

# Remote Behavioral Influence Technology Evidence

John J. McMurtrey, M. S.<sup>i</sup>, Copyright 2003, 23 Dec. 2003<sup>ii</sup>

People aware of being manipulated by remote technology have formed protest organizations around the world.<sup>1 2 3 4</sup> Educated society is uninformed regarding authentic documentation of the development and existence of these technologies, and is unaware of the dangers. Complaints of ‘hearing voices’ and perceptions of other remote manipulation must receive appropriate, discreet scientific and legal investigation. Professional awareness is virtually nonexistent. Such texts and opinions that do exist on the subject tend to be presumptuous, without any appraisal of the evidence.

Herein we provide evidence for:

1. Human wireless internal voice transmission and tracking technologies.
2. Reports of electroencephalographic (EEG) thought reading capacity, evidence of covert development of same, and remote EEG capture technology.
3. References to the use of these or similar technologies against humans.

## MICROWAVE HEARING

The first American<sup>iii 5</sup> to publish on the microwave hearing effect was Allan H. Frey in 1962,<sup>6</sup> yet radar technicians provided anecdotes of microwave perception in World War II.<sup>7</sup> Deaf and normal subjects, even with earplugs, can hear appropriately pulsed microwaves at least up to thousands of feet from the transmitter.<sup>8</sup> Transmitter parameters above those producing the effect result in severe dizziness and nausea, while parameters below those producing the effect induce a “pins and needles sensation.” Peak power is the major determinant of loudness, though there is some dependence on pulse width. Pulse modulation appears to influence pitch and timbre. The effect “is the most easily and reliably replicated of low power density (microwave) illumination.”<sup>9</sup> Validity is established by independent investigators’ confirmation of the effects of microwave hearing on humans and animals.<sup>10 11 12 13 14</sup> Designs exist for scaring birds away from aircraft or other hazards by using microwaves<sup>15</sup> and inducing vertigo.<sup>16 17 18</sup>

While working for the Advanced Research Projects Agency at the Walter Reed Army Institute of Research, Sharp and Grove discovered “receiverless” and “wireless” voice transmission.<sup>19</sup> Their method was simple: the negative deflections of voiceprints from recorded spoken numbers triggered microwave pulses. Upon illumination by such verbally modulated energy, the words were understood remotely. The discovery’s applications are “obviously not limited to therapeutic medicine” according to James C. Lin.<sup>20</sup>

---

<sup>i</sup> Address: 903 N. Calvert St., Baltimore MD-21202.-\_Email- [Johnmcmurt@aol.com](mailto:Johnmcmurt@aol.com) Phone- 410-539-5140.

<sup>ii</sup> Financial contribution to this article was made by fellow members of Christians Against Mental Slavery.

<sup>iii</sup> American discovery may not be the first. Preexisting Soviet and East European electromagnetic bioeffect literature is more extensive, and transparent. A translated Russian treatment is the next text reference, which refers to F. Cazzamalli, an Italian, who mentioned radiofrequency hallucination about 1920.

A Defense Intelligence Agency review of communist literature affirmed the existence of microwave sound and indicated voice transmission. The report states, “Sounds and possibly even words which appear to be originating intracranially (within the head) can be induced by signal modulation at very low average power densities.”<sup>21</sup> There are implications for microwave weaponry, including “great potential for development into a system for disorientating or disrupting the behavior patterns of military or diplomatic personnel.” An Army Mobility Equipment Research and Development Command report affirms microwave speech transmission has applications in “camouflage, decoy, and deception operations.”<sup>22</sup> The report goes on to say that, “One decoy and deception concept presently being considered is to remotely create noise in the heads of personnel by exposing them to low power, pulsed microwaves . . . By proper choice of pulse characteristics, intelligible speech may be created.”

The Brunkan Patent #4877027 “Hearing system” is a device capable of verbal microwave hearing.<sup>23</sup> The invention converts speech (to be remotely introduced into the head by parabolic antenna) into direct microwaves, thereby influencing neural activity. The microwave spectrum used is broad: 100-10,000 MHz (0.1-10 GHz.) Pulse characteristics are essential to perception of the microwaves. Bursts of narrowly grouped, evenly spaced pulses determine sound intensity by their amount per unit time. Although a wide spectrum is patented, with ranges of pulse and burst duration, preferred operation has a burst duration of two microseconds, and a pulse duration of 100 nanoseconds. Operation is at 1000 MHz, which is the frequency for optimal tissue penetration.<sup>24</sup> Another patent application based on microwave bursts is “designed in such a way that the burst frequencies are at least virtually equal to the sound frequencies of the sounds picked up by the microphone,” though the transducer here is not remote.<sup>25</sup>

Stocklin Patent #4858612 “Hearing device”<sup>7</sup> affirms the microwave hearing effect. Stocklin gives exposition to the concept that a microwave component is part of neurophysiology and electroencephalogram (EEG) potentials.<sup>26</sup> Microwaves are considered to be both emitted and absorbed by nerve cell membrane proteins. Microwaves generally excite the brain,<sup>27</sup> perhaps by influencing calcium,<sup>28</sup> a central ion in nerve firing.<sup>29</sup> Stocklin represents the auditory cortex as normally producing microwave energy, which the device simulates, thus eliciting sound sensation. Each acoustic tone is weighted for several microwave frequencies by a formula called the mode matrix, which is used to calculate best perception requirements. Observation of EEG desynchronization, delta waves, and brain wave amplitudes helps calibrate the device.<sup>30</sup> The lowest frequency for hearing is estimated by the cephalic index. Microwave speech transmission in this patent is not remote, with the antenna sized for and positioned over the auditory cortex. Other patents have non-remote transducers for radio wave elicited hearing.<sup>31 32</sup>

Descriptions in the above patents attribute microwave hearing to direct neural influence. However, the most accepted mechanism in review is by thermoelastic expansion,<sup>12</sup> most likely inducing bone conducted hearing. The cochlea does appear to be involved, but not the middle ear.<sup>14</sup> This divergence of mechanisms illustrates the non-thermal/thermal controversy. US exposure standards are based on thermal effects, yet there are effects that are very difficult to explain with thermodynamics.<sup>13 33</sup> Everyone accepts thermal effects at some level, yet the thermal-only school is rather dogmatic due

to issues of commercial liability<sup>34</sup> and national security concerns.<sup>35</sup> It must be said that the open literature regarding microwave hearing indicates a thermo-acoustic mechanism.

“Communicating via the Microwave Auditory Effect” is the title of a small business contract for the Department of Defense. The initial results are: “The feasibility of the concept has been established” using both low and high power systems.<sup>36</sup> A Freedom of Information Act (FOIA) request regarding the project’s outcome was denied by the Air Force, on the grounds that disclosure “could reasonably be expected to cause damage to national security.”<sup>37</sup> Though the Air Force denied the FOIA disclosure, the contract’s purpose is elaborated by the Air Force’s “New World Vistas” report: “It would also appear possible to create high fidelity speech in the human body, raising the possibility of covert suggestion and psychological direction . . . . If a pulse stream is used, it should be possible to create an internal acoustic field in the 5-15 kilohertz range, which is audible. Thus it may be possible to ‘talk’ to selected adversaries in a fashion that would be most disturbing to them.”<sup>38</sup> The eminent Robert Becker, twice nominated for the Nobel Prize in biological electromagnetic fields research, is more explicit: “Such a device has obvious applications in covert operations designed to drive a target crazy with “voices” or deliver undetectable instructions to a programmed assassin.”<sup>39</sup>

A microwave voice transmission non-lethal weapon is referenced in the thesaurus of the Center for Army Lessons Learned, which is a military instruction website.<sup>40</sup> The military thesaurus entry lists analogous devices using “silent sound.”<sup>iv</sup><sub>[.1]</sub><sup>41</sup>

## ULTRASOUND TRANSMISSION OF VOICE

Internal voice capability, without discernment by others nearby is also evident in ultrasound-based technology. Lowrey Patent #6052336, “Apparatus and method of broadcasting audible sound using ultrasonic sound as a carrier,” clearly focuses on non-lethal weapon application against crowds or directed at an individual.<sup>42</sup> Communication is understood as an inner voice, with loss of the directional quality of sound perception. As noted in the Lowrey patent application, “Since most cultures attribute inner voices either as a sign of madness, or as messages from spirits or demons, both of which will invoke powerful emotional reactions, it is expected that the use of a voice will have an immediate intense effect.” Replaying speech with a delay impedes talking and causes stuttering. Normal brain wave patterns can be changed (or entrained), which “may cause temporary incapacitation, intense feelings of discomfort.” This technique is detailed by Monroe Patent #5356368 “Method of and apparatus for inducing desired states of consciousness,” with license to Interstate Industries and involves an auditory replication of brainwave patterns to entrain the EEG as desired.<sup>43</sup>

Norris Patent #5889870 “Acoustic heterodyne device and method,” directionally produces sound on the interference (or heterodyning) of two ultrasound beams.<sup>44</sup> The cancellation makes the carried audible sound perceivable. The effect becomes apparent particularly within cavities such as the ear canal. An individual readily understands

---

<sup>iv</sup> Also called S-quad, Silent Sounds, Inc. licensed Lowrey Patent #5159703 “Silent subliminal presentation system”, and has advanced brain wave entrainment technology (vide infra) with several classified patents. (See <http://www.mindspring.com/~silent/menu.htm> and links.). Unessential is individual direction, but possible by ultrasound.

communication across a noisy, crowded room. Sound can also be produced from mid-air or reflected from any surface.

American Technology Corporation, which licensed this patent, possesses acoustic non-lethal weapons technology,<sup>45</sup> has a cooperative agreement with the Army Research and Development Command,<sup>46</sup> and is working with numerous other government agencies.<sup>47</sup> The corporation's Long Range Acoustic Devices (LRAD<sup>TM</sup>) account for 60% of military sales, and have been integrated into the Navy's situational awareness and radar surveillance systems<sup>48</sup> with deployment on naval vessels and in fleet harbors.<sup>49</sup> A popular magazine writer describes the device's inner nature of sound perception.<sup>50</sup> [E2]From separate references, non-lethal weapons treatments affirm sound localization and the limitations of individual ultrasound effects<sup>51</sup> with obvious lack of nearby discernment;<sup>52</sup> the latter treatment was conducted by a non-lethal weapons program director. Audio Spotlight is a similar ultrasound method of limiting sound to one person. It was exhibited at Boston's Museum of Science and the Smithsonian National Air & Space Museum and is currently on the market.<sup>53</sup> Both the American Technology device and Audio Spotlight are discussed in an article along with some history of ultrasound acoustics, which has origins in sonar.<sup>54</sup> Other acoustic influence methods may utilize ultrasound.<sup>v 55</sup>

## TARGET TRACKING TECHNOLOGY

Maintaining the effects of these technologies on people requires obstacle penetration and target tracking. These internal voice capable energy forms penetrate obstruction and can be localized. Sound transmission through enclosures is commonly experienced. An inaudible ultrasound high intensity carrier wave is unnoticed. Solid defect inspection is one use of ultrasound, and is being developed to discern movement through walls.<sup>56</sup> Common technology utilizes the microwave hearing spectrum, which partly or completely encompasses cell phone,<sup>57,58</sup> TV, and radar frequencies.<sup>59</sup> Commercial signals are not perceived, since the hearing effect requires pulsation within the limits that elicit perception. A variety of antennae localize and collimate the structurally penetrating microwave illumination.<sup>60,61</sup> A patent, "compatible for mobile platforms with DEWs," (Directed Energy Weapons) includes a modified Luneburg lens emitting parallel rays with over 50 years utilization[.3].<sup>62</sup>

Hablov Patent #5448501 "Electronic life detection system" is for microwave radar within the hearing spectrum that finds and distinguishes individuals through obstruction.<sup>63</sup> As stated, "the modulated component of the reflected microwave signal . . . subjected to frequency analysis . . . forms a type of "electronic fingerprint" of the living being with characteristic features, which . . . permits a distinction between different living beings." Though this patent has use in trapped victim rescue, another Hablov et al. patent #5530429 "Electronic surveillance system" detects interlopers and emphasizes security.<sup>64</sup> Other literature describes the basic method.<sup>65</sup>

The Hablov et al. patents discern people through structures by detecting the motion of vital organs. Others offer more detailed imaging. Fullerton et al. Patent

---

<sup>v</sup> Loos Patent # 6017302 "Subliminal acoustic manipulation of nervous system" can "cause relaxation, drowsiness, or sexual excitement, depending on the precise acoustic frequency near \_ Hz used. The effects of the 2.5 Hz resonance include slowing of certain cortical processes, sleepiness, and disorientation."

#6400307 “System and method for intrusion detection using a time domain radar array” is such a design,<sup>66</sup> and is commercially available as RadarVision by Time Domain.<sup>67</sup> Further designs for imaging within structures include: a portable system determining suspect distance,<sup>68</sup> and according to presentations by the International Society for Optical Engineering,<sup>69,70</sup> software for displaying radar detection on a personal computer is on the market.<sup>71</sup>

Rowan Patent #4893815 “Interactive transector device commercial and military grade” describes the acquisition, locking onto, and tracking of human targets.<sup>72</sup> According to the patent application, “Potentially dangerous individuals can be efficiently subdued, apprehended and appropriately detained.” The capability of “isolating suspected terrorists from their hostages . . . or individuals within a group without affecting other members of the group” is discussed. Laser, radar, infrared, and acoustic sensor fusion is utilized to identify, seek, and locate targets. Tracking is accomplished by locking illumination on the target until weapons are engaged. Among available non-lethal weapons is an incapacitating, electromagnetic, painful pulse. Another target tracking system is the Manportable Surveillance and Target Acquisition Radar manufactured by Systems & Electronics, Inc. This system is capable of tracking moving targets, including personnel. It also has an auto target track feature, and lists moving target detection from as far away as 12 km for a walking man.<sup>73</sup>

A track initiation processor acquires a target, while a data association filter maintains a tracking lock on the target.<sup>74</sup> An original method for target tracking is the Kalman filter. Numerous weapons guidance systems utilize similar processes and illuminate targets to facilitate tracking. Laser illumination is also used for non-human targets.<sup>75</sup> Other examples utilize microwave beam target recognition and weapons guidance.<sup>76,77</sup> Target illumination tracking systems have nanosecond to microsecond response times. Such responses do not require a wide scan area to lock illumination upon persons at achievable speeds. At 90 miles per hour, an automobile travels less than 1/100 of an inch in a microsecond.

## DISCUSSION

Ultrasound voice transmission technology is demonstrated publicly in museum exhibits. The numerous microwave voice transmission citations rest on a considerable foundation of microwave hearing literature. Internal voice non-lethal weapon applications are discussed in many of the citations. There are examples of either the existence or sales of non-lethal weapons based on both technologies. Numerous designs involving human location, identification, and tracking methods have long demonstrated the feasibility of constructing devices capable of producing continuous internal voices in isolated individuals. To deny such technological capabilities in the face of extensive complaints is to willfully ignore documented development of the relevant technologies and engineering competence for complete integration.

## THOUGHT READING CAPACITY

Many people who report remote behavioral influence also perceive mind reading. Thought reading capacity, or brain wave analysis word recognition, is seriously reported.

Publications by a Stanford group support and report recognition of specific words from brain waves,<sup>78 79 80 81</sup> with recent enhanced success.<sup>82</sup> Other investigators publish reports of above chance occurrences of magnetoencephalographic (MEG) word recognition.<sup>83</sup> The current publications lack reference to a 1975 US government technical report of prior results from Stanford, which are comparable to the results published in recent articles.<sup>84</sup> Current publications also lack reference to an apparent Russian report of specific EEG word recognition before 1981.<sup>85</sup> Electroencephalographic (EEG) instant detection by syllables of “a content of category which the testee wishes to speak” quotes Kiyuna et al.<sup>[E4]</sup> Patent #5785653 “System and method for predicting internal condition of live body.”<sup>86</sup> One stated use for this technology is “to detect the internal condition of surveillance in criminal investigation” using an EEG. NEC Corporation licensed this patent. The Mardrossian Patent #6011991 “Communication system and method including brain wave analysis and/or use of brain activity” is a system and method for enabling human beings to communicate by way of their monitored brain activity. Cited uses for this include remote EEG communication with Armed Forces or clandestine applications.<sup>87</sup> This patent affirms EEG word recognition, proposes skin implants containing transmitters, and utilizes neural networks (artificial intelligence). It is licensed by Technology Patents, LLC.

Activation of brain cell assemblies provides a theoretical framework<sup>88</sup> for the above word recognition reports, and extensive publications of averaged EEG word category differentiation. These differentiation reports themselves are consistent with specific word recognition, since they are based on visual analysis of averaged categories, without the use of sophisticated computer programs as are essential for specific word recognition. Based on EEG/MEG responses, words can be differentiated as to length,<sup>89</sup> and visual nouns can be differentiated from action verbs.<sup>90 91 92 93 94</sup> Brain wave patterns distinguish proper names from common nouns,<sup>95</sup> animal names from numerals,<sup>96</sup> or content from function words.<sup>97 98 99 100</sup> Face, arm, or leg action verbs are reportedly distinguished by brain waves as well.<sup>101 102</sup> Concrete versus abstract words,<sup>103</sup> and unambiguous versus ambiguous noun/verbs<sup>104</sup> have distinctive EEG patterns.

Some of these word category differentiation reports are consistent with both the specific recognition reports, and/or the differentiation of non-verbal cognition. Based on EEG/MEG responses, words are readily distinguished from non-words,<sup>105 106 107</sup> or pictures.<sup>108</sup> EEG differentiation of words rated as to affective meaning such as good-bad, strong-weak, or active-passive is reported.<sup>109 110</sup>

Other literature indicates EEG differentiation of completely non-verbal cognition. Differentiation of emotions by EEG is patented, as referenced in Air Force research.<sup>111</sup> Movement anticipation potentials (bereitschaftspotential) and those of actual movement are detectable by EEG.<sup>112 113</sup> EEG movement signals have been used to move a cursor left or right,<sup>114</sup> and just the imagination of movement is sufficiently distinguished by EEG to control switches,<sup>115</sup> or control prosthesis grasp.<sup>116</sup> Reported in the literature are instances of guiding robots through simulated rooms by EEG detection of the act of imagining the spinning of cubes or arm rising in the appropriate direction.<sup>117 118 119</sup> Even more complex controlling of robot arms, such as reaching and grasping, has been achieved through signals from brain electrodes implanted in monkeys without body arm movement.<sup>120</sup> A number of groups have developed procedures to detect deception based on the P300 (positive @ 300 millisecc.) event related potential (ERP) from EEG.<sup>121 122 123 124 125 126</sup> A

commercial system, Brain Fingerprinting,<sup>127</sup> which includes analysis of a late negative ERP potential and frequency analysis in addition to the P300, even asserts 100% accuracy over five separate studies.<sup>128 129 130 131 132 vi</sup>

Functional magnetic resonance imaging (fMRI) studies also report differentiation of cognitive states. Different fMRI brain activation loci for face, natural and manufactured object recognition are reviewed.<sup>133</sup> Neural network differentiation of fMRI response to noun categories for fish, four legged animals, trees, flowers, fruits, vegetables, family members, occupations, tools, kitchen items, dwellings, and building parts is reported.<sup>134</sup> Distinguishing truthful from deceptive responses by fMRI is also reported.<sup>135 136 137 138</sup> The ability to discern the state of romantic love towards an individual by fMRI has been reported as well.<sup>139</sup>

The research arm of agencies with missions to covertly acquire information would certainly aim to develop the operational capabilities of any technologic thought reading potential. There have been many assertions that development has progressed. Two such assertions have been confirmed by details of the 1975 government EEG specific word recognition report, which itself is evidence of covert development.<sup>83</sup> A synopsis of an International Committee of the Red Cross Symposium discusses development of EEG computer mind reading by Lawrence Pinneo in 1974 at Stanford.<sup>140</sup> A 1976 letter written by Robert L. Gilliat, the Department of Defense Assistant General Counsel for Manpower, Health, and Public Affairs, affirmed research about brain wave reading was being conducted by the Advanced Research Projects Agency.<sup>141</sup> “Thought reading or synthetic telepathy” communications technology procurement is discussed in a 1993 Jane’s<sup>vii</sup> Special Operations Forces (SOF) article: “One day, SOF commandos may be capable of communicating through thought processes.”<sup>142</sup> Descriptive terms for this type of communication include “mental weaponry and psychic warfare.” Although contemplated in future contexts, the availability of a technology without adaptation to troop level requirements is implied, since anticipation of mobile deployment would have to assume prior development.

In 1976, the Malech Patent #3951134 “Apparatus and method for remotely monitoring and altering brain waves” was granted.<sup>143</sup> An example was given of the apparatus operating at 100 and 210 MHz, frequencies which penetrate obstructions. Quotes from this patent application which indicate remote capacity include: “The individual components of the system for monitoring and controlling brain wave activity may be of the conventional type commonly employed in radar” and “The system permits medical diagnosis of patients, inaccessible to physicians, from remote stations.” This patent was licensed to Dorne & Margolin Inc., but now resides in the public domain. The Malech patent utilizes interference of 210 and 100 MHz frequencies resulting in a 110 MHz return signal, which is demodulated to give electroencephalographic waveforms.

The capability of remote electroencephalography is predicted by electromagnetic scattering theory using ultrashort pulses, which are not part of the Malech patent.<sup>144</sup> Ultrashort pulses are currently defined in the range of  $10^{-12}$  to  $10^{-15}$  seconds. EEG word elicited potentials are comparatively long (hundreds of milliseconds). This indicates that

---

<sup>vi</sup> Referred to, but unavailable, are a CIA Office of Technology Assessment report, a security industry publication, and a doctoral dissertation.

<sup>vii</sup> Jane’s is the most respected and authoritative of defense reporting services.

remote radar EEG capture is adequate to word recognition, with ultrashort pulses allowing some  $10^9$  or more radar reflections in a millisecond ( $10^{-3}$  sec.)

The possibility of impressing an 'experience set' [E5] on an individual by ultrashort pulses is also contemplated.<sup>143</sup> The Malech patent can alter brain waves as well as detect them. Microwave non-lethal weapon brain wave disruption<sup>145</sup> and behavioral changes, including unconsciousness<sup>146</sup> have been documented.<sup>35</sup>

The above electroencephalographic telemetry patent and ultrashort pulse method are conducted using an active radar probe. Yet a passive field extends as far as 12 feet from a person, as detected by a cryogenic antenna.<sup>147</sup> A technical article maintains this device is entirely adaptable to clandestine applications, and pointedly comments on the disappearance since the 1970's of literature concerning the physiological remote sensing of animals and humans. All other categories of remote sensing research have greatly expanded.<sup>148</sup>

## DISCUSSION

Completely rejecting assertions of a remote mind reading capability is just as presumptuous, in the face of complaints, as the dismissal of internal voice capacity. Considerable capacity exists to detect and differentiate mental states, particularly by electroencephalography. This is evidenced by literature reports. The fact that electroencephalographic movement imagination signals are detected for robot guidance on a voluntary, unprompted basis<sup>116 117 118</sup> suggests a similar capacity is feasible for specific electroencephalographic word identification, which has only been reported for word prompted responses. Though references to remote electroencephalography are fewer, they imply the existence of possible exploitable mechanisms, which may be covertly developed.

## LEGAL AND INTERNATIONAL REFERENCES TO BEHAVIORAL INFLUENCE TECHNOLOGIES

References to behavioral influence weapon use by government bodies and international organizations are numerous. Negotiation submissions to the United Nations Committee on Disarmament affirm the reality the effects of microwave weaponry on the nervous system.<sup>149</sup> European Parliament passage of resolutions calling for conventions regulating non-lethal weapons and the banning of "weapons which might enable any form of manipulation of human beings"<sup>150</sup> includes neuro-influence capability.<sup>151</sup> A resolution relates to HAARP (High Frequency Active Auroral Research Project) which has environmental consequences, and although utilizing high frequency, ionospheric extra low frequencies (ELF) emanation results. [E6] Since ELF are part of brain wave frequencies in general, the project has the capacity to influence whole populations.<sup>152 153</sup> President Carter's National Security Advisor, Zbigniew Brzezinski, predicted the development of such capacities.<sup>154</sup> Nature News reports the concern of a French government panel about the potential for thought reading and remote capacities.<sup>155</sup> An American draft law prohibiting land, sea, or space-based weapons using electromagnetic, psychotronic (behavioral influence), and sound technologies "directed at individual persons or targeted populations for the purpose of information war, mood management,



or mind control” has not yet passed.<sup>156</sup> Russian electromagnetic standards are nearly 1000 times lower than in the West, so their laws forbidding electromagnetic weapons exceeding Health Department parameters are strict.<sup>157</sup> The Russian draft law explicitly references behaviorally influenced non-lethal weapons, and their development in several countries.<sup>158</sup> Resolutions by the International Union of Radio Science recognize criminal use of electromagnetic technology, though they largely relate to use against infrastructure.<sup>159</sup>

## MICROWAVE AND ULTRASOUND USE AGAINST HUMANS

The microwave irradiation of the American Embassy in Moscow [E7]received little publicity until the instillation of protective screening in the winter of 1976, but the incident has been known about since 1953.<sup>34</sup> Original frequencies were 2.56-4.1 GHz, with additional intermittent 0.6-9.5 GHz signals being permanent by 1975 in a wide band frequency hopping<sup>viii</sup> consistent pattern with one signal pulsating. [E8]The irradiation was directed and modulated from nearby buildings. Complaints to the Soviets were to no avail; however the signals disappeared in January 1979 “reportedly as a result of a fire in one or more of the buildings.”<sup>160</sup> A 9-11 GHz signal recurred in 1988.<sup>161</sup> Observed frequencies were basically within the microwave hearing spectrum, and pulsation was required. Psychiatric cases occurred during the exposure period, though no epidemiological relationship was revealed (fully a quarter of the medical records were unavailable and comparisons with other Soviet Bloc posts were made).<sup>159</sup> The CIA had Dr. Milton Zaret review Soviet medical literature concerning microwaves to determine the purpose of the irradiation. He concluded the Russians “believed the beam would modify the behavior of the personnel.”<sup>162</sup> In 1976, the American Embassy in Moscow was declared an unhealthy environment and employees’ salaries were raised by 20%.<sup>140</sup>

The most documented incident of citizens being irradiated by microwaves was during a peace protest at Greenham Common American Air Force Base in Berkshire England[E9]. Protesters experienced unusual symptoms as a result of the irradiation, prompting an investigation.<sup>163</sup> Radiation measurements exhibited microwaves with symptom experience up to a hundred times the background level, and rose sharply on protests nearer the base.<sup>160</sup> Symptoms became pronounced in protestors who were on a cruise missile transport vehicle, which was a focus of the protestors.<sup>160</sup> A wide range of complaints were recorded, including burning of skin, severe headaches, drowsiness, temporary paralysis, uncoordinated speech, two late term (5 mos.) spontaneous abortions, an apparent circulatory failure, unusual menstrual synchronization, and irregular or postmenopausal menstruation. The symptom complex was consistent with electromagnetic exposure syndrome.<sup>160</sup> It was also reported that some of the female victims ‘heard voices.’<sup>164</sup> The base was eventually closed in 1991.

Criminal directed energy weapon use has been reported in Germany.<sup>165</sup> In a number of cases there is similarity of circumstances, complaints, and symptoms. In at least one case, microwave fields have been measured with exclusion of the usual sources (cell phone towers, etc.)<sup>166</sup> Plans for construction of a crude device from a microwave oven are sold.<sup>164</sup>

---

<sup>viii</sup> A means of evading detection.

Measurement of non-ionizing radiation fields in the vicinity of an Australian victim is described.<sup>167</sup> The intensity ranged from 7 mV in an adjacent room to 35 mV next to the head. The victim suffered from multiple personality disorder attributed to ritual abuse, and claimed an implant with radiological evidence.

Ultrasound behavioral influence technology use in Northern Ireland is cited.<sup>168</sup> The device could focus on one person; and utilized ultrasound cancellation like those patented. It was employed in Vietnam by the Americans, and is known as the squawk box. The referenced infrasound frequency (ultrasound carrier directed) is like Loos 1/25/00 patent, with psychological effects summarized as ‘spooky.’ More detail by a defense journalist suggests that: “When the two frequencies mix in the human ear they become intolerable. Some people exposed to the device are said to feel giddy or nauseous and in extreme cases they faint. Most people are intensely annoyed by the device and have a compelling wish to be somewhere else.”<sup>169</sup> British police inventories list the specific device, though a spokesman denied use.<sup>160</sup>

Sophisticated behavioral influence capability is confirmed by ex-intelligence officers. Julianne McKinney, Director of The National Security Alumni Electronic Surveillance Project is prominent. This is a largely classified employee victim study with internal voice transmission avowal.<sup>170</sup>

## CONCLUSION

The logic in the prediction by Brzezinski<sup>ix</sup> of the appearance of a more controlled and directed society dominated by a power elite willing to use the latest modern techniques for influencing behavior without hindrance by liberal democratic values is compelling.<sup>153</sup> Potential behavioral influence targets are multiple. Since “experts” regard a victim’s perceptions as psychotic, all complaints are disregarded, including the capability to bear witness. Targets may include anyone worth neutralization: domestic adversaries;<sup>171</sup> security risks, which may only comprise classified disclosures; persons witnessing serious improprieties; and those prone to committing advantageous felonies. Legality is readily circumvented by executive orders, (particularly declaration of a crisis or emergency situation), which can be sealed, and this prerogative is only accountable to co-equal branches of government as is now the case with terrorism suspects. Internal voice technology is most applicable within the same language and culture. Space here limits more than mention of remote EEG influence capacity, hypnosis, and footnoting remote subliminal technique. Hypnotic or subliminal message presentation represents particularly insidious means of influencing thought, mood, behavior, and undermining civil liberties.

Most complainants allege public sector involvement or sub-contracted private companies.<sup>172</sup> Remote behavioral influence research has long been funded by the US,<sup>39</sup> with evidence of development<sup>19 22 36 45 46</sup> and weapons,<sup>18 44 47 48 51</sup> though it denies, on national security grounds, publication of project results<sup>37</sup> and foreign literature

---

<sup>ix</sup> National Security Advisor to President Carter.

analyses.<sup>173</sup> Some thirty countries evidence active behavioral influence weapon research.<sup>174</sup>

Though there is some scant psychoanalytical acknowledgement,<sup>175</sup> current medical awareness ensures effective neutralization of the afflicted. Not all those affected are stigmatized. However, the phenomena of ‘hearing voices,’ or perception of remote manipulation, when recounted to health professionals results in various stigmatizing diagnoses,<sup>176 177</sup> totally without investigation. Determination of relevant fields around complainants is mandatory, or abatement by proven shielding of such phenomena. [10]Professional opinions formed without excluding these technologies are negligent.

The medical community has long heard either identical or similar complaint<sup>178</sup> to that above delineated as known internal voice technology from numerous victims. This fact indicts the scholarship and presumption of impossibility evident in the pertinent medical literature. In addition, microwave bioeffects have considerable congruence with reported symptoms of major psychosis other than “voices.”<sup>179</sup> All of society should be disturbed at the prospect of technologic induction of voice, since the unaware subject would perceive such voices as his own natural thought, without such an assault as to provoke complaint.

It is difficult to deny the level of substantiation for the possibility that a thought reading capacity exists, even with references that support a remote basis. It is reasonable to assume that in the thirty years since the Pinneo work started, this capability has had full development, and it is unreasonable is to dismiss victim corroboration. It would have to be admitted that funding for projects by the defense and security agencies is considerably greater than for open science, and that thought reading would be a priority area. Educated democracies should not be complacent at this prospect, given the potential for political control, and existence of a remote EEG method of thought reading in the public domain.

Acknowledgements: Thanks are given to God for inspiration, and a benefactor of Christians Against Mental Slavery for financial support. There is gratitude also to Dr. Paul Canner and Dr. Allen Barker for their suggestions.

All patents are printable from the U. S. Patent Office website.  
EEG word recognition articles are printable thru PubMed as designated.  
Each is free.

“Feasibility Study for Design of a Biocybernetic Communication System” is available from Christians Against Mental Slavery at [info@slavery.org.uk](mailto:info@slavery.org.uk).

## REFERENCES<sup>[11]</sup>

---

<sup>1</sup> Mind Justice (formerly, Citizens Against Human Rights Abuse). Director, Cheryl Welsh. From <http://www.mindjustice.org/>

<sup>2</sup> Christians Against Mental Slavery. Secretary, John Allman. From <http://www.slavery.org.uk/>

<sup>3</sup> Moscow Committee for the Ecology of Dwellings. Chairman, Emile Sergeevne Chirkovoi. From <http://www.moskomekologia.narod.ru>

- <sup>4</sup> International Movement for the Ban of Manipulation of the Human Nervous System by Technologic Means. Founder, Mojmir Babacek. From <http://www.geocities.com/CapeCanaveral/Campus/2289/webpage.htm>
- <sup>5</sup> Presman, A. S. (1970). *Electromagnetic Fields and Life*. New York: Plenum. Presman mentions Cazzimalli and another English reference to this Italian work at <http://www.datafilter.com/mc/jaski.html> p. 2, a semi-popular treatment with references.
- <sup>6</sup> Frey AH. (1962). "Human Auditory System response to modulated electromagnetic energy." *Journal of Applied Physiology* 17 (4): 689-92.
- <sup>7</sup> Stocklin, P. L. (1989). Patent #4858612, "Hearing device." USPTO granted 8/22/89.
- <sup>8</sup> Frey, A. H. and R. Messenger. (1973). "Human Perception of Illumination with Pulsed Ultrahigh-Frequency Electromagnetic Energy." *Science* 181: 356-8.
- <sup>9</sup> Eichert, E. S. and A. H. Frey. (1976). "Human Auditory System Response to Lower Power Density Pulse Modulated Electromagnetic Energy: A Search for Mechanisms." *Journal of Microwave Power* 11(2): 141.
- <sup>10</sup> Michaelson, S. M. (1975). "Sensation and Perception of Microwave Energy." In S. M. Michaelson, M. W. Miller, R. Magin, and E. L. Carstensen (Eds.), *Fundamental and Applied Aspects of Nonionizing Radiation* (pp. 213-24), New York: Plenum Press.
- <sup>11</sup> Puranen, L. and K. Jokela. (1996). "Radiation Hazards Assessment of Pulsed Microwave Radars." *Journal of Microwave Power and Electromagnetic Energy* 31(3): 165-77.
- <sup>12</sup> Hermann, D. M. and K. A. Hossman. (1997). "Neurological effects of microwave exposure related to mobile communication." *Journal of Neurological Science* 152: 1-14.
- <sup>13</sup> Lai, H. (1994). "Neurological Effects of Radiofrequency Electromagnetic Radiation." In Lin, J. C. (ed.), *Advances in Electromagnetic Fields in Living Systems*, vol 1. New York, London: Plenum.
- <sup>14</sup> Elder, J. A. and C. K. Chou. (2003). "Auditory Responses to Pulsed Radiofrequency Energy." *Bioelectromagnetics Supplement* 8: S162-73.
- <sup>15</sup> Kreithen, M. L. (1998). Patent #5774088, "Method and system for warning birds of hazards." USPTO granted 6/30/98.
- <sup>16</sup> Lenhardt, M. L. and A. L. Ochs. (2001). Patent #6250255, "Methods and apparatus for alerting and/or repelling birds and other animals." USPTO granted 6/26/01.
- <sup>17</sup> Nordwall, B. D. (1997). "Radar Warns Birds of Impending Aircraft." *Aviation Week and Space Technology* March 10, 1997, p 65-6.
- <sup>18</sup> Center for Army Lessons Learned. "Center for Army Lessons Learned Thesaurus." From <http://call.army.mil/products//thesaur/00016275.htm>
- <sup>19</sup> Justesen, D. R. (1975). "Microwaves and Behavior." *American Psychologist*, 392(Mar): 391-401. Excerpted reference from <http://www.raven1.net/v2succes.htm>
- <sup>20</sup> Lin JC (1978). *Microwave Auditory Effects and Applications*. Springfield, Ill.: Thomas.
- <sup>21</sup> United States Senate. (1976). "Surveillance Technology, 1976: policy and implications, an analysis and compendium of materials: a staff report of the Subcommittee on Constitutional Rights of the Committee of the Judiciary." Ninety-fourth Congress, second session, p 1280, US GOV DOC Y 4.J 882:SU 7/6/976.
- <sup>22</sup> Oskar, K. J. (1980). "Effects of low power microwaves on the local cerebral blood flow of conscious rats." In *Army Mobility Equipment Command Report, # AD-A090426, 1980*. Available from NASA Technical Reports.
- <sup>23</sup> Brunkan, W. B. (1989). Patent #4877027, "Hearing system." USPTO granted 10/31/89.
- <sup>24</sup> Frey, A. H. (1965). "Behavioral Biophysics." *Psychology Bulletin* 63(5): 322-37.
- <sup>25</sup> Thijs, V. M. J. (1992). Application #WO1992NL0000216, "Hearing Aid Based on Microwaves." World Intellectual Property Organization, Filed 1992-11-26, Published 1993-06-10. Not a US Patent. From <http://www.delphion.com/details?pn=WO09310730A1>.
- <sup>26</sup> Stocklin, P. L. and B. F. Stocklin. (1979). "Possible Microwave Mechanisms of the Mammalian Nervous System." *T-I-T J Life Science* 9: 29-51.
- <sup>27</sup> Beason, R.C. and P. Semm. (2002). "Responses of neurons to an amplitude modulated microwave stimulus." *Neuroscience Letters* 333: 175-78.
- <sup>28</sup> Adey, W.R. (1981). "Biological Effects of Low Energy Electromagnetic Fields On the Central Nervous System." In *NATO Advanced Study Institute on Advances in Biological Effects and Dosimetry of Low Energy Electromagnetic Fields*. Erice, Italy: Plenum.
- <sup>29</sup> Shepherd, G. M. (1988). *Neurobiology*, 2nd ed. New York-Oxford: Oxford Univ. Press.

- <sup>30</sup> Bise, W. (1978). "Low power radio-frequency and microwave effects on human electroencephalogram and behavior." *Physiological Chemistry and Physics* 10(5): 387-98.
- <sup>31</sup> Puharich, H. K. and J. L. Lawrence. (1971). Patent #3629521, "Hearing systems." USPTO granted 12/21/71.
- <sup>32</sup> Flanagan, G. P. (1968). Patent #3393279, "Nervous System Excitation Device." USPTO granted 7/16/68.
- <sup>33</sup> Frolich, H. (1980). "The Biological Effects of Microwaves and Related Questions." *Advanced Electronics and Electron Physics* 53: 85-152.
- <sup>34</sup> Steneck, N. H. (1984). *The Microwave Debate*. Cambridge, Mass.: MIT Press.
- <sup>35</sup> Becker, R. O. (1990). *Cross Currents*. Los Angeles: Jeremy P. Tarcher, Inc. and St Martin's Press.
- <sup>36</sup> Kohn, B. (1993). "Communicating Via the Microwave Auditory Effect." Defense Department Awarded SBIR Contract # F41624-95-C9007. From [http://es.epa.gov/ncer\\_abstracts/sbir/other/monana/kohn.html](http://es.epa.gov/ncer_abstracts/sbir/other/monana/kohn.html) and <http://www.raven1.net/v2s-kohn.htm>
- <sup>37</sup> Margo P. Cherney Freedom of Information Act Memorandum at <http://www.raven1.net/usafletr.jpg>
- <sup>38</sup> Castelli, C. J. (2001). "Questions Linger about Health Effects of DOD's 'Non-Lethal Ray.'" *Inside the Navy* 14(12): 1-6. From <http://globalsecurity.org/org/news/2001/e20010327questions.htm>
- <sup>39</sup> Becker, R. O. and G. Selden. (1985). *The Body Electric: Electromagnetism and the Foundation of Life*. New York: Quill William Morrow.
- <sup>40</sup> Center for Army Lessons Learned. "Center for Army Lessons Learned Thesaurus." From [http://call.army.mil/products/thesaur\\_e/00016275.asp](http://call.army.mil/products/thesaur_e/00016275.asp)
- <sup>41</sup> Lowery, O. M. (1992). Patent #5159703, "Silent subliminal presentation system." USPTO granted 10/27/92.
- <sup>42</sup> Lowrey, A. (2000). Patent #6052336, "Apparatus and method of broadcasting audible sound using ultrasonic sound as a carrier" USPTO granted 4/18/00.
- <sup>43</sup> Monroe, R. A. (1994). Patent #5356368, "Method of and apparatus for inducing desired states of consciousness." USPTO granted 10/18/94.
- <sup>44</sup> Norris, E. G. (1999). Patent #5889870, "Acoustic Heterodyne device and method." USPTO granted 3/20/99.
- <sup>45</sup> American Technology Corporation. (2001). "American Technology Corporation Announces Acoustic Non-Lethal Acoustical Weapon Technology for Military and Law Enforcement." Press release.
- <sup>46</sup> —. (2003a). "American Technology Corporation Shareholder Alert." Press release of 4/23/03 from [http://www.atcsd.com/PressReleases/04\\_23\\_03.html](http://www.atcsd.com/PressReleases/04_23_03.html)
- <sup>47</sup> —. (2003b). "American Technology Corporation Announces Generation II HSSR Emitter at Annual General Meeting." Press release of 5/30/03 from [http://www.atcsd.com/PressReleases/05\\_30\\_03.html](http://www.atcsd.com/PressReleases/05_30_03.html)
- <sup>48</sup> —. (2003c). "American Technology Corporation Awarded Key Military Contract to Deliver Modified Long Range Acoustic Devices (LRADTM)." Press release of 10/21/03 from [http://www.atcsd.com/PressReleases/10\\_21\\_03.html](http://www.atcsd.com/PressReleases/10_21_03.html)
- <sup>49</sup> —. (2003d). "American Technology Corporation Announces Expansion of Military Business." Press release of 6/30/03 from [http://www.atcsd.com/PressReleases/06\\_30\\_03.html](http://www.atcsd.com/PressReleases/06_30_03.html)
- <sup>50</sup> Sparrow, D. (2002). "Best of What's New Grand Award Winner: Hypersonic Sound." *Popular Science* Dec 2002: 94.
- <sup>51</sup> Bunker, R. J. (Ed.). (2000). *Less-than-lethal Weapons: Reference Guidebook*. National Law Enforcement and Corrections Technology, Western Region (Los Angeles). Similar treatment is Bunker, R. J. (ed.), *Nonlethal Weapons Terms and References*, INSS Occasional Paper 15, USAF Institute for National Security Studies, USAF Academy, Colorado. From <http://www.usafa.af.mil/inss/OCP/ocp15.pdf>
- <sup>52</sup> Alexander, J.B. (1999). *Future War: Non-Lethal Weapons in Twenty-First-Century Warfare*. New York: St. Martin's Press.
- <sup>53</sup> Audio Spotlight, Holosonic Research Labs. From <http://www.holosonics.com/>
- <sup>54</sup> Lawton, G. (2000). "They are playing my tune." *New Scientist* 9 Sept. p 38-42.
- <sup>55</sup> Loos, H. G. (2000). Patent #6017302, "Subliminal acoustic manipulation of nervous systems." USPTO granted 1/25/00.
- <sup>56</sup> Hunt, A., C. Tillery, and N. Wild. (2001). "Through-the-Wall Surveillance Technologies." *Corrections Today* 63(4): 132-3.
- <sup>57</sup> Frey AH. (1998). "Headaches from Cellular Telephones: Are They Real and What Are the Implications." *Environmental Health Perspectives* 106(3): 101-3.

- <sup>58</sup> Lin, J. C. (1999). "Cellular Telephones and Their Effect on the Human Brain." *Mob Computer and Communications Review* 3(3): 34-5.
- <sup>59</sup> Nolan, P.J. (1993). *Fundamentals of College Physics*. Dubuque, Iowa; Melbourne, Australia; Oxford, England: Wm. C. Brown..
- <sup>60</sup> Reits, B. J. (1998). Patent #5736966, "Adjustable microwave antenna." USPTO granted 4/7/98.
- <sup>61</sup> Maier, G. and D. Harrison. (1998). Patent #5825554, "Lenses with a variable refraction index." USPTO granted 10/20/98.
- <sup>62</sup> Jasper, L. J. (2002). Patent #6407708, "Microwave generator/radiator using photoconductive switching and dielectric lense." USPTO granted 6/18/02.
- <sup>63</sup> Hablov, D. V., O. I. Fisun, L. N. Lupichev, V. V. Osipov, V. A. Schestiperov, and R. Schimko. (1995). Patent #5448501, "Electronic life detection system." USPTO granted 9/5/95.
- <sup>64</sup> —. (1996). Patent #5530429, "Electronic surveillance system." USPTO granted 6/25/96.
- <sup>65</sup> Giori, F. A. and A. R. Winterberger. (1967). "Remote Physiological Monitoring Using a Microwave Interferometer." *Biomedical Science Instruction* 3: 291-307.
- <sup>66</sup> Fullerton, L. W. and J. I. Richards. (2002). Patent #6400307, "System and method for intrusion detection using a time domain radar array." USPTO granted 6/4/02.
- <sup>67</sup> Time Domain Corporation. From <http://www.radarvision.com/>
- <sup>68</sup> Nacci, P. "Radar-Based Through-the-Wall Surveillance System." National Law Enforcement and Corrections Center. From [http://www.raven1.net/nij\\_p26.htm](http://www.raven1.net/nij_p26.htm)
- <sup>69</sup> Ferris, D. D. (1998). "Microwave and millimeter-wave systems for wall penetration." *SPIE Proceedings* 3375: 269-79.
- <sup>70</sup> Frazier, L. M. (1995). "Surveillance through walls and other opaque materials." *SPIE Proceedings* 2497: 115-19.
- <sup>71</sup> Radar, P. C. From [http://www.si-tex.com/html/radar\\_pc.html](http://www.si-tex.com/html/radar_pc.html)
- <sup>72</sup> Rowan, L. (1990). Patent #4893815, "Interactive transector device commercial and military grade." USPTO granted 1/16/90.
- <sup>73</sup> Systems & Electronics, Inc. "Manportable Surveillance and Target Acquisition Radar." From <http://www.seistl.com/images/pdf/mstar.pdf>
- <sup>74</sup> Brookner, E. (1998). *Tracking and Kalman Filtering Made Easy*. New York: Wiley.
- <sup>75</sup> Tisdale, G. E. and H. B. Lindemann. (1985). Patent #4497065, "Target recognition system enhanced by active signature measurements." USPTO granted 1/29/85.
- <sup>76</sup> Peralta, E. A. and K. M. Reitz. (1985). Patent #4562439, "Imaging radar seeker." USPTO granted 12/31/85.
- <sup>77</sup> Ahlstrom, L.G.W. (1989). Patent #4796834, "Method for combating of targets and projectile or missile for carrying out the method." USPTO granted 1/10/89.
- <sup>78</sup> Suppes, P., Z. Lu, and B. Han. (1997). "Brain wave recognition of words." *Proceedings of the National Academy of Science* 94: 14965-69.
- <sup>79</sup> Suppes, P., B. Han, and Z. Lu. (1998). "Brain-wave recognition of sentences." *Proceedings of the National Academy of Science* 95: 15861-66.
- <sup>80</sup> Suppes, P, B. Han, J. Epelboim, and Z. Lu. (1999a). "Invariance of brain-wave representations of simple visual images and their names." *Proceedings of the National Academy of Science* 96: 14658-63.
- <sup>81</sup> —. (1999b). "Invariance between subjects of brain wave representations of language." *Proceedings of the National Academy of Science* 96(22): 12953-8.
- <sup>82</sup> Suppes, P. and B. Han. (2000). "Brain-wave representation of words by superposition of a few sine waves." *Proceedings of the National Academy of Science* 97: 8738-43.
- <sup>83</sup> Assadullahi R and F. Pulvermuller. (2001). "Neural Network Classification of Word Evoked Neuromagnetic Brain Activity." In Wernter S, Austin J, and Willahaw D (Eds.), *Lecture Notes in Artificial Intelligence: Emergent Neurocomputational Architechures Based on Neuroscience* (pp. 311–320). Heidelberg: Springer. More limited preliminary communication from <http://www.his.sunderland.ac.uk/durhamab/ramin.doc>
- <sup>84</sup> Pinneo, L. R. and D. J. Hall. (1975). "Feasibility Study for Design of a Biocybernetic Communication System." In Report #ADA017405 National Technical Information Service, 1975. Prepared for the Advanced Research Projects Agency Order #2034, Program Code #2D20. Contractor: Stanford Research Institute. Contract dates: 2/9/72-8/31/76, SRI Project LSU-1936.
- <sup>85</sup> Selden, G. (1981). "Machines That Read Minds." *Science Digest* 89: 60-6.

- <sup>86</sup> Kiyuna, T., T. Tanigawa, and T. Yamazaki. (1998). Patent #5785653 “System and method for predicting internal condition of live body.” USPTO granted 7/28/98.
- <sup>87</sup> Mardirossian, A. (2000). Patent #6011991, “Communication system and method including brain wave analysis and/or use of brain activity” USPTO granted 1/4/00.
- <sup>88</sup> Pulvermuller, F. (1999). “Words in the brain’s language.” *Behavioral Brain Science* 22: 253-336..
- <sup>89</sup> Assadollahi, R. and F. Pulvermuller. (2001a). “Neuromagnetic evidence for early access to cognitive representations.” *Cognitive Neuroscience and Neurophysiology* 12(2): 207-13.
- <sup>90</sup> Preissl, H., F. Pulvermuller, W. Lutzenberger, and N. Birbaumer. (1995). “Evoked potentials distinguish between nouns and verbs.” *Neuroscience Letters* 197: 81-3.
- <sup>91</sup> Pulvermuller, F., B. Mohn, and H. Schleicher. (1999). “Semantic or lexico-syntactic factors: what determines word-class specific activity in the human brain?” *Neuroscience Letters* 275: 81-4.
- <sup>92</sup> Pulvermuller, F., W. Lutzenberger, and H. Preissl. (1999). “Nouns and Verbs in the Intact Brain: Evidence from Event-related Potentials and High-frequency Cortical Responses.” *Cerebral Cortex* 9(5): 497-506..
- <sup>93</sup> Pulvermuller, F., H. Preissl, W. Lutzenberger, and N. Birbaumer. (1996). “Brain Rhythms of Language: Nouns Versus Verbs.” *European Journal of Neuroscience* 8: 917-41.
- <sup>94</sup> Kellenbach, M. L, A. A. Wijers, M. Hovius, J. Mulder, and G. Mulder. (2002). “Neural Differentiation of Lexico-Syntactic Categories or Semantic Features? Event-Related Potential Evidence for Both.” *Journal of Cognitive Neuroscience* 14(4): 561-77.
- <sup>95</sup> Muller, H. M. and M. Kutas. (1996). “What’s in a name? Electrophysiological differences between spoken nouns, proper names and one’s own name.” *Neuroreport* 8: 221-5.
- <sup>96</sup> Dehaene, S. (1995). “Electrophysiological evidence for category-specific word processing.” *Neuroreport* 6: 2153-7.
- <sup>97</sup> Neville, H. J., D. Mills, and D. S. Lawson. (1992). “Fractionating Language: Different Neural Subsystems with Different Sensitive Periods.” *Cerebral Cortex* 2: 244-58..
- <sup>98</sup> Pulvermuller, F., W. Lutzenberger, and N. Birbaumer. (1995). “Electrocortical distinction of vocabulary types.” *Electroencephological Clinical Neurophysiology* 94: 357-70.
- <sup>99</sup> Mohr, B., F. Pulvermuller, and E. Zaidel. (1994). “Lexical Decision After Left, Right, and Bilateral Presentation of Function Words, Content Words, and Non-Words: Evidence For Interhemispheric Interaction.” *Neuropsychologia* 32(1): 105-24.
- <sup>100</sup> Munte, T. F., B. M. Wieringa, H. Weyerts, A. Szentkuti, M. Matzke, and S. Johannes. (2001). “Differences in brain potentials to open and closed class words: class and frequency effects.” *Neuropsychologia* 39: 91-102.
- <sup>101</sup> Pulvermuller, F., M. Harle, and F. Hummel. (2001). “Walking or Talking? Behavioral and Neurophysiological Correlates of Action Verb Processing.” *Brain Language* 78: 143-68.
- <sup>102</sup> —. (2000). “Neurophysiological distinction of verb categories.” *Cognitive Neuroscience* 11(12): 2789-93.
- <sup>103</sup> Kounios, J., and P. J. Holcomb. (1994). “Concreteness Effects in Semantic Processing: ERP Evidence Supporting Dual-Coding Theory.” *Journal of Experimental Psychology* 20(4): 804-23..
- <sup>104</sup> Federmeier, K. D., J. B. Segal, T. Lombrozo, and M. Kutas. (2000). “Brain responses to nouns, verbs and class-ambiguous words in context.” *Brain* 123(12): 2552-66.
- <sup>105</sup> Krause, C. M., P. Korpilahti, B. Porn, J. Joskim, and H. A. Lang. (1998). “Automatic auditory word perception as measured by 40 Hz EEG responses.” *Encephalic Clinical Neurophysiology* 107: 84-7.
- <sup>106</sup> Diesch, E., S. Biermann, and T. Luce. (1998). “The magnetic mismatch field elicited by words and phonological non-words.” *Neuroreport* 9(3): 455-60.
- <sup>107</sup> Lutzenberger, W., F. Pulvermuller, and N. Birbaumer. (1994). “Words and pseudowords elicit distinct patterns of 30-Hz EEG responses.” *Neuroscience Letters* 176: 115-18.
- <sup>108</sup> Kiefer, M. (2001). “Perceptual and semantic sources of category-specific effects: Event-related potentials during picture and word categorization.” *Memory and Cognition* 29(1): 100-16.
- <sup>109</sup> Skrandies, W. (1998). “Evoked potential correlates of semantic meaning—A brain mapping study.” *Cognitive Brain Research* 6: 175-183.
- <sup>110</sup> Skrandies, W. and M. J. Chiu. (2003). “Dimensions of affective meaning – behavioral evoked potential correlates in Chinese subjects.” *Neuroscience Letters* 341: 45-8.
- <sup>111</sup> Patton, R. E. (2001). Patent #6292688, “Method and apparatus for analyzing neurological response to emotion-inducing stimuli.” USPTO granted 9/18/01.

- <sup>112</sup> Deeke, L. (1987). "Bereitschaftspotential as an indicator of movement preparation in supplementary motor area and motor cortex." *Ciba Foundation Symposium* 182:132-231.
- <sup>113</sup> Chen, R. and M. Hallett. (1999). "The Time Course of Changes in Motor Cortex Excitability Associated with Voluntary Movement." *Canadian Journal of Neurological Science* 26(3): 163-9.
- <sup>114</sup> Pfurtscheller, G., J. Kalcher, C. H. Neuper, D. Flotzinger, and M. Pregenzer. (1996). "On-line EEG classification during externally-paced hand movements using a neural network classifier." *Electrophysiology and Neurophysiology* 99: 416-25.
- <sup>115</sup> Birch, G. E. (2002). "Initial On-Line Evaluations of the LF-ASD Brain-Computer Interface With Able Bodied and Spinal-Cord Subjects Using Imagined Voluntary Motor Potentials." *IEEE Trans Neural Systems Rehabilitation Engineering* 10(4): 219-24.
- <sup>116</sup> Guger, C., W. Harkam, C. Hertnacs, and G. Pfurtscheller. (2003). "Prosthetic Control by an EEG-based Brain-Computer Interface (BCI)." In Bühler, C. and H. Knops (Eds.), *Assistive Technology on the Threshold of the new Millennium*, from <http://www.gtec.at/research/Publications/aaate.pdf>
- <sup>117</sup> Millan, J. R. (2003). "Adaptive Brain Interfaces." *Communications of the ACM* 46(3): 74-80.
- <sup>118</sup> Millan, J. R. and J. Mourifio. (2003). "Asynchronous BCI and Local Neural Classifiers: An Overview of the Adaptive Brain Interface Project." *IEEE Transactions on Neural Systems and Rehabilitation Engineering (Brain-Computer Interface Technology)* 11(2): 159-61.
- <sup>119</sup> Millan, J. R., F. Renkens, J. Mourifio, and W. Gerstner. (2003). "Non-Invasive Brain-Actuated Control of a Mobile Robot." Proceedings of the 18th Joint International Conference on Artificial Intelligence, Aug 9-15, 2003.
- <sup>120</sup> Carmens, J. M., M. A. Lebedev, R. E. Crist, J. E. O'Doherty, D. M. Santucci, D. F. Dimitrov, P. G. Patil, C. S. Henriques, and M. A. L. Nicolelis. (2003). "Learning to Control a Brain-Machine Interface for Reaching and Grasping by Primates." *Biology* Oct 1(1). From [http://www.plosbiology.org/archive/1545-7885/1/2/pdf/10.1371\\_journal.pbio.0000042-L.pdf](http://www.plosbiology.org/archive/1545-7885/1/2/pdf/10.1371_journal.pbio.0000042-L.pdf)
- <sup>121</sup> Farwell, L. A. and E. Donchin. (1991). "The Truth Will Out: Interrogative Polygraphy ('Lie Detection') With Event-Related Brain Potentials." *Psychophysiology* 28(5): 531-47.
- <sup>122</sup> Johnson, M. M., and J. P. Rosenfeld. (1992). "Oddball-evoked P300-based method of deception detection in the laboratory II. Utilization of non-selective activation of relevant knowledge." *International Journal of Psychophysiology* 12: 289-306.
- <sup>123</sup> Rosenfeld, J. P., J. Ellwanger, and J. Sweet. (1995). "Detecting simulated amnesia with event-related brain potentials." *International Journal of Psychophysiology* 19: 1-11.
- <sup>124</sup> Allen, J. J. B. and W. G. Iacono. (1997). "A Comparison of methods for the analysis of event-related potentials in deception detection." *Psychophysiology* 34: 234-40.
- <sup>125</sup> Lorenz, J., K. Kunze, and B. Bromm. (1998). "Differentiation of conversive sensory loss and malingering by P300 in a modified oddball task." *Neuroreport* 9: 187-91.
- <sup>126</sup> Tardif, H. P., R. J. Barry, and S. J. Johnstone. (2002). "Event-related potentials reveal processing differences in honest vs. malingered memory performance." *International Journal of Psychophysiology* 46: 147-58.
- <sup>127</sup> Brain Fingerprinting Laboratories, Inc. From <http://www.brainwavescience.com/>
- <sup>128</sup> Farwell, L. A. and S. S. Smith. (2001). "Using Brain MERMER Testing to Detect Knowledge Despite Efforts to Conceal." *Journal of Forensic Science* 46(1): 135-46.
- <sup>129</sup> Farwell, L. A. (1992). "Two new twists on the truth detector: brain-wave detection of occupational information." *Psychophysiology* 29(4A): S3.
- <sup>130</sup> —. (1994). Patent #5363858, "Method and apparatus for multifaceted electroencephalographic response analysis." USPTO granted 11/15/94.
- <sup>131</sup> Farwell, L. A. and F. L. Conte. (1995a). Patent #5406956, "Method and apparatus for truth detection." USPTO granted 4/18/95.
- <sup>132</sup> —. (1995b). Patent #5467777 "Method for electroencephalographic information detection" USPTO granted 11/21/95..
- <sup>133</sup> Joseph, J. E. (2001). "Functional Neuroimaging studies of category specificity in object recognition: A critical review and meta-analysis." *Cognitive Affective Behavioral Neuroscience* 1(2): 119-36.
- <sup>134</sup> Mitchell, T. M., R. Hutchinson, M. A. Just, R. S. Niculescu, F. Percira, and X. Wang. (2003). "Classifying Instantaneous Cognitive States from fMRI Data." *American Medical Informatics Association*. From <http://www-2.cs.cmu.edu/~tom/amia2003-final.pdf>



- <sup>135</sup> Spence, S. A., T. F. Farrow, A. E. Herford, I. D. Wilkinson, Y. Zheng, and P. W. Woodruff. (2001). "Behavioral and functional anatomical correlates of deception." *Neuroreport* 12(13): 2849-53.
- <sup>136</sup> Lee, T. M., H. L. Liu, L. H. Tan, C. C. Chan, S. Mahankali, C. M. Feng, J. Hou, P. T. Fox, and J. H. Gao. (2002). "Lie detection by functional magnetic resonance imaging." *Human Brain Mapping* 15(3): 157-64.
- <sup>137</sup> Langleben, D. D., L. Schneder, J. A. Maldjian, R. C. Gur, S. McDonald, J. D. Ragland, C. P. O'Brien, and A. R. Childress. (2002). "Brain activity during simulated deception: an event-related functional magnetic resonance study." *Neuroimage* 15(3): 727-32.
- <sup>138</sup> Ganis, G., S. M. Kosslyn, S. Stose, W. L. Thompson, and D. A. Yurgelun-Todd. (2003). "Neural correlates of different types of deception: an fMRI investigation." *Cerebral Cortex* 13(8): 830-6.
- <sup>139</sup> Bartels, A. and S. Zeki. (2000). "The neural basis of romantic love." *Neuroreport* 11(17): 3829-34.
- <sup>140</sup> Guyatt, D. G. (1996). "Some Aspects of Anti-Personnel Electromagnetic Weapons." International Committee of the Red Cross Symposium: The Medical Profession and the Effects of Weapons, ICRC publication ref. 06681996.
- <sup>141</sup> Brodeur, P. (1977). *The Zapping of America*. New York: Norton.
- <sup>142</sup> Lopez, R. (1993). "Special operations survives Pentagon budget constraints." *Jane's International Defense Review* 26(3): 247-51.
- <sup>143</sup> Malech, R. G. (1976). Patent #3951134, "Apparatus and method for remotely monitoring and altering brain waves." USPTO granted 4/20/76.
- <sup>144</sup> Department of the Army, USAF Scientific Advisory Board. (1996). *New World Vistas: air and space for the 21st century*. 14 vol. (Ancillary Volume).
- <sup>145</sup> Morehouse, D. A. (1996). *Nonlethal Weapons: War without Death*. New York: Praeger Press.
- <sup>146</sup> Dando, M. (1996). *A New Form of Warfare: The Rise of Non-Lethal Weapons*. London, Washington: Brassey's
- <sup>147</sup> Taff, B. E. and K. P. Stoller. (1990). Patent #49400558, "Cryogenic remote sensing physiograph." USPTO granted 7/10/90.
- <sup>148</sup> Stoller, K. P. and B. E. Taff. (1986). "Remote Physiological Sensing: Historical Perspective, Theories and Preliminary Developments." *Medical Instruments* 20(5): 260-5.
- <sup>149</sup> Soviet Union Draft Agreement on the Prohibition of the Development and Manufacture of New Types of Weapons of Mass Destruction and New Systems of Such Weapons. UN Committee on Disarmament, CCD/511/Rev.1, Aug 1977. From <http://www.mindjustice.org/9.htm>
- <sup>150</sup> European Parliament. (1999). "Environment, security, and foreign affairs, A4-0005/99 EP1159, resolutions 23, 24, & 27, January 28, 1999." Limited excerpts from <http://www.raven1.net/europar.htm>
- <sup>151</sup> Wright, S. (2002). "Future Sub-lethal, Incapacitating & Paralyzing Technologies—Their Coming Role in the Mass Production of Torture, Cruel, Inhumane & Degrading Treatment." Presented to The Expert Seminar On Security Equipment & The Prevention of Torture 25–26 October 2002, London, UK and The 16th ISODARCO Winter Course On The Surge in Non-State Violence: Roots Impacts & Countermeasures, 9–16 February 2003, Andalo, Trento, Italy. From <http://www.statewatch.org/news/2002/nov/torture.pdf>
- <sup>152</sup> Begich, N. and J. Manning. (1995). *Angels Don't Play This HAARP: Advances in Telsa Technology*. Anchorage, Alaska: Earthpulse Press.
- <sup>153</sup> Persinger, M. A. (1995). "On the Possibility of Directly Accessing Every Human Brain By Electromagnetic Induction of Fundamental Algorithms," *Perception and Motor Skills* 80: 791-799.
- <sup>154</sup> Brzezinski, Z. (1970). *Between Two Ages: America's Role in the Technetronic Era*. New York: Viking Press.
- <sup>155</sup> Butler, D. (1998). "Advances in neuroscience 'may threaten human rights.'" *Nature* 391: 316.
- <sup>156</sup> Space Preservation Act of 2001. HR 2977 IH, 107th Congress 1st Session, introduced by Hon. Dennis J. Kucinich. From <http://www.raven1.net/govptron.htm>
- <sup>157</sup> "About Weapons." In *Federal Laws of the Russian Federation* from 21.07.98 [1998] No. 117-F3, from 31.07.98 ['98] No. 156-F3, from 17.12.98 ['98] No. 187-F3, from 19.11.99 ['99] No. 194-F3, from 10.04.2000 ['00] No. 52-F3, from 26.07.01 ['01] ISBN 5-86894-393-7. Translation at <http://www.raven1.net/1-02-5.htm>
- <sup>158</sup> Gurov, A.I. (2000). "Resolution: Regarding the draft of the Federal Law 'About the Sumission of addendum to Article 6 of the Federal Law 'About Weapons.'" Federal Assembly—Parliament of the Russian Assembly, Governmental Duma, Committee on Safety, No 28/3 Nov. 30, 2000.

- <sup>159</sup> General Assembly, International Union of Radio Science. (1999). "USRI Resolution on Criminal Activities Using Electromagnetic Tools." *Records of the USRI General Assembly, Toronto*, 25: 178-9. Excerpt from <http://www.metatechcorp.com/EMIthr1/slide2.htm>
- <sup>160</sup> United States Congress. "Microwave irradiation of the U.S. Embassy in Moscow: review of its history and studies to determine whether or not related health defects were experienced by employees assigned in the period 1953-1977." Senate Committee on Commerce, Science, and Transportation. US GOV. DOC. Y 4.C 73/7: IR 7.
- <sup>161</sup> Smith, C. W. and S. Best. (1989). *Electromagnetic Man*. London: J.M. Dent & Sons Ltd.
- <sup>162</sup> Schiefelbein, S. (1979). "The Invisible Threat: The Stifled Story of Electric Waves." *Saturday Review* Sept. 15, 1979: 16-20, p 17.
- <sup>163</sup> Parry, G. (1986). "Doctors investigating claims of Greenham radiation cases: Peace women fear electronic zapping at base." (Manchester) *Guardian*, Mar. 10, 1986, p. 3.
- <sup>164</sup> Ramsay, R. (1990). "ELF: from Mind Control to Mind Wars." *Lobster* 19: 23.
- <sup>165</sup> Munzert, R. (2003). "High-Tech Waffe Mikrowelle - Kriminelle Anwendungen von Mikrowellen." *Aufklärungsarbeit*, Heft 9, April, S. 25-31. English treatment, "Targeting of the Human with Directed Energy Weapons," is from <http://www.grn.es/electropolucio/munzert6902.doc>
- <sup>166</sup> —. Personal communication.
- <sup>167</sup> Gillin, L. M. and L. Gillin. (2003). "Subtle Energies, Intentionality and the Healing of Traumatically Abused Persons." International Conference on Trauma, Attachment and Dissociation, Melbourne, Australia, Sept 12-14, 2003. Also from <http://www.globaltwa.com/subtle.pdf>. Field measurements are "Submission to Coroner: Additional Information on Possible Cause of Death of Ms. Deva Denise Paul on 10th September 2000, Case Reference 2958/00" from <http://www.globaltwa.com/SUBMISSION%20TO%20CORONER.pdf>. CAT scan indication of an implant is from "Mind Control Using Holography and Dissociation a Process Model" at <http://www.globaltwa.com/documents/MindControl.pdf>.
- <sup>168</sup> Lewer, N. and S. Schofield. (1997). *Non-Lethal Weapons: A Fatal Attraction? : Military Strategies and Technologies for 21st-Century Conflict*. London: Zed Books.
- <sup>169</sup> Rodwell, R. (1973). Defense Correspondent Report, "Army tests new riot weapon." *New Scientist* Sept. 20, 1973, p 684.
- <sup>170</sup> McKinney, J. (1992). "Microwave Harassment and Mind Control Experimentation." *Unclassified*, June-July 1992 4(3): 1-20.
- <sup>171</sup> Lamb, C., and C. Swett. (1994). "Department of Defense Directive, Non-Lethal Weapons Policy Draft of 21 July 1994." From <http://www.heart7.net/mcf/mindnet/mn168.htm>, particularly last paragraph of p. 7 onto p. 8.
- <sup>172</sup> McKinney J. Letter to President Clinton, from <http://www.heart7.net/mcf/mckinney.htm>
- <sup>173</sup> Cheryl Welsh Freedom of Information Act request reply for review of Soviet literature, March 19, 1997 at <http://www.raven1.net/nsa1.gif>
- <sup>174</sup> Lopatin, V. N., and V. D. Tsygankov. (1999). *Psychotronic War and the Security of Russia Moscow*. From <http://www.raven1.net/russtran.htm>
- <sup>175</sup> Smith, C. (2003). "On the Need for New Criteria of Diagnosis of Psychosis in the Light of Mind Invasive Technology." *Journal of Psycho-Social Studies* 2(2) #3, 2003.
- <sup>176</sup> American Psychiatric Association DSM-IV Task Force. (2000). *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV-TRTM)*. American Psychiatric Association.
- <sup>177</sup> Flaum, M. and S. K. Schultz. (1996). "The Core Symptoms of Schizophrenia." *Annual Medicine* 28(6): 525-31.
- <sup>178</sup> Isselbacher, K. J., R. D. Adams, E. Brunwald, R. G. Petersdorf, and J. D. Wilson. (1980). *Harrison's Principles of Internal Medicine*, Ninth Ed. New York: McGraw-Hill.
- <sup>179</sup> McMurtrey, J. J. (2003). "Microwave Bioeffect Congruence with Schizophrenia." From <http://www.grn.es/electropolucio/microwav.rtf>