminal message generator and a computer capable of presenting subliminal messages. SOURCE: Judy Wall, Mike Coyle and Jan Wiesemann. Paranoia Magazine Issue 24 Fall 2000 -Article -'Technology to Your Mind' - By Judy Wall

US PATENT 5,123,899 --METHOD AND SYSTEM FOR ALTERING CONSCIOUSNESS--A system for altering the states of human consciousness involves the simultaneous application of multiple stimuli, preferable sounds, having differing frequencies and wave forms. The relationship between the frequencies of the several stimuli is exhibited by the equation $g = s \cdot \sup{n/4} \cdot \text{multidot} \cdot f$ where: f =frequency of one stimulus; g =frequency of the other stimuli of stimulus; and n =a positive or negative integer which is different for each other stimulus. ALSO SEE: US PATENT --5,289,438 -- METHOD AND SYSTEM FOR ALTERING CONSCIOUSNESS SOURCE: Judy Wall, Mike Coyle and Jan Wiesemann. Paranoia Magazine Issue 24 Fall 2000 -Article -'Technology to Your Mind' - By Judy Wall

US PATENT 4,877,027--HEARING SYSTEM --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.

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US PATENT 6,011,991--COMMUNICATION SYSTEM AND METHOD INCLUDING BRAIN WAVE ANALYSIS AND/OR USE OF BRAIN ACTIVITY--A system and method for enabling human beings to communicate by way of their monitored brain activity. The brain activity of an individual is monitored and transmitted to a remote location (e.g. by satellite). At the remote location, the monitored brain activity is compared with pre-recorded normalized brain activity curves, waveforms, or patterns to determine if a match or substantial match is found. If such a match is found, then the computer at the remote location determines that the individual was attempting to communicate the word, phrase, or thought corresponding to the matched stored normalized signal.

US PATENT 4,858,612 - HEARING DEVICE --A method and apparatus for simulation of hearing in mammals by introduction of a plurality of microwaves into the region of the auditory cortex is shown and described. A microphone is used to transform sound signals into electrical signals which are in turn analyzed and processed to provide controls for generating a plurality of microwave signals at different frequencies. The multifrequency microwaves are then applied to the brain in the region of the auditory cortex. By this method sounds are perceived by the mammal which are representative of the original sound received by the microphone.

US PATENT 3,951,134 - APPARATUS AND METHOD FOR REMOTELY MONITORING AND ALTERING BRAIN WAVES--Apparatus for and method of 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 re-transmitted by the brain to a receiver where it is demodulated and amplified. The demodulated waveform is then displayed for visual viewing and 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.

US PATENT 5,159,703 - SILENT SUBLIMINAL PRESENTATION SYSTEM --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.

US PATENT 5,507,291- METHOD AND AN ASSOCIATED APPARATUS FOR REMOTELY DETERMINING INFORMATION AS TO A PERSON'S EMOTIONAL STATE

US PATENT: US5629678:IMPLANTABLE TRANSCEIVER-Apparatus for Tracking And



Recovering Humans.

US PATENT FOR BARCODE TATTOO--Method for verifying human identity during electronic sale transactions. A method is presented for facilitating sales transactions by electronic media. A bar code or a design is tattooed on an individual. Before the sales transaction can be consummated, the tattoo is scanned with a scanner. Characteristics about the scanned tattoo are compared to characteristics about other tattoos stored on a computer database in order to verify the identity of the buyer. Once verified, the seller may be authorized to debit the buyer's electronic bank account in order to consummate the transaction. The seller's electronic bank account may be similarly updated.

US PATENT 5,539,705 - ULTRASONIC SPEECH TRANSLATOR AND COMMUNICATIONS SYSTEM--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 way of acoustical pressure waves across a carrier medium, including gases, liquids, or solids, and reconvertng the ultrasonic acoustical pressure waves back to the original audio signal. The ultrasonic speech translator and communication system (20) includes an ultrasonic transmitting device (100) and an ultrasonic receiving device (200). The ultrasonic transmitting device (100) accepts as input (115) an audio signal such as human voice input from a microphone (114) or tape deck.

US PATENT 5,629,678 - PERSONAL TRACKING AND RECOVERY SYSTEM--Apparatus for tracking and recovering humans utilizes an implantable transceiver incorporating a power supply and actuation system allowing the unit to remain implanted and functional for years without maintenance. The implanted transmitter may be remotely actuated, or actuated by the implantee. Power for the remote-activated receiver is generated electromechanically through the movement of body muscle. The device is small enough to be implanted in a child, facilitating use as a safeguard against kidnapping, and has a transmission range which also makes it suitable for wilderness sporting activities. A novel biological monitoring feature allows the device to be used to facilitate prompt medical dispatch in the event of heart attack or similar medical emergency. A novel sensation-feedback feature allows the implantee to control and actuate the device with certainty.

US PATENT 5,760,692 - INTRA-ORAL TRACKING DEVICE--An intra-oral tracking device adapted for use in association with a tooth having a buccal surface and a lingual surface, the apparatus comprises a tooth mounting member having an inner surface and an outer surface, the inner surface including adhesive material.

US PATENT 5,868,100 - FENCELESS ANIMAL CONTROL SYSTEM USING GPS LOCATION



INFORMATION--A fenceless animal confinement system comprising portable units attached to the animal and including means for receiving GPS signals and for providing stimulation to the animal. The GPS signals are processed to provide location information which is compared to the desired boundary parameters. If the animal has moved outside the desired area, the stimulation means is activated. The signal processing circuitry may be included either within the portable unit or within a separate fixed station.

US PATENT 5,905,461 - GLOBAL POSITIONING SATELLITE TRACKING DEVICE--A global positioning and tracking system for locating one of a person and item of property. The global positioning and tracking system comprises at least one tracking device for connection to the one of the person and item of property including a processing device for determining a location of the tracking device and generating a position signal and a transmitter for transmitting said position signal.

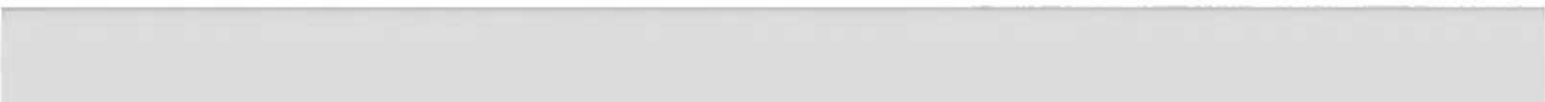
US PATENT 5,935,054 - MAGNETIC EXCITATION OF SENSORY RESONANCES--The invention pertains to influencing the nervous system of a subject by a weak externally applied magnetic field with a frequency near 1/2 Hz. In a range of amplitudes, such fields can excite the 1/2 sensory resonance, which is the physiological effect involved in "rocking the baby".

US PATENT 5,952,600 -ENGINE DISABLING WEAPON-- A non-lethal weapon for disabling an engine such as that of a fleeing car by means of a high voltage discharge that perturbs or destroys the electrical circuits.

US PATENT 6,006,188 - SPEECH SIGNAL PROCESSING FOR DETERMINING PSYCHOLOGICAL OR PHYSIOLOGICAL CHARACTERISTICS USING A KNOWLEDGE BASE

US PATENT 6,014,080 - BODY WORN ACTIVE AND PASSIVE TRACKING DEVICE -- Tamper resistant body-worn tracking device to be worn by offenders or potential victims for use in a wireless communication system receiving signals from a global positioning system (GPS).

US PATENT 6,017,302 - SUBLIMINAL ACOUSTIC MANIPULATION OF NERVOUS SYSTEMS --In human subjects, sensory resonances can be excited by subliminal atmospheric acoustic pulses that are tuned to the resonance frequency. The 1/2 Hz sensory resonance affects the autonomic nervous system and may cause relaxation, drowsiness, or sexual excitement, depending on the precise acoustic frequency near 1/2 Hz used. The effects of the 2.5 Hz resonance include slowing of certain cortical processes, sleepiness, and disorientation. For these effects to occur, the acoustic intensity must lie in a certain deeply subliminal range. Suitable apparatus consists of a portable battery-powered source of weak subaudio acoustic radiation. The method



and apparatus can be used by the general public as an aid to relaxation, sleep, or sexual arousal, and clinically for the control and perhaps treatment of insomnia, tremors, epileptic seizures, and anxiety disorders. There is further application as a nonlethal weapon that can be used in law enforcement standoff situations, for causing drowsiness and disorientation in targeted subjects. It is then preferable to use venting acoustic monopoles in the form of a device that inhales and exhales air with subaudio frequency.

US PATENT 6,051,594 - METHODS AND FORMULATIONS FOR MODULATING THE HUMAN SEXUAL RESPONSE--The invention is directed to improved methods for modulating the human sexual response by orally administering a formulation of the vasodilator phentolamine to the blood circulation and thereby modulating the sexual response on demand.

US PATENT 6,052,336 - APPARATUS AND METHOD OF BROADCASTING AUDIBLE SOUND USING ULTRASONIC SOUND AS A CARRIER--An ultrasonic sound source broadcasts an ultrasonic signal which is amplitude and/or frequency modulated with an information input signal originating from an information input source. If the signals are amplitude modulated, a square root function of the information input signal is produced prior to modulation. The modulated signal, which may be amplified, is then broadcast via a projector unit, whereupon an individual or group of individuals located in the broadcast region detect the audible sound.

MainPage

<http://www.rense.com>

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<https://patents.google.com/patent/US5270800A/en>

<https://patents.google.com/patent/US5159703A/en>

<https://patents.google.com/patent/US6470214B1/en>

[1. US3014477 Hypnotic Inducer \(Mind Control Machine\) Carlin 1956](#)

[2. US3060795 Apparatus For Producing Visual Stimulation \(Subconscious](#)



Transmission via Movie Film) Corrigan etal 1958

3. US3278676 Apparatus For Producing Visual and Auditory Stimulation

(Subconscious Transmission via TV) Becker 1958

4. US3393279 Nervous System Excitation Device Flanagan 1962

5. US3563246 Method and Apparatus For Improving Neural Performance In

Human Subjects By Electrotherapy Puharich 1967

6. US3629521 Hearing Systems (RF/Microwave) Puharich 1970

7. US3712292 Method Of and Apparatus For Producing Swept Frequency
Modulated Audio Signal Patterns For Inducing Sleep (Brain Frequencies
Broadcast) Zentmayer, Jr. 1971

8. US3884218 Method of Inducing and Maintaining Stages Of Sleep in the Human
Being (FFR - Frequency Following Response Microwave) Monroe 1970

9. US3951134 Apparatus and Method For Remotely Monitoring and Altering

Brain Waves (RF/Electromagnetic Waves) Malech 1974

10. US 4335710 Device for the induction of specific brain wave patterns

Williamson 1980

11. US4395600 Auditory Subliminal Message System and Method (Subliminal

Brainwash via Music or Other Sound) Lundy 1980

12. US4717343 Method Of Changing A Person's Behavior (Subconscious

Brainwash via Video) Densky 1986

13. US 4777529 Auditory Subliminal Programming System (Silent Brainwash Via
Music or Other Sound) Schultz/Dolejs 1987



14. US4834701 Apparatus For Inducing Frequency Reduction In Brain Wave (FFR

- Brain Frequencies Transmission) Masaki 1985

15. US 4858612 Hearing Device (Microwave Hearing) Stocklin 1983

16. US4877027 Hearing System (Microwave Hearing via open air Broadcast)

Brunkan 1988

17. US5036858 Method and apparatus for changing brain wave frequency

Carter 1990

18. US 5159703 Silent Subliminal Presentation System (aka Silent Sound -

Microwave) Lowery 1989

19. US5356368 Method Of and Apparatus For Inducing Desired States Of

Consciousness (FFR/EEG Waveforms By Broadcast) Monroe 1991

20. US6017302 Subliminal acoustic manipulation of nervous systems Loos 1997

21. US5774088 Method and System For Warning Birds Of Hazards (Microwave

Hearing) Kreithen 1997

22 US5889870 Acoustic Heterodyne Device and Method (Ultrasound.

Ventriloquist Effect.) Norris 1996

23. US6011991 Communication System and Method Including Brain Wave

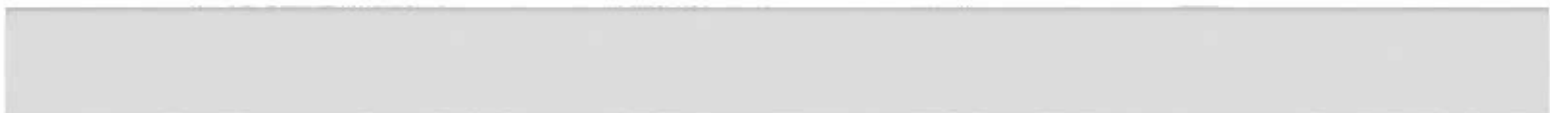
Analysis and/or Use of Brain Activity (Remote Viewing) Mardirossian 1998

24. US6052336 Apparatus and Method Of Broadcasting Audible Sound Using

Ultrasonic Sound As A Carrier (Ultrasound) Lowery 1998

25. US6470214 Method and device For Implementing The Radio Frequency

Hearing Effect (Microwave Hearing) US Air Force/O'Loughlin/Loree 1992



26. US 6587729 Apparatus For Audibly Communicating Speech Using The Radio Frequency Hearing Effect (Microwave Hearing)

US Air Force/O'Loughlin/Loree 2002

27. US 7473097 RFID tracking of patient-specific orthodontic materials

Bartingale 2004

28. US20120126948 Identification System and Methods (RFID attached to dental structure) Brunski 2011

29. US patent 8,067,937 B2/ EU patent EP 2035818 A1 Probe and system for electron spin resonance imaging Israel Institute of Technolog 2007

30. US patent 4,110,681 NMR (nuclear magnetic resonance) field frequency lock system IBM 1977

31. EU Patent EP0909392 B1 Method of electron spin resonance enhanced magnetic resonance imaging Amersham Health AS Picker Nordstar OY

32. World Intellectual Property Organization W02002015783 A1 / EU patent EP1312306A1 Method and apparatus for measuring electron spin resonance

Japan 2001

33 US20120245659A1/ WO 2011025830 A1 Systems and methods for

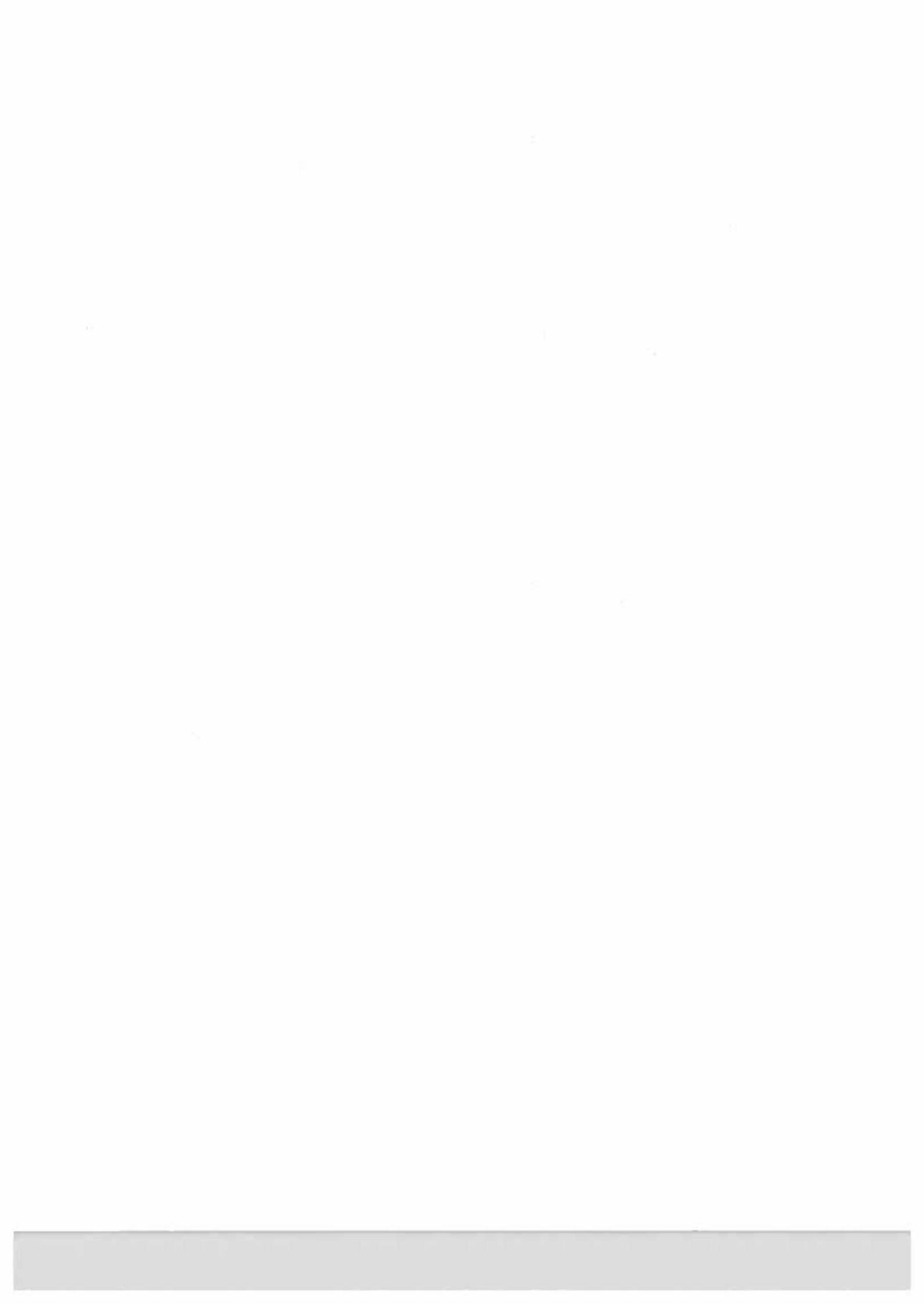
stimulation of neuronal activity Argus Neurooptics, LLC 2012

34 US20130013030 A1 Method and apparatus of pulsed infrared light for the inhibition of central nervous system neurons Vanderbilt University 2012

35. US patent 6,526,318 Stimulation method for the sphenopalatine ganglia, sphenopalatine nerve, or vidian nerve for treatment of medical conditions

Ansarinia; Mehdi M. 2000

36 US patent 6,753,690 Interferometric signal processing apparatus



Poseidon Scientific Instruments Pty Ltd 2001

37 US patent 6420872 B1 Probe for detecting a transient magnetic resonance

signal US NAVY 1998

38 US 5608321 A Method and apparatus for detecting target species having quadropolar nuclei by stochastic nuclear quadrupole resonance (NQR)

US NAVY 1995

39. US 5233300 A Detection of explosive and narcotics by low power large sample volume nuclear quadrupole resonance (NQR) US NAVY 1991

40 US 4,691,164 Nuclear magnetic resonance (NMR) transmitter and receiver system Haragashira; Motoji (Otagawa, JP) 1986

Note: quote from patents #33, #34, #35, #37

#33. US patent US20120245659 Systems and methods for stimulation of neuronal activity

[0009] A wide array of medical conditions and associated pain that occur in addition to the various types of migraine and other headaches are all connected to neuronal activity in the head. In addition to the pain, other conditions include movement disorders, epilepsy, cerebrovascular diseases, autoimmune diseases, sleep disorders, autonomic disorders, urinary bladder disorders, subnormal metabolic states, disorders of the musculature system and neuropsychiatric disorders to name a few

#34 US patent 20130013030 A1 METHOD AND APPARATUS OF PULSED INFRARED LIGHT FOR THE INHIBITION OF CENTRAL NERVOUS SYSTEM NEURONS

[0046] Infrared neural stimulation (INS) represents a relatively new stimulation modality that exhibits high spatial precision and can be delivered in a contact free method for the stimulation of neural tissue [Wells et al., 2005b]. Investigations into the use of pulsed infrared light to stimulate neural tissue began in the peripheral nervous system (PNS) where it is demonstrated the ability of INS to



reliably evoke action potentials in peripheral nerves. Pulsed infrared light can also stimulate auditory ganglion cells in the cochlea with high spatial precision establishing INS as a possible alternative to electrical stimulation for cochlear implants [Izzo et al., 2008]; [Rajguru et al., 2010]; [Richter et al., 2010]. Most

recently, embryonic quail hearts were paced by pulsed infrared light, suggesting the possibility of optically based pacemakers [Jenkins et al., 2010]. In the central nervous system (CNS) the first application of INS was demonstrated in thalamocortical brain slices [Cayce et al., 2010]

<https://patents.google.com/patent/US3704345A/en>

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Silent subliminal presentation system

Dec 28, 1989

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. The modulated carriers may be transmitted directly in real time or may be conveniently recorded and stored on mechanical, magnetic or optical media for delayed or repeated transmission to the listener.

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<https://patents.justia.com/patent/5159703>

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Apparatus for inducing frequency reduction in brain wave

Abstract

Frequency reduction in human brain wave is inducible by allowing human brain to perceive 4-16 hertz beat sound. Such beat sound can be easily produced with an apparatus, comprising at least one sound source generating a set of low-frequency signals different each other in frequency by 4-16 hertz. Electroencephalographic study revealed that the beat sound is effective to reduce beta-rhythm into alpha-rhythm, as well as to retain alpha-rhythm.

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<https://patents.google.com/patent/US4834701A/en>

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Method for influencing subconscious mind through audio suggestion for changing



acquired behavior of user, involves inputting information tailored to changing behavior in acoustic device, and converting information into acoustic information
Abstract

The invention relates to a method for influencing the subconsciousness of a user by means of audio suggestion to change an untrained behavior. Among other things, the method includes permanently irradiating the user with information in a frequency range imperceptible to the human ear. The invention further relates to an apparatus with which the subconsciousness of a user can be influenced by constant irradiation with information in a frequency range imperceptible to the human ear in order to change an untrained behavior.

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<https://patents.google.com/patent/DE102012009060A1/en>

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial for ensuring transparency and accountability in the organization's operations.

2. The second part outlines the various methods and tools used to collect and analyze data. This includes both traditional manual methods and modern digital technologies, highlighting the benefits of each approach.

3. The third part focuses on the challenges and risks associated with data management, such as data loss, security breaches, and compliance issues. It provides strategies to mitigate these risks and ensure the integrity of the data.

4. The fourth part discusses the role of data in decision-making and strategic planning. It explains how data-driven insights can help organizations identify trends, opportunities, and areas for improvement.

5. The fifth part covers the legal and ethical considerations surrounding data collection and use. It discusses the importance of obtaining consent, protecting privacy, and adhering to relevant regulations.

6. The sixth part provides a summary of the key points and offers recommendations for implementing a robust data management system. It encourages organizations to regularly review and update their data practices to stay current with best practices and technological advancements.



distributed antenna system

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US10459411B2 2011-04-15 2019-10-29 Astrolink International Llc System and method for single and multizonal optimization of utility services delivery and utilization
US10498044B2 2016-11-03 2019-12-03 At&T Intellectual Property I, L.P. Apparatus

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for configuring a surface of an antenna

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US10601494B2 2016-12-08 2020-03-24 At&T Intellectual Property I, L.P. Dual-band communication device and method for use therewith

US10637149B2 2016-12-06 2020-04-28 At&T Intellectual Property I, L.P. Injection molded dielectric antenna and methods for use therewith

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Family To Family Citations

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<https://patents.google.com/patent/US5159703A/en>

"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. The modulated carriers may be transmitted directly in real time or may be conveniently recorded and stored on mechanical, magnetic or optical media for delayed or repeated transmission to the listener."

"It is the purpose of the following described invention to eliminate or greatly reduce all of the above deficiencies. Although its application to the magnetic tape medium is described in the following discussion, the technique is equally applicable to most other desired transmission mediums, such as Compact Disc, videocassettes, digital tape recorders, Public Address (PA) systems, background music installations, computer software programs, random access memory (RAM), read only memory (ROM), "live", real time applications and other mediums now in existence or to be developed in the future"

"Mixed reality holographic object development
Abstract

4. *Nonlinear*

Let us now consider the nonlinear case, $\beta > 0$.

4.1. *Asymptotic expansion*

Let us assume that β is small, $\beta \ll 1$. We seek an asymptotic expansion of the form

$$u = u_0 + \beta u_1 + \beta^2 u_2 + \dots, \quad (4.1)$$

where u_0, u_1, u_2, \dots are functions of x, y, z, t that are independent of β .

Substituting (4.1) into (2.1) and collecting terms of like powers of β , we obtain

$$\begin{aligned} \mathcal{L}u_0 &= -u_0 \frac{\partial u_0}{\partial x}, \\ \mathcal{L}u_1 &= -u_1 \frac{\partial u_0}{\partial x} - u_0 \frac{\partial u_1}{\partial x} - u_0 \frac{\partial u_0}{\partial y}, \\ \mathcal{L}u_2 &= -u_2 \frac{\partial u_0}{\partial x} - u_1 \frac{\partial u_1}{\partial x} - u_0 \frac{\partial u_2}{\partial x} - u_0 \frac{\partial u_1}{\partial y} - u_1 \frac{\partial u_0}{\partial y} - u_0 \frac{\partial u_0}{\partial z}, \end{aligned} \quad (4.2)$$

where \mathcal{L} is the linear operator defined in (2.2). The boundary conditions are

$$u_0 = u_1 = u_2 = \dots = 0 \quad \text{on } \partial\Omega. \quad (4.3)$$

Equation (4.2) is a set of nonlinear partial differential equations. We solve (4.2) sequentially, starting with u_0 .

Equation (4.2)₁ is a linear partial differential equation. We solve it by the method of characteristics.

Let us assume that u_0 is a function of x only, $u_0 = u_0(x)$. Then (4.2)₁ becomes

$$u_0'' = -u_0 u_0', \quad (4.4)$$

which is a separable ordinary differential equation. We solve it by separating variables.

Let us assume that u_0 is a function of x and y only, $u_0 = u_0(x, y)$. Then (4.2)₁ becomes

$$u_0'' = -u_0 \left(u_0' \frac{\partial}{\partial x} + \frac{\partial}{\partial y} \right) u_0, \quad (4.5)$$

which is a nonlinear partial differential equation. We solve it by the method of characteristics.

Let us assume that u_0 is a function of x, y, z only, $u_0 = u_0(x, y, z)$. Then (4.2)₁ becomes

$$u_0'' = -u_0 \left(u_0' \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z} \right) u_0, \quad (4.6)$$

which is a nonlinear partial differential equation. We solve it by the method of characteristics.

Systems and related methods for presenting a holographic object that self-adapts to a mixed reality environment are provided. In one example, a holographic object presentation program captures physical environment data from a destination physical environment and creates a model of the environment including physical objects having associated properties. The program identifies a holographic object for display on a display of a display device, the holographic object including one or more rules linking a detected environmental condition and/or properties of the physical objects with a display mode of the holographic object. The program applies the one or more rules to select the display mode for the holographic object based on the detected environmental condition and/or the properties of the physical objects.

"

<https://patents.google.com/patent/US20140049559A1/en>

"High-resolution large-field-of-view three-dimensional hologram display system and method thereof

Abstract

A real-time, dynamic, free space-virtual reality, 3-D image display system which is enabled by using a unique form of Aerogel as the primary display media. A preferred embodiment of this system comprises a 3-D mosaic topographic map which is displayed by fusing four projected hologram images. In this embodiment, 4 holographic images are projected from 4 separate holograms. Each holographic image subtends a quadrant of the 4π solid angle. By fusing these four holographic images, a static 3-D image such as a featured terrain map would be visible for 360 degrees in the horizontal plane and 180 degrees in the vertical plane. An input, either acquired by 3-D image sensor or generated by computer animation, is first converted into a 2-D computer generated hologram (CGH). This CGH is then downloaded into large liquid crystal (LC) panel. A laser projector illuminates the CGH-filled LC panel and generates and displays a real 3-D image in the Aerogel matrix.

"

<https://patents.google.com/patent/US6195184B1/en>

<https://patents.google.com/patent/US7034746B1/en>

"Holographic arrays for threat detection and human feature removal

Abstract

A method and apparatus to remove human features utilizing at least one transmitter transmitting a signal between 200 MHz and 1 THz, the signal having at least one characteristic of elliptical polarization, and at least one receiver receiving the reflection of the signal from the transmitter. A plurality of such receivers and transmitters are arranged together in an array which is in turn mounted to a scanner, allowing the array to be passed adjacent to the surface of the item being imaged while the transmitter is transmitting electromagnetic radiation. The array is passed adjacent to the surface of the item, such as a human being, that is being imaged. The



portions of the received signals wherein the polarity of the characteristic has been reversed and those portions of the received signal wherein the polarity of the characteristic has not been reversed are identified. An image of the item from those portions of the received signal wherein the polarity of the characteristic was not reversed is then created.

"

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US5859609A * 1991-08-30 1999-01-12 Battelle Memorial Institute Real-time wideband cylindrical holographic surveillance system

<https://patents.google.com/patent/US6238333B1/en>

"Remote magnetic manipulation of nervous systems

Abstract

Apparatus and method for remote manipulation of nervous systems by the magnetic dipole field of a rotating bar magnet. Reliance on modulation of spontaneous spiking patterns of sensory nerve receptors, and exploitation of a resonance mechanism of certain neural circuits, allows the use of very weak magnetic fields. This, together with the large magnetic moments that can be obtained with a permanent bar magnet, makes it possible to effectively manipulate the nervous system of a subject over a distance of several hundred meters, using a small portable battery-powered device. The method can be used in law enforcement for standoff situations."

Nervous system manipulation by electromagnetic fields from monitors

Abstract

Physiological effects have been observed in a human subject in response to stimulation of the skin with weak electromagnetic fields that are pulsed with certain frequencies near 1/2 Hz or 2.4 Hz, such as to excite a sensory resonance. Many computer monitors and TV tubes, when displaying pulsed images, emit pulsed electromagnetic fields of sufficient amplitudes to cause such excitation. It is therefore possible to manipulate the nervous



system of a subject by pulsing images displayed on a nearby computer monitor or TV set. For the latter, the image pulsing may be imbedded in the program material, or it may be overlaid by modulating a video stream, either as an RF signal or as a video signal. The image displayed on a computer monitor may be pulsed effectively by a simple computer program. For certain monitors, pulsed electromagnetic fields capable of exciting sensory resonances in nearby subjects may be generated even as the displayed images are pulsed with subliminal intensity.

<https://patents.google.com/patent/US6506148B2/en>

<https://www.eltem.net/wp/>

"PROPA is a product line of Acoustic Hailing Devices for a Long Distance which are manufactured by Eltem Corporation in South Korea.

PROPA broadcasts clear sounds to a long distance, for it is the most intelligible and reliable high-powered Acoustic Hailing Device which is available for broadcasting and warning by using recorded sound sources and a highly sensitive microphone.

Overcoming the limitations of the existing P.A. System, PROPA maintains the maximum output over 142dB so that you can communicate clearly over loud background noise to the insides of vehicles, vessels, or buildings to determine intent, modify behavior safely, and enhance response capabilities.

ELtem Corporation has manufactured a variety of state-of-the-art devices such as high powered acoustic devices, super directional loud speakers, and a laser illuminator.

"

<https://patents.google.com/patent/US20080063214A1/en>

" In a typical application, the desired signal is amplitude modulated (AM) modulated on an ultrasonic carrier of 30 kHz to 50 kHz, then amplified, and applied to an ultrasonic transducer. If the ultrasonic intensity is of sufficient amplitude, the air column will perform a demodulation or down-conversion over some length (the length depends, in part, on the carrier frequency and column shape). The prior art, such as U.S. Pat. No. 4,823,908 to Tanaka, et al., teaches that the modulation scheme to achieve parametric audio output from an ultrasonic emission uses a double sideband signal with a carrier frequency and sideband frequencies spaced on either side of it by the frequency difference corresponding to the audio frequencies of interest.

[0008]

For example, when amplitude modulating a 6 kHz tone onto a 40 kHz carrier, as shown in FIG. 1, sideband frequencies are generated. FIG. 2 shows that the carrier frequency (40 kHz) is now accompanied by a 34 kHz lower-sideband and a 46 kHz upper-sideband. Three components are now present, 34 kHz, 40 kHz, and 46 kHz which gives a pure 6 kHz



envelope. As described previously, the 6 kHz signal would be square rooted before being used as the modulation signal shown in FIG. 3. Using a spectrum produced by the square root function for the modulation signal of a 40 kHz carrier generates the spectral components shown in FIG. 4. Applying a square root function to the 6 kHz signal produces infinite harmonics, and the AM spectrum has upper and lower sideband frequencies that are also infinitely far from the carrier. It is infeasible to implement this type of system because of transducer bandwidth limitations and similar problems.

[0009]

In practice, the first five or six harmonics are enough to give a good approximation of the ideal square rooted wave. However, even when the number of harmonics is limited, the low sideband frequencies still reach down into the audio range and create distortion. As in the foregoing example in FIGS. 1-4, the lower-sideband frequencies that would need to be emitted are 34, 28, 22, 16, 10 and 4 kHz. This creates the problem that audible frequencies (16, 10, and 4 kHz) will need to be emitted along with the ultrasonic ones to make the desired modulation envelope.

"

"

Scientists develop noninvasive ultrasound neuromodulation technique"

<https://medicalxpress.com/news/2020-05-scientists-noninvasive-ultrasound-neuromodulation-technique.html>

Published Online: 05 November 2020

Accepted: October 2020

Remote neurostimulation with physical fields at cellular level enabled by nanomaterials: Toward medical applications "

<https://aip.scitation.org/doi/10.1063/5.0022206>

"Combined with proper instrumentation to generate physical fields (e.g., magnetic, electric, and optical fields), nanomaterials offer the following capabilities for neurostimulation and neuromodulation usually not available from conventional techniques such as deep brain stimulation: (1) interfacing with the nervous system at cellular and molecular levels. This is due to the nanometer scale interface provided by nanomaterials. (2) Remote and wireless control by a wide variety of mechanisms. This is owing to the numerous extraordinary magnetic, electrical, optical, and thermal functions of various nanomaterials."



<http://sitn.hms.harvard.edu/flash/2018/remote-brain-stimulation-new-treatment-parkinsons-disease/>

"

How does noninvasive deep brain stimulation work?

Neurons have the ability to send signals to other neurons repetitively. The rate at which the signals are repeated in one second is called the frequency, which is measured in hertz (Hz; Figure 2A). For example, a frequency of 2 Hz means that the signal occurs twice per second. In practice, when electrodes placed on the skull apply current at a certain frequency, neurons close to the electrodes can ...!"

<https://medicalxpress.com/news/2010-06-science-platform-brain-treatment.html>

"The ability to diagnose and treat brain dysfunction without surgery, may rely on a new method of noninvasive brain stimulation using pulsed ultrasound developed by a team of scientists led by William "Jamie" Tyler, a neuroscientist at Arizona State University. The approach, published in the journal *Neuron* on June 9, shows that pulsed ultrasound not only stimulates action potentials in intact motor cortex in mice but it also "elicits motor responses comparable to those only previously achieved with implanted electrodes and related techniques," says Yusuf Tufail, the lead author from ASU's School of Life Sciences. "

"

"Scientists have known for more than 80 years that ultrasound can influence nerve activity," observes Tufail. "Pioneers in this field transmitted ultrasound into neural tissues prior to stimulation with traditional electrodes that required invasive procedures. Those studies demonstrated that ultrasound pre-treatments could make nerves more or less excitable in response to electrical stimulation.

"In our study, however, we used ultrasound alone to directly stimulate action potentials and drive intact brain activity without doing any kind of surgery," Tufail says. "

""We were surprised to find that ultrasound activated brain waves in the hippocampus known as sharp-wave ripples," Tufail says. "These brain activity patterns are known to underlie certain behavioral states and the formation of memories.""

"



Tyler Neurotechnology Lab

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US Patent 10,485,972 Apparatuses and methods for neuromodulation. Issued: 11/2019; Inventors: S.K. Pal, W.J. Tyler, J.D. Charlesworth, I. Goldwasser, D. Wetmore, J. Engal, A. Thakur.

US Patent 10,426,945 Method and apparatuses for transdermal stimulation of the outer ear. Issued: 10/2019; Inventors: W.J. Tyler D. Jeffery, W. Law, and R. Piersiak.

US Patent 10,413,757 Systems and devices for coupling ultrasound energy to a body. Issued: 09/2019; Inventors: T. Sato, W.J. Tyler, P. Lamb, D. Wetmore, HT Chang, and I. Goldwasser.

US Patent 10,396,905 Method and system for direct communication. Issued: 08/2019; Inventors: W.J. Tyler, I. Goldwasser, R. Muratore, S. Pal, T. Sato, and D. Wetmore.

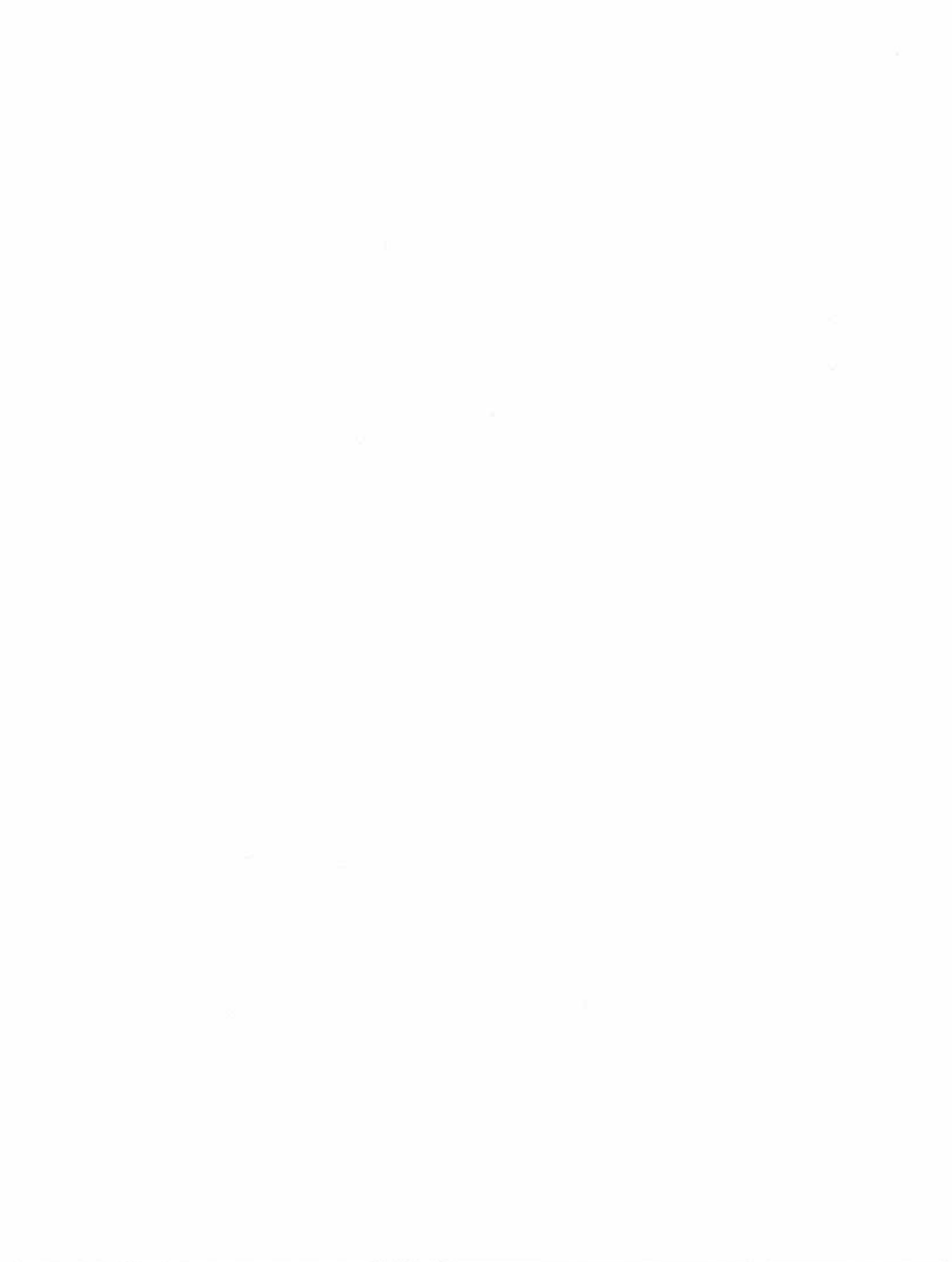
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US Patent 9,729,252 Method and System for Direct Communication. Issued: 08/2017; Inventors: W. J. Tyler, I. Goldwasser, R. Muratore, S. Pal, T. Sato; Tomo, and D.Z. Wetmore

US Patent 9,729,252 Method and system for direct communication. Issued: 08/2017. Inventors: W.J. Tyler, I. Goldwasser, R. Muratore, S. Pal, T. Sato, and D.Z. Wetmore.

US Patent 9,440,070 Wearable transdermal electrical stimulation devices and methods of using them. Issued: 09/2016; Inventors: I. Goldwasser, W. J. Tyler, J. Charlesworth, S.K. Pal, D.Z. Wetmore, D. Jeffery, and W. Law

US Patent 9,403,038 Methods and devices for modulating cellular activity using ultrasound. Issued: 08/2016; Inventor: W.J. Tyler



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US Patent 8,903,494 Wearable transdermal electrical stimulation devices and methods of using them. Issued: 12/2014; Inventors: I. Goldwasser, W.J. Tyler, A. Opitz, T. Sato, J. Charlesworth, S.K. Pal, P. Lamb, C. Voss, S. Cook, R. Demers, R.L. Gradwohl, and D.Z. Wetmore

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Neuromodulation devices for targeting sebaceous glands and methods of using them (USPTO application #62/489,553)

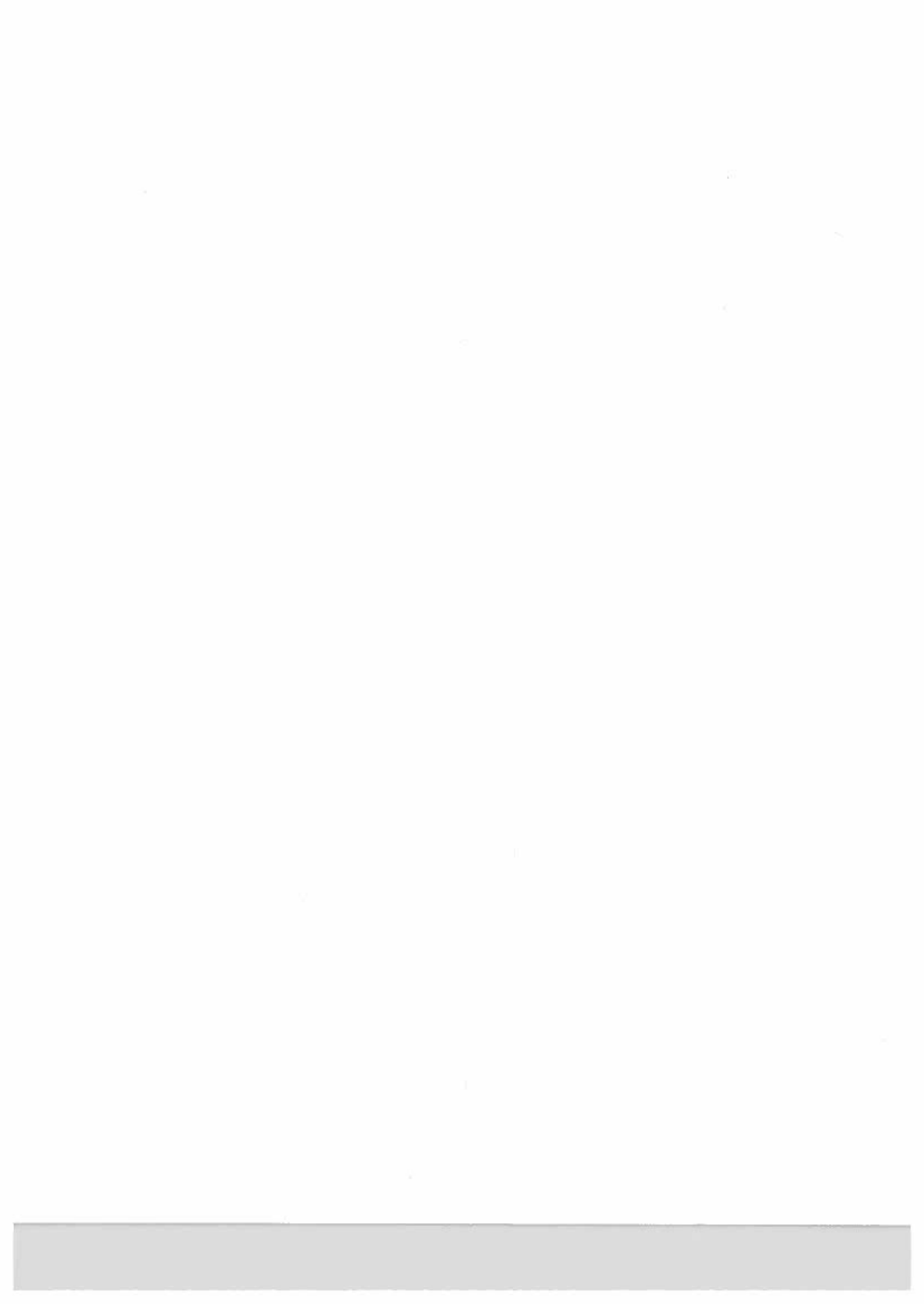
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USPTO Pub. No. 20150174418 Device and methods for noninvasive neuromodulation Using targeted transcranial electrical stimulation.

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USPTO Pub. No. 20120283502 Ultrasound neuromodulation treatment of depression and bipolar disorder.

USPTO Pub. No. 20110178441 Methods and devices for modulating cellular activity using ultrasound."

"

MUSHRA stands for MULTiple Stimuli with Hidden Reference and Anchor and is a methodology for conducting a codec listening test to evaluate the perceived quality of the output from lossy audio compression algorithms. It is defined by ITU-R recommendation BS.1534-3.[1] The MUSHRA methodology is recommended for assessing "intermediate audio quality". For very small audio impairments, Recommendation ITU-R BS.1116-3 (ABC/HR) is recommended instead.

The main advantage over the mean opinion score (MOS) methodology (which serves a similar purpose) is that MUSHRA requires fewer participants to obtain statistically significant results.[citation needed] This is because all codecs are presented at the same time, on the same samples, so that a paired t-test or a repeated measures analysis of variance can be used for statistical analysis. Also, the 0-100 scale used by MUSHRA makes it possible to rate very small differences.

In MUSHRA, the listener is presented with the reference (labeled as such), a certain number of test samples, a hidden version of the reference and one or more anchors. The recommendation specifies that a low-range and a mid-range anchor should be included in the test signals. These are typically a 7 kHz and a 3.5 kHz low-pass version of the reference. The purpose of the anchors is to calibrate the scale so that minor artifacts are not unduly penalized. This is particularly important when comparing or pooling results from different labs. "



<https://patents.google.com/patent/WO1996010870A1/en>

"Press, 1982, pages 10-99, it was possible to establish how to a stepped envelope tone, the nervous fibers outgoing from the ciliated cellules, respond with a peak of activity having an amplitude about twice the stationary activity (peaks/s) and a duration of about 20 ms.

A double amount of peaks per second brings to the brain more information on the tone beginning than brought successively in an equal amount of time. It has further been found that the ratio between the peak at the beginning and the stationary average value of peaks per second is not independent from the amplitude of the signal: as the amplitude is increased the peak increases more than the stationary value increases. Moreover, the description of a second tone reaching the brain is much less detailed if preceded by a strong tone. This phenomenon is called postconcealment."

" H04B1/665 Details of transmission systems, not covered by a single one of groups H04B3/00 - H04B13/00; Details of transmission systems not characterised by the medium used for transmission for reducing bandwidth of signals; for improving efficiency of transmission using psychoacoustic properties of the ear, e.g. masking effect"

"It has long been known that the human auditory response can be masked by audio-frequency noise or by other-than-desired audio frequency sound signals. See, B. Scharf, "Critical Bands," Chap. 5 in J. V. Tobias, Foundations of Modern Auditory Theory, Academic Press, New York, 1970. These effects have been used to advantage in designing coders for audio signals. See, for example, M.R. Schroeder et al, "Optimizing Digital Speech Coders By Exploiting Masking Properties of the Human Ear," Journal of the Acoustical Society of America, Vol. 66, pp. 1647-1652, December, 1979."

<https://patents.google.com/patent/EP0424016B1/en>



NEWS TICKER

More officials report 'Havana syndrome'

The U.S. State Department is now "vigorously investigating" reports from two dozen spies, diplomats and other officials based in Vienna of symptoms—including headaches, vision issues and vertigo—similar to those previously reported by U.S. officials in Havana in 2016 and 2017, the *New Yorker* reported on July 16.

U.S. life expectancy drops in 2020

Driven mostly by the COVID-19 pandemic, the average American's life expectancy fell by 1.5 years from 2019 to 2020, the U.S. Centers for Disease Control and Prevention announced on July 21. The decrease was especially pronounced among Black and Hispanic populations.

Hungary's PM calls for vote on LGBTQ law

Prime Minister Viktor Orbán proposed a referendum on a new law banning LGBTQ educational content on July 21, to ask the Hungarian public if it supports the "promotion" of such materials. The European Parliament has labeled the law a "gradual dismantling of fundamental rights."



CALL TO DUTY In a photograph taken by Danish Siddiqui on July 11, a member of the Afghan Special Forces participates in a combat mission against the Taliban in Afghanistan's Kandahar province. Five days later, the 38-year-old Siddiqui, a Pulitzer Prize-winning photojournalist from India who had worked for Reuters for over a decade, was killed while covering another bout of fighting near the country's border with Pakistan. Thirty-three journalists and other media workers have been killed in Afghanistan from 2018 to 2021, according to a U.N. report published this year. —Tara Law

WORLD

Cuba protests highlight the role of the Internet, and the U.S.

CHANTING "FREEDOM!" AND "ENOUGH!" thousands of Cubans marched on July 11 in the island's largest antigovernment protest in decades. The pandemic's impact on the state-run economy, already struggling under Trump-era sanctions, has sparked the nation's worst food and medicine shortages in 25 years. Empty supermarket shelves, rising COVID-19 infections and recent access to social media, where Cubans now openly share their outrage, all helped foment unprecedented protests against the communist regime.

ONLINE DISSENT President Miguel Díaz-Canel quickly blamed the demonstrations on the U.S.'s "policy of economic suffocation." Since then, police have erected checkpoints across Havana and the government has restricted access to social media and messaging apps like WhatsApp and Facebook, highlighting the critical role Internet access played in the unrest. "This couldn't have happened a few years ago," says Paul Hare, a former British ambassador to Cuba.

POLITICAL PRIORITIES The unrest puts a spotlight on the Biden Administration's drawn-out review of U.S. Cuba policy. Although Biden promised during his campaign to "reverse the failed Trump policies of imposing hundreds of new sanctions and economic measures on the island, there was little indication a shift was in the works until the protests erupted. As of July 20, the Biden Administration says it's reviewing an increase in embassy staff and creating a working group to reconsider remittances to the island.

QUICK FIXES Several prominent Republicans, including Florida Governor Ron DeSantis, have called for the Administration to provide Internet access to Cubans, arguing this "may be the key to finally bringing democracy to the island." Biden has said he's reviewing whether the U.S. can do that, though experts warn that it is not a long-term strategy in the face of Cuba's growing humanitarian crisis.

—VERA BERGENGRUBER



Timothy Darrell Young B.S., M.P.A.

Care of: Jeff Ed Taylor

Oregon State Hospital (Bird 3)

2600 Center St. NE

Salem, OR 97301

To Whom It May Concern,

According to the Mayo Clinic, the Covid-19 virus can live 24 hours on cardboard, 3 days on stainless steel and plastic and Covid-19 can live 3 hours in the air. Beyond colds, the flu and other saliva and air droplet transmissible human diseases, Covid-19 does present a significant risk to public health. Thus, I am writing to urge the purchase and use of saliva free envelopes for mail-in Oregon ballots, now and for every election.

For \$40.88, 500 safer for public health "pull tab envelopes" can be purchased at www.staples.com. This price was quoted this June 30th, 2020 for envelopes that do not require saliva to seal. The cheaper, more risky to human life, "lick envelopes" the same retailer sold for \$20.13 for 500 quoted at the same. For public health benefit, Oregon always using safer "pull tab envelopes" for our ballot-envelopes is a matter of good public policy for citizens, and for some of the most important documents in our democracy next to our Constitutions, our ballots for voting. I hope you will agree.

The Deputy Director of Elections for the current Secretary of State's Office said she did not have the power, alone, to require the use of "pull tab envelopes" in our elections. An Executive Order of Governor Brown to require "pull tab envelopes" in our elections, or an Oregon Revised Statute to direct Oregon Administrative Rule making to get this accomplished for public health in a "top-down" policy change, hasn't materialized in the two months I have been public-health concerned about this as a citizen, working pro-bono for public health solutions during the Covid-19 pandemic.

However you, and your County Elections Office, can require the exclusive use of "pull tab envelopes" for all our elections. Discounts and cost savings for buying in bulk and/or possibly tax-write offs for private sector companies, and competitive bidding, in selling "pull tab envelopes" to our County Elections Offices may be possibly found, also.

Further, an election worker in Clackamas County said he needed only two months notice to buy the "pull tab envelopes". I would like you to consider the issue, and please get back to me about your decision on the envelopes. I am writing this letter to every County Elections Office in Oregon, making the same request. Oregon could be first in the world for election public health, integrity and ease of use for our American Constitutional Republic, with your help. I hope you and your staff will require buying and using "pull tab envelopes" in all our elections, in November and going forward for every election.

Lastly, I am also an aware "Truth-er Targeted Individual" and am seeking care and support at the Oregon State Hospital, currently. I am trying to stay healthy and enduring a lot of needless torture, being literally driven crazy since 2004 by organized crime for being a "goodie good" political type, now a 16-year human trafficking victim, with little legal recourse.

Sincerely,


Timothy Darrell Young B.S., M.P.A. - Salem, Oregon 7/1/2020

