

## **EIR**Feature

# Medical advances expose lies of the euthanasia lobby

by Linda Everett

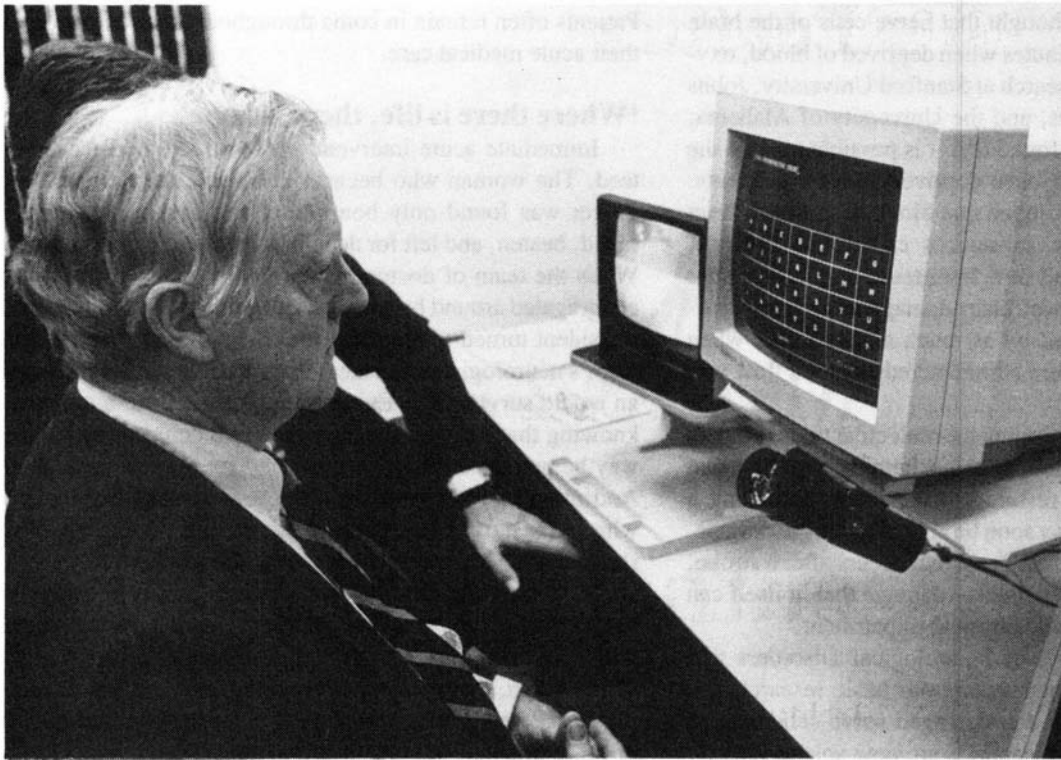
People everywhere are inspired by courageous individuals who overcome extraordinary odds to accomplish incredible feats. For Liz Hartel, once one of Denmark's leading dressage riders, to win an Olympic Silver medal in 1952 for that highly disciplined equestrian event, she had to first learn how to lift her arms, to crawl, and then, to use crutches. Hartel had to first overcome her almost complete paralysis due to polio.

There are families like the Applebys of West Virginia, who lovingly worked round the clock, caring at home for their father and husband, Earl Appleby, Sr. Besides relentless cuts in Medicare and veterans' medical benefits, the Applebys repeatedly battled ruthless hospital physicians who raged that the family had no right to expect hospital care for Earl, who, they said, "should have been dead long ago." But Earl Sr., even in his illness, was an inspiration to his family. The Applebys rose above their immediate crisis, and, seeking to help others in similar battles, started Citizens United Resisting Euthanasia (CURE). His work done, Earl Sr., a beefy, strapping six-footer, died in September 1990, after 10 years in coma—after doctors refused him a critical blood transfusion, even of his three children's blood.

Although Earl Appleby did not come out of his decade-long coma, recent progress in treatment of patients rendered comatose by severe head injury has spectacularly increased the statistics on recovery from coma.

Every 15 seconds, someone in the United States receives a head injury—about 2 million Americans every year. Approximately 100,000 people die from head injuries annually. Some 70,000 to 90,000 of those with moderate to severe injuries will endure life-long debilitating loss of function. Anywhere from 5% to 25% of these injuries are serious enough to cause some period in coma, from which 2,000 may never recover.

Ironically, as this "silent epidemic" of brain injuries and their immense neuropsychological impact spurred a national determination to discover new, effective



*Innovative technologies like the Eyegaze System open up a new world for patients in recovery from coma. Shown is Linwood Holton, chairman of the Center for Innovative Technology in Virginia, testing an Eyegaze computer. (see p. 28)*

Shuart Lewis

therapies, a vocal opposition has erupted against using them. There has emerged an increasingly barbaric medical ethic reflective of the prevailing malthusian economic policy that says, essentially, "Don't waste scarce resources on those who might not make it or who are better off dead." And this, in the face of growing evidence that proper treatment vastly enhances the chance that victims of severe head injuries will eventually emerge from coma.

### What is coma?

Coma is generally described as a prolonged state of unconsciousness and unresponsiveness from which patients cannot be awakened. It is also often referred to as a state of non-awareness. But, as many survivors of coma will tell you, they remember everything, and can reproduce whole discussions about their care which took place by their bedside, while they were comatose. Both the depth of coma and its duration, whether of several minutes, hours, days or months, depends on the degree and type of head injury sustained.

By far, the most frequent type of coma is caused by brain injuries sustained in automobile and motorcycle accidents. In such *closed* head injuries, the damage to the brain is diffuse and widespread, caused by the accelerating skull being stopped suddenly by striking a hard object such as a car dashboard (acceleration-deceleration). In contrast, with a *penetrating* injury, caused, for example, by a bullet wound, a specific part of the brain is destroyed and the resulting

disability usually reflects the specific area damaged.

In closed head injuries, the type a child might sustain after being violently shaken, the soft, plastic brain is easily deformed as it slams against the front of the skull, and rebounding, hits the back skull wall as well (coup-counter coup injury). As one doctor describes it, think of the brain as jello sloshing about the skull if the head is badly shaken. Rotational forces cause shearing of many blood vessels and nerve fibers, resulting in the loss of motor function, sensation, intellect, or memory. When the brain moves over the rough bones at the base of the skull, the nerve fibers going to the brain stem maybe be disrupted, resulting in coma.

The reticular activating system (RAS) within the brain stem serves as the sensory transmission system which activates the cortex, which controls conscious behavior and awareness. The RAS itself is key to our ability to be aroused—it's what gets us up in the morning. So damage to the brainstem or RAS, either from the initial injury or swelling and pressure later, may result in coma in which the patient is neither awake nor aware.

Coma may also occur when the brain is deprived of blood (ischemia), as when the main artery to the brain is blocked as the result of a stroke, causing damage to specific areas of the brain. When the brain is deprived of oxygen (hypoxia), as occurs in a cardiac or respiratory arrest, reaction to anesthesia, drug overdoses, and near drownings, the damage is diffuse and can occur soon thereafter, along with hypoxic coma.

For decades, it was thought that nerve cells of the brain were destroyed within minutes when deprived of blood, oxygen, and glucose. But research at Stanford University, Johns Hopkins Medical Centers, and the University of Alabama, among other places, has found that it is possible to limit the destruction of brain cells once deprived of their nutrients. Drugs are also being developed that block the damage from highly chemically active substances called free radicals, which form once the blood flow resumes to organs that were deprived of it. For instance, heart damage in dogs that suffered strokes was reduced by as much as two-thirds when anti-free-radical drugs were administered as blood flow was restored to the heart.

One researcher is developing the molecular tools to detect brain DNA that is harmed in a biochemical reaction that occurs when oxygen is restored to the brain, following a stroke. This means we may soon be able to block the devastating secondary damage to the brain that occurs after a stroke, or to the heart after a heart attack—damage that in itself can cause death, and mental and physical impairment.

The National Institute of Neurological Disorders and Stroke reports that recent results from basic research and clinical trials demonstrate that damaged nerve cells may be able to function again. Researchers are now able to identify at least 50 neurotransmitter substances upon which nerve function depends. They believe they will be able to identify hundreds of these substances soon, and either enable the body to produce them, or manufacture them artificially in the laboratory.

Pharmacological interventions have had sometimes surprising success in bringing people out of prolonged coma. Valium, which usually depresses a patient's ability to respond, was administered last year, prior to tooth surgery, to a man who had been in coma for eight years. The man awoke, and as long as the Valium was administered, he was conscious; when he was without the drug, he lapsed back into unconsciousness. Finally, his dosage was fixed appropriately, allowing the man to remain conscious.

In other studies, within three days of receiving the drug Sinemet, which is used to relieve the rigidity in Parkinson's patients, a patient in a six-month-long coma (referred to as "persistent vegetative state") recovered. Within four weeks, the patient was discharged to a rehabilitation facility. Five months later, he was able to return to his family, taking up all of his daily activities and personal care.

Whatever the cause of the coma, the focus of medical attention is on preventing further damage through emergency management at specialized traumatic brain injury centers and hospital intensive care units or neurosurgery/neurology units, where stabilizing the patient's neurological status is primary. Complications, such as brain swelling (edema) or bleeding into or around the brain (hematoma), must be monitored, for they can rapidly create hazardous intracranial pressure within the skull that in itself can cause coma or death.

Patients often remain in coma throughout the total period of their acute medical care.

### **'Where there is life, there is hope'**

Immediate acute intervention, however, is not guaranteed. The woman who became known as the Central Park jogger was found only hours after she had been savagely raped, beaten, and left for dead in Manhattan's Central Park. When the team of doctors which finally took over her care congregated around her bed at Metropolitan Hospital Center, a resident turned to Dr. Beatrice C. Engstrand, the medical team's neurologist, and asked if she thought the young woman would survive. Dr. Engstrand deliberated for a moment, knowing that the way she answered him could influence the way he practiced medicine now, and for the rest of his life. And mindful of the morale boost any medical team needs when it must overcome great odds, she said, "Yes, I do think she will survive. Where there is life, there is hope."

Moments later, a colleague, not part of Dr. Engstrand's team, told her, "I overheard your conversation and I disagree with you. That girl doesn't stand a chance. Look at her!" When found, the woman had no pulse, and a crushed windpipe had starved her brain of oxygen for an extended period of time. She had cerebral swelling and a blood clot on each side of her brain. Her doctors testified that "both halves of her brain were wiped out, and were not functioning. She had lost three-quarters of her blood. Her blood pressure was nonexistent. She had received a blow so severe that she suffered a blowout fracture, that is, her eyeball had exploded back through the rear of its socket. Her brain was so severely injured that the normal hills and valleys that appear in everyone's brain were flattened out, obliterated."

Now, the woman was comatose, her life dependent on a ventilator, tubes, and IV lines:

"Face the facts now," Dr. Engstrand's pessimistic colleague demanded. "It will make it easier for you later on. . . . If she survives, she could be a vegetable."

The Central Park jogger was in a coma, almost totally unresponsive, for eight months. However, she not only survived, but after eight months of rehabilitation therapy, returned to work as an investment banker part time. Her doctors attribute her "miraculous survival" to her incredible will to live. More likely, she survived because her doctors gave her a *chance* to live. Had she been entrusted to the care of Dr. Engstrand's colleague—who saw only a future "vegetable"—she might not be alive today.

### **An evil ideology**

It is necessary to grasp the evil behind this ideology as well as the damage it wreaks. The self-avowed Satanist will not hesitate to sacrifice a human being to the evil deity he worships. Similarly, the cost-cutting malthusian will not hesitate to offer up human victims to his deity, which places more value on balanced budgets and so-called cost-effective

medicine than the life of a disabled or comatose patient. The difference is that these thugs are pushing policies whose implementation will eliminate whole layers of the patient population, from the elderly patient with Alzheimer's disease, to a critically ill infant, to keep their usurious economic policy (and the Medicare/Medicaid budget) intact. Therefore, they produce *their* brand of "scientific" research to "prove" their Nazi policy: that some lives are not worth living. Thus, new killer diseases known as "poor quality of life" and "poor prognosis" are rampant in hospitals and nursing homes. Even the terms that describe patients, as well as the focus of diagnostic and research methods that "predict" their "odds" for recovery, are often developed from a totally pessimistic perspective.

The problem is further confused because even dedicated physicians unwittingly promote the euthanasia lobby's agenda by using its terminology and research. Patients are often labeled as "permanently unconscious," "brain dead," or in a "persistent vegetative state"—all labels which serve only to create a bias against treating and even feeding such patients. As one occupational therapist said, "How do they *know* these people are *permanently* unconscious?" Patients in coma are considered "terminally ill," only because some doctors have predetermined that they will not prevent death in coma patients whose ability to clear their throat or lungs is impaired, thus leading to frequent respiratory infections which, if not treated, lead to death.

Every time the death lobby campaigns to broaden euthanasia laws, they say that there are about 10,000 "vegetative" patients in institutions across the United States. But nurses and therapists working with patients in coma and others with developmental disabilities suggest that many of these people have been wrongly diagnosed and, in fact, are severely disabled but could benefit greatly from intensive rehabilitative services.

One example is the case of Christine Busalacchi in Missouri. Christine, 20, has severe brain damage from a 1987 auto accident. Her father wants court permission to starve her because, he says, "The poor kid's gone. What's left is a machine." For years, Christine did little more than turn her head or follow her nurses with her eyes. Then, after receiving just six days of physical therapy, in January 1991, Christine regained the ability to sit up, to swallow and eat pureed foods, and to use special devices to tell nurses when she wants more food or when she wants them to talk to her.

Christine's father's consulting neurologist, Ronald Cranford, stubbornly asserts that she is in a "persistent vegetative state." But, as documented in papers filed with the St. Louis Circuit Court in February, Christine laughs at her nurse's comic behavior and jokes, and smiles at the taste of ice cream.

The euthanasia mob uses the misconception that once individuals begin receiving their daily nutrition via a stomach or naso-gastric tube, they will have that tube the rest of

their lives. Christine Busalacchi proves that this is not true. Occupational therapist Desi Cheney from the Midtown Habilitation Center in St. Louis demonstrated that with the quick and remarkable training of Christine to take food orally, after not having done so for four years.

Midtown's is a wonderful program, which works with those who have severe mental or physical impairments, whether from disease, developmental disabilities, or head injuries. A test called a Modified Barium Swallow is used to examine what, if any, inability or impaired swallowing capability the patient may have. As the individual swallows the liquid, a film of the process is taken and then studied. Unless the impairment is irreversible, therapists like Cheney, armed with an array of methods, including using food of the appropriate texture for that particular individual, can train the person to swallow.

As in the case of Christine, before a person can eat, he or she has to be trained to sit up—no simple task for those who have not used their muscles for years. Building up Christine's sitting tolerance was helped with the use of adaptive equipment built to meet her specific supportive needs. In less than a week after getting this equipment, Christine was sitting up for several hours—despite the fact that she had not had any active therapy for two years.

## Levels of coma

The various levels of coma are described as follows: In "light coma," the patient responds to noxious stimuli by withdrawing; in "deep coma," there is no response to noxious stimuli; in "stupor," an unconscious patient can be awakened briefly but only by vigorous stimulation. The Glasgow Coma Scale (GCS) assesses the depth of coma on a scale of three, totally unresponsive, to 15, fully conscious with voluntary movements, and response to commands.

Unfortunately, research has proven that the GCS is often used and interpreted incorrectly—leading to, no doubt, more than a few patients diagnosed as "hopeless." Also, the GCS is often employed to *predict* a patient's outcome, rather than as an evaluation and a starting point for intervention and improvement. Thus, when someone does recover from deep coma, it is seen as an exception to the rule, or a misdiagnosis.

However, as the editors of a new volume on rehabilitation, *The Coma-Emerging Patient*, write, "One of our former patients, who was comatose for several weeks and who had a GCS score of 3 (the lowest) on admission to the trauma unit, completed undergraduate studies and began law school this fall. An anecdote such as this serves to remind us that we do not have all the answers about predicting the outcome from patients who are comatose. We are inspired by such stories to explore new areas of research and treatment for patients who have experienced traumatic brain injuries" (*Physical Medicine and Rehabilitation*, Vol. 4, Number 3, 1990).

Textbook definitions of coma and post-coma levels and

laws concerning them mean nothing, since they are often superseded by protocols developed by the modern Nazi doctors, who are backed up by new legislation that gives credence to their deadly approach. The medical profession, the courts, and the general public have been taken in by these “experts.”

For instance, the term “persistent vegetative state” or PVS was created by the renowned Dr. Fred Plum, to describe the patient who has emerged from coma to a state of “wakeful unresponsiveness,” in which the patient will “never regain recognizable mental function.” Plum states that PVS patients are “awake but unaware” and have regular sleep/wake cycles, open their eyes, breathe, digest, swallow, and clear their throats on their own. The problem is that Plum, the expert quoted in pro-death court rulings, refuses to save so-called PVS patients who prove to be quite aware. In the case of Nancy Jobes of New Jersey, not only did he refuse to testify for the nursing home which opposed the starvation of Nancy; Plum also asserted that Nancy was “vegetative” before he even examined her. Other neurologists testified to the court that Nancy responded consistently and correctly to their request to lift her leg or arm, or to stick out her tongue.

Neurologists like Plum and Ronald Cranford of the Hennepin County Medical Center in Minneapolis, are constantly held up as experts, in the euthanasia lobby’s efforts to push the “right to die” on the elderly, sick, and disabled.

But consider the case of David Mack. In 1979, Sergeant Mack, a member of the Minneapolis Police Department, was shot several times, stopped breathing, and lapsed into coma. “Sergeant Mack will never regain cognitive, sapient functioning,” announced Ronald Cranford, Mack’s physician, six months later. “He will never be aware of his condition nor resume any degree of meaningful voluntary conscious interaction with his family or friends.”

Cranford, along with three other neurologists and an ethics committee of 18 members, determined Mack’s situation to be hopeless. Cranford declared that Mack’s “prognosis for higher cortical function is virtually zero.”

Twenty-two months later, Mack recovered consciousness and asked for the private duty nurse who had been taking care of him, *by name*—proving that he had been aware of activities around him.

Cranford said bluntly, “The reason they [PVS patients] never recover is that they are never given the opportunity to recover. We decide not to treat their complications and they die. Mack got much better nursing care for a longer period because the case got publicity. If he had been treated like everyone else, I don’t think he would have stood a chance.” Cranford had to admit, however, that “the fact that Mack awoke calls into question the way we assess these cases.”

### **Cranford: pushing the ‘right’ to die**

The “expert” whom the media always seeks out, Cranford has been pivotal in a number of policymaking endeavors

which have instituted euthanasia in its myriad forms as medical protocol. In a much-publicized Society for the Right to Die/Concern for Dying statement (1984), Cranford called it appropriate to starve and dehydrate severely demented patients to death if they reject spoon-feeding. This announcement by 12 “prestigious” experts, half of whom belonged to the Society for the Right to Die, was published in the influential *New England Journal of Medicine*—the largest medical journal in the world—as well as in hosts of nursing and other medical publications.

In 1987, Cranford published what can only be called an outright fascist document, “Consciousness: The Most Critical Moral (Constitutional) Standard For Human Personhood” (*American Journal of Law and Medicine*, Vol. VIII, Nos. 2 & 3, 1987). Written with David Randolph Smith of Vanderbilt University School of Law, Nashville, the paper declares that all categories of “permanently unconscious patients” have no civil and constitutional rights, because they lack consciousness—“the most critical moral, legal, and constitutional standard, not for human life itself, but for human personhood.”

Here is a sampling of Cranford’s pronouncements:

“Once it can be determined that a human being is permanently unconscious, the traditional goals of medicine can no longer be served. . . .

“Medicine cannot promote the best interests of these patients because these patients have no interests in further treatment or discontinuation of treatment, or in continued existence at all. Continued existence and treatment or non-treatment may be of enormous importance to the patient’s loved ones and to society, but not to the patient.”

Cranford then states that, since “anencephalic infants are never conscious, and they are terminally ill and, therefore, could be considered a non-person, should it be homicide to take its vital organs?”

Cranford questions the fundamental value of all human life: “Should homicide laws refer only to persons, rather than all live human beings? An anencephalic infant or a persistent vegetative state patient cannot be harmed by either continued treatment or discontinued treatment. Therefore, how can an anencephalic infant or any permanently unconscious patient, who cannot be morally harmed, be a victim of a homicide?”

Cranford’s bottom line tells it all: Given “society’s limited resources . . . it becomes increasingly difficult to justify financial or other burdens on family, health care providers, and society. . . . Society would be far better served if these resources were focused on preserving health and rehabilitating persons who could experience benefit from medical care. . . .

“Do any constitutional rights exist for a patient who is permanently incapable of experiencing or exercising those rights in any way?” Since a person who is unconscious has no will, thought, expression or consciousness, Cranford argues, “legal rights and liberties have no reference and thus, no meaning. . . .”

Cranford bases his argument that PVS patients are “permanently unconscious” on the official position paper of the American Academy of Neurology, which states: “Persistent vegetative state patients do not have the capacity to experience pain or suffering. Pain and suffering are attributes of consciousness requiring cerebral cortical functioning, and patients who are permanently and completely unconscious cannot experience these symptoms.” The perspective of the academy’s testing is not to intervene to help the patient but to support the academy’s aim to eliminate them.

The academy gives three points as “evidence” that PVS patients are “permanently unconsciousness.”

1) “Clinical experience demonstrates that PVS patients do not demonstrate behavioral indication of awareness of pain.” This is nonsense. The Glasgow Coma Scale and other measures of recovery use behavioral indications like grimacing or withdrawing from pain as indicators of improvement. Were the patients whom the academy studied given aggressive sensory stimulation therapy or were they left in a state of sensory deprivation, which, in itself, is so damaging that doctors now insist the stimulation therapy begin as early as possible, even while the patient is in intensive care?

2) The academy claims that in all PVS patients studied to date, all post-mortem examinations “reveal overwhelming bilateral damage to cerebral hemispheres to a degree incompatible with consciousness or capacity to feel pain.” Even if this were true, the academy has ignored the research that has found some of the pharmacological keys to stemming that damage, as well as studies that indicate that the nervous system can overcome the damage caused by oxygen deprivation by sprouting new nerve fibers and rerouting messages (S. Varon, *Advances in Neurology*, 1988).

Equally ludicrous is the third point the academy makes: “Data utilizing Positron Emission Tomography (PET) indicate that the metabolic rate for glucose is greatly reduced in PVS patients, to a degree incompatible with consciousness.” The only legitimate question here is what is the baseline metabolic rate for life—not consciousness. But, if this were a legitimate question and if a patient fell below the metabolic rate for consciousness, then the focus for a physician must be to find the methods to reverse this state. One study using PET revealed the level of metabolic hypoactivity for PVS patients to be similar in nature to that which occurs during deep anesthesia. So we know the rate is not incompatible with living.

Despite the fact that Cranford was completely wrong when he said there was no hope for recovery for his comatose patient Sergeant Mack, the largest, most influential medical association in the United States, the American Medical Association, cited Cranford as their source in their *amicus curiae* brief in favor of starving Nancy Cruzan, a woman with severe brain damage, whose Missouri family demanded and received court permission to kill her. With no evidence supporting their claim, the AMA has asserted: “Vegetative state

## German bishop denounced Nazi euthanasia policy

*German Catholic Bishop Clemens August Galen gave a sermon at St. Lamberti Church in Münster on Aug. 3, 1941, discussing a Pastoral Letter of July 6, 1941 which had protested the Nazis' deportation and murder of mentally disabled persons. Here are excerpts:*

There are cases where the use of force, even lethal force, is permitted or often even recommended, such as the killing of an armed enemy of the country. No, not because of such reasons do those unhappy sick have to die, but because they have been declared *unfit to live* by the testimony of some commission, because according to this testimony, they belong to the *unproductive* members of the nation. The verdict on them is: They can no longer produce goods, they are like an old machine that doesn't work anymore; they are like an old horse that has turned irreversibly lame; they are like a cow that doesn't give milk any longer. What do they do with such an old machine? It is thrown in the garbage. . . .

If it is permitted to kill the *unproductive* man, then all the invalids who have used up, sacrificed, and lost their strength and their healthy bones in the production process, are on the target list . . . then murder of all *unproductive* beings is permitted as a principle. . . .

Once man is given the right to kill the unproductive fellow-citizen, then the murder of us all when we turn old and weak, and therefore unproductive, is licensed. A secret decree were only required then, to extend the practice used against mentally disabled persons to other *unproductive* persons, and also to those that are irreversibly sick with pneumonia, the paralyzed aged, the invalid aged, the soldiers who were severely wounded in war.

Then no one's life will be safe any longer. Some commission can put on the list of the *unproductive* anyone, who, according to their verdict, has become “unfit to live.” And no police will protect him, no court will investigate his murder and give the murderer the sentence he deserves. Who can have confidence in his medical doctor? Maybe he will report his patient as unproductive and be ordered to kill him.

It is hard to envisage the barbarization of rules of life, the universal mistrust that will be carried into families, if this dreadful doctrine is tolerated, adopted, and carried out.

patients may *react* to sounds, movements, and normally painful stimuli, but they do not *feel* any pain or *sense* anybody or anything” (emphasis in the original).

Pronouncements by the American Academy of Neurology and the AMA on starving so-called PVS patients weigh heavily in courts of law, and have been used for over a decade to broaden patient killing by judicial precedents. The policy statements are handed down and replicated by state medical associations. The broad judicial rulings they influence are, in turn, used by the euthanasia lobby to bamboozle state legislators into supporting bills that declare open season on anyone who can be tagged as “permanently unconscious.”

### The ‘brain death’ fraud

The concept of “brain death,” used to define the legal basis for terminating life, is built on the hoax that death occurs when present-day tests can no longer discern brain *function*. The Uniform Determination of Death Act (UDDA), which is law in many states, declares: “I. An individual who has sustained either cessation of circulatory and respiratory functions, or II. irreversible cessation of all functions of the entire brain, including the brainstem, is dead. A determination of death must be made in accordance with accepted medical standards.”

The main fraud involved here is simple: Cessation of brain function is *not* the same as when an individual’s brain has been grossly damaged or destroyed. The accusation that hospitals are wastefully “ventilating corpses” is pure nonsense. Swedish researchers have proven that when an individual’s brain is truly destroyed, regardless of technological assists in the way of ventilators and such, the individual will die within a matter of days. A non-functioning brain cannot be assumed to be destroyed.

Studies using the strictest criteria for determining brain death have proven that the concept is quite wrong. The National Institutes of Health ran a two-year study attempting to prove that the cessation of brain function coincided with brain destruction, referred to as “respirator brain.” It included 503 patients in unresponsive coma and apnea. The results were called by Dr. G.F. Molinari, an organizer of the study, “one of the major and most disturbing findings.” Autopsies performed on half of the patients who died during the study found that, in 60% of the cases, destruction throughout the brain could not be found. Some 43% of the brains of patients who met the strictest criteria for determining brain death—the Harvard criteria, *did not have* such brain destruction. And, in 10% of the cases, no abnormality of the brain could be found. Yet, the move to massively revamp state laws and medical protocols went forward.

There are thousands of brain death “mistakes.” A physician from a Jamaica, New York hospital removed a respirator from his “brain dead” patient as is routinely done after 48 hours. He then went to lunch, expecting his patient soon to be “gone.” She fooled him though. On his return, he found

his “brain dead” patient enjoying lunch.

Many who have seen their sons or daughters through coma and the arduous rehabilitation process have proven such experts wrong. There’s Harold Cybulski, 76, who, after doctors declared that he had suffered “irreparable brain damage” from a heart operation and was “brain dead” for 10 weeks, was taken off a life-support system and given Last Rites. When his two-year-old grandson yelled from the door to his hospital room, “Hey, Grandpa!” Grandpa sat up in bed and stretched out his arms to his grandchild.

Literature on coma and traumatic brain injury warns you that things like this don’t happen—except maybe in the movies. This is generally true, since most folks recovering from any lengthy coma must relearn how to walk, talk, feed and dress themselves, and many need enormous psychological supports to get through it all. Nevertheless, within two weeks, Cybulski and his wife celebrated their 52nd wedding anniversary. A month later, he bought a new car and was out visiting his relatives.

### Fighting for recovery

While each patient’s injury, therapy, and response is different, the almost universal method used to revive people in coma and prolonged coma revolves around a program of structured stimulation of the senses of sight (visual), hearing (auditory), touch (tactile), taste (gustatory), and smell (olfactory). The theory behind intense multisensory stimulation is the stimulation by sensory bombardment of the reticular activating system (RAS) of the brain, which is primarily responsible for arousal and wakefulness. As one doctor describes it, whether you’re awake or asleep, the RAS is continually monitoring the outside world, ready to sound the alert, whether the stimulus be a crying child or a ringing bell. If functioning, it normally responds to all sensory stimulation.

It is theorized that repetitive stimulation trains previously unused parts of the brain, and brings the patient to a higher level of awareness and functioning. Coma care programs were almost nonexistent a decade ago; now they are proliferating throughout the United States. Rehabilitation hospitals and skilled nursing facilities often employ some form of sensory stimulation as a way to gauge a patient’s progress, while providing the family a structured system within which they can participate in working with the patient.

It is now known that there is a major impact on electrical brain activity of deep coma patients when active therapeutic sensory stimulation encouraging patient motor response is carried out in neurological intensive care units for at least three consecutive days (P. Weber, *Archives of Physical Medical Rehabilitation*, August 1984). It is this *active*, direct impact on the cortical activity of acute comatose patients, as opposed to the *passive* stimulation a patient receives during family visits or bathing, that can actively assist their neurological recovery.

The nurses, doctors, physical therapists, and other health

team members who work in the coma recovery program are treating patients with frequent intense multisensory stimulation, vigorous exercise and all the measures required to prevent complications of immobility and unconsciousness.

### **Innovative approaches**

One unique program, described by R. Grass and S. Young (*Rehabilitation Nursing*, May-June, 1987), is the International Coma Recovery Institute in New York. All the patients accepted there had a prognosis of "hopeless." The institute first evaluated patients, attempting to wean them off of drugs such as Valium, Dilantin, and phenobarbital, which are often given in such high doses that they contribute to the patient's lack of awareness. Instead, low doses of drugs that do not sedate the patient are used to control muscle spasticity and rigidity.

Correcting the patient's nutritional intake is also critical to his healing. Many patients were found to be given what can only be called starvation diets at their previous hospitals. It can take weeks of slowly increasing the increments of nutrition until an appropriate level is reached, at which the patient is not losing weight and the body is not cannibalizing itself.

The institute trains each family to carry out the 45-minute cycle of stimulation exercises that they later perform with the patient in the home. Friends, volunteers, and the family give eleven 45-minute sessions every day. For example, if the patient's eyes are always closed or there is a lack of a blink reflex, visual stimulation is done by shining a 650-watt light on the eyes (it has no harmful effects on the retina), one second on, one second off. This is repeated several times.

Some 99% of the patients in this program were diagnosed by experts as "irreversibly comatose," and "permanently unconscious." They were all "brain dead," with flat brain waves. Interviews with some of the families working with the institute have revealed that spouses were told they "would be better off without their loved one" or "nobody wants to live like a vegetable, let him die," or "stop wasting your time, your wife will never wake up, let her die, go on with your life." Parents were told it would be better if their child died. Yet, there was a 92% recovery rate for those in coma for up to two years! And 35 percent of these returned to a completely functioning state.

The family involvement here is critical. Often when the patient first responds it is usually to someone in his family. The families themselves also need tremendous support throughout the long process.

Research indicates that if sensory stimulation is provided early enough and intensively enough, it can save the lives of people in coma, as well as enhance both the percentage and rate of recovery from coma.

Drs. E.R. LeWinn and Dimancescu report (*Lancet*, 1978) on their pilot study of 16 comatose patients, resulting from head trauma, hypoxia, or brain tumor, who had initial

Glasgow Coma Scale scores of 3, 4, or 5. Environmental enrichment programs were begun 12 to 14 hours after the patients were admitted to the hospital, except in two postoperative cases where it was initiated 10 to 14 days after surgery. Follow-up of the 16 patients, ages ranging from four to 80 years, occurred after several days to 10 months. There were no deaths and all 16 patients "fully recovered" from coma. Twelve patients regained functional independence; eight of these returned to their pre-coma state. The others were said to be progressing. In the comparison group of 14 patients with similar severe coma levels who did not receive the stimulation program, 11 patients died.

In a more recent study (*Brain Injury*, 1990), Mitchell et al. evaluated the effectiveness of coma arousal procedures among two groups of 12 patients each, who were matched for age (17 to 42 years), sex, type, location and severity of brain injury, surgery, and GCS score at the time of hospitalization. Once the patients were medically stabilized, stimulation was started within four to 12 days of injury. Stimulation of all the senses was provided for one or two one-hour sessions daily to the experimental group. The control group received none. Mitchell et al. determined that the coma had ended once the patient could respond to commands and showed purposeful movements. The results showed that even with this most minimal of stimulation protocol, the total coma duration for the experimental group was significantly shorter than for the control group, which suggests that stimulation should be a standard part of the treatment of severe brain injuries to facilitate rapid recovery.

Also significant is a pilot study by Rader, Alston, and Ellis (*Brain Injury*, 1989) of six "vegetative" patients at an average of 15.5 months post-injury. It found that warm, loud, affectively charged verbal encouragement of the patients during stimulation sessions elicited higher levels of eye openings and motor responses than did quiet interactions. Placing patients in an upright position with supports to maintain the head and trunk also facilitated response to the stimulation.

### **The 'Helping Hands' program**

Many individuals who emerge from coma sustain varying levels of paralysis from the shoulders down as the result of injuries to their spinal cord, in addition to head trauma. To live independently, people with these injuries require anywhere from four to six hours of help per day from a paid personal care attendant, or family member who helps them with daily activities like bathing, dressing, bowel and bladder routines, and transfer in and out of a wheelchair. In between, there are countless small manual tasks to be done, from turning the pages of a book to getting lunch. Those who could not afford a full-time attendant, had to simply go without, until psychologist Mary Jo Willard created an ingenious non-profit program called "Helping Hands: Simian Aides For the Disabled."

For over a decade, the Boston-based program has suc-



cessfully trained capuchins (also known as organ-grinder monkeys) to assist people who are quadriplegic, giving them increased self-reliance. The monkeys follow verbal commands and visual cues from laser-pointers, to open or close doors, change books or magazines for reading, feed their owner, serve food from a microwave, clean up afterwards, retrieve objects, and more. These "formidably bright" animals, that learn new tasks in a single half-hour session, have a performance reliability rate close to 100%. They live 30 years, and are toilet-trained, clean, affectionate, loyal, and highly entertaining.

One of the first participants in the program was Sue Strong, who became quadriplegic after an auto accident 15 years ago. Strong said that having her capuchin, Henri or Henrietta, has completely changed her life. A simple thing like getting a meal could be delayed hours if an attendant arrived late. For Strong, the mouthstick is the primary tool for dialing a telephone, turning pages, and just about everything. When Strong drops it, she says, "Mouth, Henri. Mouth!" The capuchin searches until it finds the tool and gently returns

it to Strong's mouth. The monkeys are rewarded after each completed task with a bit of fruit juice.

When Henri is dispatched to the kitchen for a sandwich, she returns and positions it in the holder to the feeding tray. When she takes a small bite for herself, she instantly realizes the error of her ways and clammers to her cage, almost before her mistress gives the command. When Strong says disapprovingly, "Door, Henri," the capuchin yanks the cage door closed, and looks out, awaiting her reprieve.

Strong gives in, "Oh, all right." The capuchin is liberated. Then Henri settles at her mistress's ankles, craning her neck to gaze up at Strong, the very picture of contrition. Strong, laughs, says, "Look at that, will you. A face only a mother could love."

There are a broad range of technologies out there, addressed to almost all levels of the patient's needs. For instance, simple electronic switches, like light switches, that usually sell for under a dollar can be adapted for use by any individual. As one carpenter explained, "whatever the person can move, if it is only one finger, we can hook something up

## The Eyegaze System: a window on the world

*The Eyegaze System for the physically disabled was developed by Dixson Cleveland and Joe Lahoud of LC Technologies, Inc., in Fairfax, Virginia. Nancy Cleveland, R.N., B.S.N., is the wife of Dixson Cleveland and is medical and technical coordinator for LC Technologies. In an interview with Marianna Wertz, excerpted here, she presented some case histories of patients who have been helped by the system:*

There's a minister in Connecticut who's 30, and who's locked in. His church bought him this computer; they raised the funds in 24 hours. His goal is to write sermons that somebody else can read.

There's an 11-year-old kid in Florida who's doing his homework on Eyegaze. He was hit by a car and broke his neck so high up that he's on a respirator and he can't speak. He goes to school on a respirator with an attendant, comes home and does his homework on Eyegaze. He calls his friend down the block, using his eyes to dial the telephone. . . .

There is a woman in her mid-20s, who has had cerebral palsy. She was in a wonderful residential school program until age 22, at which point the state that she lived in said,

"You're past the age, you have to leave."

She was in this program, though it was designed for developmentally disabled/mentally retarded people. She wasn't retarded. She couldn't talk, she had spasticity, so she couldn't control her movements, but the staff at this place recognized that she was a smart young woman, and she had spent years being involved socially with the staff, going shopping, going to the movies, being involved with them, rather than with her peers in the program who were retarded. . . .

She then ended up at home, with a loving mother but losing all her support. She became suicidal and decided that she wanted to die. She had nothing to look forward to in her life, and she stopped eating.

Her mother just told me this story a couple of weeks ago, when we were delivering her computer to her. The doctors told the mother that if she lost 25% of her body weight, they'd never be able to save her, because she was tiny to begin with. She weighs maybe 60 pounds. She was a pound away from that irreversible weight loss when her family tracked us down, found out about Eyegaze, and drove hundreds of miles to a conference where we were exhibiting and sat her in front of the computer, and she ran it. They vowed they were going to get her the computer somehow, and it took two years to do it. They did fundraising and applied to their state and got some funding through a state agency.

Once she ran the computer and knew that she was going to get it, she started eating again. It's taken her two years to regain the weight that she lost.

to help them tell us what they want. These simple devices go a long way to allow a person some control over his environment that they are motivated to control. A single switch hooked to a \$35 tape recorder can activate a short taped message that says, "I'm thirsty" or "move me" or whatever is most useful. Conley, with his hand squeezing ability could have been "talking" all these years. Several tape players can be used for different kinds of needs.

One therapist rigged an arrangement with a switch that allows a young child in coma who is only able to move her head randomly up and down, to hear her parents reading her favorite book on a cassette tape when her head tilts forward. These emotionally motivating stimuli often work better than the traditional stimuli used by therapists. Simple word boards with the alphabet and a few simple words like "yes," "no" or rebus boards with pictures that symbolize yes and no can augment a patient's communication capabilities. If the person has only gross movement of their arm or leg, toggle switches or in an older patient, joy-sticks, work as well.

### The Eyegaze System

Another innovative approach, the Eyegaze System, is the opening of a whole new world for patients in recovery from coma. For individuals with good control of at least one eye, Eyegaze allows severely disabled individuals to do with their eyes what most of us do with our hands. Simply by looking at control keys displayed on a computer monitor screen, the user can perform a broad variety of functions including speech synthesis, environmental control, like turning on lights, appliances and televisions, playing games, typing, as well as operating a telephone. It is also an invaluable diagnostic tool for those who are both physically impaired and non-verbal.

The Eyegaze System, produced by LC Technologies, Inc. in Fairfax, Virginia, consists of monitors, cameras, computer, and control devices, all designed for table-top mounting. When the user sits before the monitor, a video camera located below the Control Monitor observes one of the user's eyes. A low-powered infrared light mounted in the center of the camera lens illuminates the eye and provides a bright image of the pupil and a bright spot reflecting off the cornea. The image of the eye is displayed on a second monitor called the Eye Monitor.

Sophisticated image-processing software continually computes where on the Control Monitor screen the user is looking. The system predicts the gaze point with an accuracy of better than a quarter of an inch. As a form of feedback to the user, the Eyegaze System displays a cursor on the screen at the user's gaze point. To "press" a key, the user simply looks at the key for a specified time called the "gaze duration," the key flashes to give him feedback that he has pressed it. The gaze duration can be adjusted to the speed of the user, but the typical gaze duration time ranges between two-thirds and one-quarter of a second.

## 'Death on demand' is still homicide

by Jutta Dinkermann

Europe, like the United States, is witnessing the resurgence of a movement which was last openly championed and practiced by the Nazis—euthanasia. Today, the policy outlook which says that there is "life not worth living," is being advocated not just by lunatic fringe groups, but by some of the governing institutions of Europe.

On April 25, the European Parliament's Committee for Environment, Public Health, and Consumer Protection passed a "Motion for Resolution on Companionship with the Dying Person" by a vote of 16-11, with three abstentions. With this vote, the committee demanded a policy of active euthanasia. The president of the European Parliament was mandated to forward this resolution to the European Commission and the European Council, as a policy recommendation for member states.

Although the European Parliament rejected the resolution this time, another similar motion is being prepared for consideration in early November, and the Law Commission will also propose its version.

The demand for active euthanasia is explicitly raised in Point Eight of the motion: "The European Parliament is of the opinion that, in cases where there is a lack of a curative therapy and once correct psychological and medical treatment have failed, and in each case where a fully conscious patient expressly and relentlessly demands that his existence, which has lost any dignity for him, be put to an end, and if a committee of physicians called for this purpose established that it is impossible to apply new, specific treatment, this demand must be acceded to, without respect for human life being violated in this way."

And Part B reads: "Human life consists in dignity, and if a person after a long illness, against which he has courageously fought, requests of the physician to put an end to an existence which has lost all dignity for him, and if a physician decided, according to his best knowledge and conscience, to help this person and to lighten his last moments, by enabling him to peacefully fall asleep forever, then this medical and human assistance (which some call euthanasia) signifies respect for life."

Statements condemning this motion were circulated to European Parliamentarians by the Club of Life and by Dr. Georg Götz, deputy chairman of the European Association for Physicians' Action (an organization which is also very active in the fight against abortion). Dr. Götz is a general