Half a century ago, Orson Welles panicked his radio audience by reporting that Martians had invaded New Jersey on the fictional program War of the Worlds. On December 23, 1990, CBS-TV's *60 Minutes* achieved a similar effect by announcing that toxins have invaded the American mouth. There was, however, a big difference. Welles' broadcast was intended to be entertaining. The *60 Minutes* broadcast, narrated by veteran reporter Morley Safer, was intended to alarm to persuade its audience that the mercury in dental fillings is poison. It was one of the most irresponsible reports on a health topic ever broadcast on network television.

Mercury is a component of the amalgam used for "silver" fillings which also contain silver, tin, copper, and zinc. When mixed, these elements bond to form a strong, stable substance that does not contain metallic mercury. Very sensitive instruments can detect billionths of a gram of mercury vapor in a person's mouth with amalgam fillings. However, there is no evidence that this vapor is absorbed into the body or causes any adverse health effect.

**Dubious Claims**

Despite these facts, a small but vocal group of dentists, physicians and other holistic advocates claims that mercury-amalgam fillings are a health hazard and should be replaced. The leading advocate of such advice is Hal Huggins, D.D.S., of Colorado Springs, Colorado. Dr. Huggins graduated from the University of Nebraska School of Dentistry in 1962 and received a master of science degree from the University of Colorado in 1989.

Huggins has held many seminars for dentists concerning his approach to "balancing body chemistry" through nutrition. Basically he suggests that many diseases and conditions can be prevented or cured through dietary changes alone. In 1975 the American Dental Association's Council on Dental Research concluded that there was little or no evidence to support Huggins' dietary claims.

In 1985 Huggins and his wife Sharon published a book, *It's All in Your Head*, which combines the discredited theories of balancing body chemistry with the assertion that mercury in amalgam fillings is toxic. The book states that he became interested in this subject in 1973 when a dentist from Argentina told him that leukemia, Hodgkin's disease, bowel disorders and other diseases had been cured by removing amalgam fillings. Huggins reports that his early results with the removal procedure were "sporadic and unpredictable. At best only ten percent of the patients responded." Later he claimed that some fillings have "negative electrical current" and that removing fillings in the proper sequence and supplementing with nutrients would improve success rates. Since then he has crusaded against the use of amalgam and limited his practice to advise on these matters.

An information packet distributed during 1985 by Huggins' Toxic Element Research Foundation
claims that, "Everyone reacts to the presence of mercury...Some 80% of the population will experience only a slight change of their immune system which will result in three colds per winter instead of only two, or an elevation of 2000-3000 count in their white blood cells. Those sensitive 20% might experience a drastic drop in immunocompetence to the point of autoimmune disease, or an elevation of white blood cells of 30,000 or more."

Huggins claims that "sensitive" individuals can develop emotional problems (depression, anxiety, irritability), neurological disorders (facial twitches, muscle spasms, epilepsy, multiple sclerosis), cardiovascular problems (unexplained rapid heart rate, unidentified chest pains), collagen diseases (arthritis, scleroderma, lupus erythematosus), allergies, digestive problems (ulcers, regional ileitis), and immunologic disorders (which he claims include leukemia, Hodgkin's disease and mononucleosis). He recommends that mercury fillings be replaced with other materials and that vitamin supplements be taken to prevent complications during amalgam removal.

**Dubious Tests**

Anti-amalgam dentists typically use a mercury vapor analyzer to convince patients that "detoxification" is necessary. Before using the device, the dentist asks the patient to chew vigorously for ten minutes, which may cause tiny amounts of mercury to be generated from fillings. Because this exposure lasts for just a few seconds and most of the mercury will be exhaled rather than absorbed by the body, the machines give falsely high readings, which the anti-amalgamists interpret as dangerous. The most commonly used device is an industrial device that multiplies the amount of mercury it detects in a small sample of air by a factor of 8,000. This gives a reading for a cubic meter, a volume far larger than the human mouth.

Anti-amalgamists may also use a voltmeter to measure supposed differences in the electrical conductivity of the teeth. One such device the "Amalgameter" was sold by Huggins during the early 1980s. In 1985 the FDA concluded that the device was misbranded because accompanying literature alleged that it could be used to recommend the removal of amalgam fillings. In a regulatory letter, the agency said "there is no scientific basis for the removal of dental amalgams for the purpose of replacing them with other materials as described in your leaflet...We consider your device as being directly associated with...a process that may have adverse health consequences when used for the purposes for which it was intended." The FDA action may have restricted the marketing of the Amalgameter. However, it has had little or no effect on the misuse of such devices in dental offices.

The proper way to determine mercury exposure is to measure blood or urine levels, which indicate how much the body has absorbed. Scientific testing has shown that the amount of mercury absorbed from fillings is insignificant and that people with fillings excrete no more mercury than those without them.

**Dubious Ethics**

There is overwhelming evidence that mercury-amalgam fillings are safe. Since 1905, although billions have been used successfully, fewer than fifty cases of allergy to the amalgam have been reported in the scientific literature. In 1986, the American Dental Association's Council on Ethics, Bylaws, and Judicial Affairs concluded that "removal of amalgam restorations for the alleged
purpose of removing toxic substances from the body, when such treatment is performed at the recommendation of the dentist, presents a question of fraud or quackery in all but an exceedingly limited spectrum of cases." The ruling was triggered in part by the case of an Iowa dentist who had extracted all 28 teeth of a patient with multiple sclerosis. The dentist received a 9-month license suspension followed by 51 months of probation.

Removing good fillings is not merely a waste of money. In some cases, it results in tooth loss. In 1985 a $100,000 settlement was awarded to a 55-year-old California woman whose dentist removed her amalgam fillings. The dentist claimed that the fillings were a "liability" to her large intestine. In removing the fillings from five teeth, the dentist caused severe nerve damage necessitating root canal therapy for two teeth and extraction of two others.

**Dubious Research**

In 1990, researchers at the University of Calgary in Alberta, Canada, described an experiment in which they placed 12 amalgam fillings in each of six sheep. Within two months, the researchers claimed, the sheep lost much of their kidney function while a control group (two sheep) had lost none. Newsweek, which accepted the report at face value, described it as the first evidence that the amount of mercury escaping from fillings and being deposited in body tissues is harmful. (Newsweek's article was coauthored by very same writer who had panned fluoridation earlier in the year.) However, experts in biochemistry, toxicology, dentistry, and veterinary medicine consider the sheep study meaningless.

One of these experts is Robert S. Baratz, D.D.S., Ph.D., M.D., an ACSH advisor and expert on dental materials. In a letter mailed to 60 Minutes two weeks before CBS aired the program, he noted:

* The Canadian researchers prepared their amalgam with a method that has been obsolete for more than 40 years. The resultant amalgam contained excess mercury and was softer and therefore more easily worn by chewing, especially in a cud-chewing animal such as a sheep.
* The amalgams were placed in opposing teeth, so they would grind against each other. This enhanced the already enhanced rate of release of materials.
* Because rubber dams were not used when the fillings were installed, scrap amalgam was free to enter the sheep's mouth and be swallowed.
* The methods used to detect and calculate the amount of mercury absorbed were not valid.
* Although the researchers claimed that body mercury levels rose during the experiment, they had not measured the levels that were present initially. The data actually showed that the animals swallowed a lot of free mercury during the placement of the fillings.
* Their claim of kidney toxicity was based on urinary findings that show just the opposite of what is known to occur in mercury poisoning in humans.

Dr. Baratz and at least one other knowledgeable critic also spoke by telephone to 60 Minutes' producer before the program was aired. But they encountered a stone wall.

**Toxic Television**

The 60 Minutes segment on dental amalgam, which was considerably longer than most of its reports, was called "Poison In Your Mouth." It interspersed remarks from an American Dental
Association representative with statements by three amalgam critics and four patients who claimed to have made a remarkable recovery from arthritis or multiple sclerosis after their amalgam fillings were removed. The most powerful segment featured a woman who said that her symptoms of multiple sclerosis had disappeared overnight. The fact that arthritis and multiple sclerosis normally have ups and downs was not mentioned during the program. Neither was the fact that removal of fillings temporarily raises body mercury load, so that no "overnight cure" could possibly be caused by mercury removal.

The American Dental Association's representative was interviewed by Morley Safer at ADA headquarters. It was obvious from Safer's questions that the program would be a hatchet job. After American Dental News published a lengthy article about the interview, a sharp-eyed dentist noted that an accompanying photograph showed Safer smoking a cigarette. Yes, the editor responded even though ADA headquarters has an obvious no-smoking policy.

After the program was aired, this author wrote Don Hewitt, executive producer of 60 Minutes, explaining why "the overnight cure" was a hoax. My letter included two questions:

1. If Morley Safer had mercury-amalgam fillings, did he follow his own dumb advice and have them removed?
2. How come you have never aired a program on the most serious danger of them all: cigarette smoking? Is it a policy of your program to attack only nonexistent health risks?

CBS's director of audience services replied: "Our aim was not to condemn dentists or their use of silver amalgam fillings...Rather, the 60 Minutes staff made every effort to ensure that our report was balanced in presenting arguments from both sides of the issue."

I would like to tell you what I wrote back, but Priorities wouldn't print it.

Not surprisingly, the broadcast triggered an avalanche of queries to dentists and induced many viewers to seek replacement of their fillings with other materials. Consumer Reports, American Health, Prevention, and many health newsletters reassured their readers that amalgam is safe. But, I fear, the program's damage cannot be undone. In August, Consumer Reports published the following letter:

"My mother, who was diagnosed with Lou Gehrig's disease more than two years ago, had her mercury fillings removed immediately after the show aired. After she had spent $10,000 and endured more than 18 hours of dental work so painful she once fainted in the waiting room, her condition did not improve. The pain was outweighed only by the monumental disappointment she and the whole family experienced as we lived through one false hope."

Last year, Consumer Reports Books published Health Schemes, Scams, and Frauds, a book on quackery that I helped to write. The book concluded: "In (Consumers Union) CU's view, dentists who purport to treat health problems by ripping out fillings are putting their own economic interests ahead of their patients' welfare. The false diagnosis of mercury-amalgam toxicity has such harmful potential and shows such poor judgment on the part of the practitioner that CU believes dentists who engage in this practice should have their license revoked." So in my opinion should Morley Safer.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 27 books and is also chairman of the National Council Against Health Fraud's Task Force on
Victim Redress. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

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