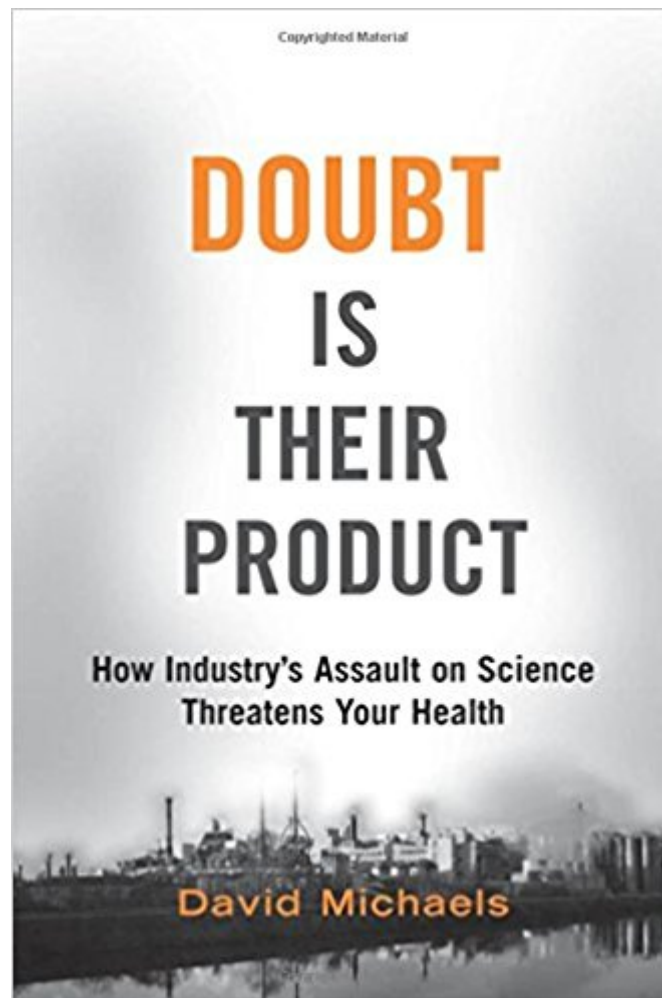




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# Doubt Is Their Product: How Industry's Assault On Science Threatens Your Health



## Synopsis

"Doubt is our product," a cigarette executive once observed, "since it is the best means of competing with the 'body of fact' that exists in the minds of the general public. It is also the means of establishing a controversy." In this eye-opening expose, David Michaels reveals how the tobacco industry's duplicitous tactics spawned a multimillion dollar industry that is dismantling public health safeguards. Product defense consultants, he argues, have increasingly skewed the scientific literature, manufactured and magnified scientific uncertainty, and influenced policy decisions to the advantage of polluters and the manufacturers of dangerous products. To keep the public confused about the hazards posed by global warming, second-hand smoke, asbestos, lead, plastics, and many other toxic materials, industry executives have hired unscrupulous scientists and lobbyists to dispute scientific evidence about health risks. In doing so, they have not only delayed action on specific hazards, but they have constructed barriers to make it harder for lawmakers, government agencies, and courts to respond to future threats. The Orwellian strategy of dismissing research conducted by the scientific community as "junk science" and elevating science conducted by product defense specialists to "sound science" status also creates confusion about the very nature of scientific inquiry and undermines the public's confidence in science's ability to address public health and environmental concerns. Such reckless practices have long existed, but Michaels argues that the Bush administration deepened the dysfunction by virtually handing over regulatory agencies to the very corporate powers whose products and behavior they are charged with overseeing. In *Doubt Is Their Product* Michaels proves, beyond a doubt, that our regulatory system has been broken. He offers concrete, workable suggestions for how it can be restored by taking the politics out of science and ensuring that concern for public safety, rather than private profits, guides our regulatory policy. Named one of the best Sci-Tech books of 2008 by Library Journal!

## Book Information

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## Customer Reviews

"In Doubt Is Their Product, David Michaels gives a lively and convincing history of how clever public relations has blocked one public health protection after another. The techniques first used to reassure us about tobacco were adapted to reassure us about asbestos, lead, vinyl chloride-and risks to nuclear facilities workers, where Dr. Michaels' experience as the relevant Assistant Secretary of Energy gave him an inside view. And if you're worried about climate change, keep worrying, because the same program is underway there."--Donald Kennedy, Editor-in-Chief, Science

"We live in an age of unprecedented disinformation, misinformation, and outright lying by those in power. This important book shows who profits by misleading the public-and who ultimately pays with their health."--Eric Schlosser, author of Fast Food Nation

"This well-researched book by someone who truly knows the system is a must read for anyone who wants to understand the cozy relationship between industry and regulatory agencies on matters that affect the health and safety of our families and neighbors. The cited examples illustrate how, with the help of irresponsible members of Congress and other public officials, corporate greed can trump any sense of ethics, morality, and human compassion."--Neal Lane, former Science Advisor to President Bill Clinton and former Director of the National Science Foundation

"This brave, shocking book exposes the abuse of science by government and industry in ways that endanger the workplace, the home, the water supply, the air quality-in fact, our planet as a whole. David Michaels speaks authoritatively from his firsthand experience as a champion of occupational safety and health. He tells a terrific story."--Dava Sobel, author of Longitude and Galileo's Daughter

"In Doubt Is Their Product, David Michaels calls out the corporations you'll recognize them that bankroll lobbyists and unethical scientists to attack factual evidence that their products, such as asbestos, lead, and tobacco, are deadly."--Vanity Fair, Green Issue, May 2008

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"David Michaels has written a powerful, thorough indictment of the way big business has ignored, suppressed or distorted vital scientific evidence to the detriment of the public's health."--Nature

From Newsweek, 5/12/08 \_ That science can be bought is hardly news to

anyone who knows about tobacco "scientists." But how pervasive, effective and stealthy this science-for-hire is-as masterfully documented by David Michaels of George Washington University in his new book, "Doubt Is Their Product: How Industry's Assault on Science Threatens Your Health"-will shock anyone who still believes that "science" and "integrity" are soulmates. In studies of how toxic chemicals affect human health, Michaels told me, "It's quite easy to take a positive result [showing harmful effects] and turn it falsely negative. This epidemiological alchemy is used widely." -Sharon Begley

From Nature, 6/12/08 \_ David Michaels has written a powerful, thorough indictment of the way big business has ignored, suppressed or distorted vital scientific evidence to the detriment of the public's health. Doubt Is Their Product catalogues numerous corporate misdemeanours, especially in the United States, from the criminal neglect of the dangerous nature of asbestos and the lies told by the tobacco industry, to the suppression of adverse findings of deaths caused by the anti-inflammatory drug Vioxx and the increased risk of suicide among teenagers taking selective serotonin re-uptake inhibitors for depression. The book concludes with a list of prescriptions for securing better regulation and greater protection for the public, mainly through increased public disclosure of vested interests. -Dick Taverne

"The book is a shocking portrayal of the tactics used by corporate America to delay public health and environmental regulation of their products for the sake of profit...It is a must read for anyone interested in public health and environmental protection."--Chemical & Engineering News"...Doubt Is Their Product reminds one of deeper risks that threaten scientific fields and democratic deliberation. ...The scientific community and the public need to be on guard against such abuses; Michaels's history of these events sounds an alert that must not be ignored."--Durrants

One of Library Journal's top 10 sci-tech books of 2008! Received an Honorable Mention in the Society for Environmental Journalism's 2009 Awards for Reporting on the Environment for the category Rachel Carson Environment Book Award.

David Michaels is a scientist, former government regulator, and the current appointed head of OSHA. During the Clinton Administration, he served as Assistant Secretary of Energy for Environment, Safety and Health, responsible for protecting the health and safety of the workers, neighboring communities, and the environment surrounding the nation's nuclear weapons factories. He currently directs the Project on Scientific Knowledge and Public Policy at The George Washington University School of Public Health and Health Services. In 2006, he received the American Association for the Advancement of Science's Scientific Freedom and Responsibility Award for his work on behalf of nuclear weapons workers and for advocacy for scientific integrity.

With over-all responsibility for making the atomic bomb during World War II, General Leslie R. Groves, head of the U.S. Army Manhattan Project, explained that in 1943, "The most urgent problem was to determine the toxicity of the materials we were using: primarily, uranium and plutonium compounds; the related heavy elements, such as radium, polonium and thorium; and certain accessory process materials, such as fluorine and beryllium. This required the study of the manner in which the materials might be introduced into the body, whether by ingestion, inhalation, skin absorption or in other ways." Beryllium scars the lungs and fluorine attacks the bones. Uranium hexafluoride (UF<sub>6</sub>) is a compound used in the uranium enrichment process that produces fuel for nuclear weapons and nuclear reactors. The Manhattan Project became the Atomic Energy Commission (AEC) 1 January 1947. General Groves worried that worker injury lawsuits would compromise atomic bomb secrecy during World War II. After the war, the AEC worried that lawsuits would jeopardize continued development of nuclear weapons. A secret AEC document, dated 17 April 1947, warned young doctors, "It is desired that no document be released which refers to experiments with humans that might have an adverse effect on public opinion or result in legal suits. Documents covering such field work should be classified 'Secret.'" A 1948 classified document from the AEC's Insurance Branch states, "We can see the possibility of a shattering effect on the morale of the employees if they became aware that there was substantial reason to question the standards of safety under which they are working. In the hands of labor unions the result of this study would add substance to demands for extra-hazardous pay. Knowledge of the results of this study might increase the number of claims of occupational injury due to radiation and place a powerful weapon in the hands of plaintiff's attorney. Like miners' canaries," says David Michaels, "workers in the chemical industry are often the first line of exposure to environmental toxins. During the Cold War, AEC lawyers repeatedly rejected claims of workers who became poisoned as a result of nuclear radiation and exposure to deadly uranium, plutonium, and fluorine. "There is no danger. Therefore you are not sick. Now go back to work!" Michaels explains: "As for the workers in the weapons project, protection from the highest levels of radiation exposure was the primary focus of the government's concern. Many of the workers were not told the names or hazardous nature of the other materials with which they worked; if they were told, they were prohibited from sharing this information with their spouses and physicians. (To this day, many workers are still not told this information.) If they subsequently

became ill, that was just too bad. First the Atomic Energy Commission and then DOE [Department of Energy], hand in hand with their private-sector contractors, systematically denied that working with some of the most hazardous materials ever known had made any workers sick. This was an utterly indefensible position, but boundless resources were expended on its behalf.

The Department of Defense "faced many of the same problems DOE faced - civilian workers who had been exposed to beryllium, radiation, nerve gas, rocket fuel, munitions, and asbestos - and had never addressed any of them.

The Department of Justice had always been successful in shielding the government from liability in worker injury claims. Dr. Michaels, an epidemiologist, writes that lead is "the mother of all industrial poisons" - a neural toxin particularly devastating to the health of children! "The metal is a potent toxin that affects the brain, the kidney, blood, bones, sperm, everything, and it is especially toxic in rapidly growing bodies" that is, infants and young children.

In the 1960s, Herbert Needleman, M.D., a courageous pediatrician at Temple University, discovered a direct correlation between lowered IQ and increased lead content of baby teeth collected from children in North Philadelphia. He got the idea from the 1950s, when strontium 90, a by-product of atomic testing in Utah, became a component in the teeth and skeletons of baby boomers across the USA. AEC researchers harvested organs of plutonium workers and secretly gathered bones of children worldwide to measure radioactive fallout. Dr. Needleman's evidence-based research in the 1960s indicated that "leaded" gasoline exhaust poisoned babies both inside and outside the womb. Lead poisoning was perpetuated in the USA for decades by Robert A. Kehoe, Medical Director of the Ethyl Gasoline Corporation. Dr. Kehoe, the ultimate "mercenary scientist," gave "scientific cover" for Ethyl, becoming the principal defender of keeping "highly profitable" lead in gasoline, which contributed to the poisoning of millions of American children from 1928 until TEL or tetraethyl lead was outlawed in 1986. Industry-owned research facilities conducted lead studies, usually with pro-lead results. Collaboration with the Atomic Energy Commission (AEC) was an ideal arrangement because radioactive material, like lead in tetraethyl gasoline, was becoming a component in the bones of exposed U.S. citizens. Kehoe's research was carefully crafted to benefit industrial sponsors - Ethyl, DuPont, Standard Oil, Pennsalt, etc. - not the health of U.S. citizens.

"Thousands of tons of lead were inevitably deposited in the nation's air, soil, and water!"

Formerly with the Manhattan Project, Clair Patterson, a geochemist at Caltech, analyzed core drillings of ice in Greenland and Antarctica, indicating a direct link between the use of tetraethyl lead gasoline and its presence in the polar ice

cap. In Polar Regions, atmospheric dust is picked up in snowflakes and as it reaches earth, the ice layer is preserved for thousands of years. Each deposit is an intact record of what was in the air when the snow came down, accumulating "like pages in a book." With assistance from a U.S. Army Research Group, Patterson measured less lead in the deeper core of older ice indicating concentrations in the environment had increased 350 percent between 1930 and 1965. Dr. Patterson then analyzed two-thousand-year-old Peruvian skeletons and found there was almost no lead in their bones; Americans in the 1970s had three thousand times more lead in their bodies than prehistoric Peruvians. Lead poisoning of children resulting in brain damage and death represents one of the most hideous public health disasters in America.

"How Industry's Assault on Science Threatens Your Health" is well illustrated by the Ethyl Gasoline Corporation's use of fraudulent science. Incredibly, under oath in 1966, Dr. Robert A. Kehoe told Congress that he and his colleagues at the Kettering Laboratory in Cincinnati, Ohio "had been looking for 30 years for evidence of bad effects from leaded gasoline in the general population and had found none." Kehoe argued that lead is "normal" in the human body and even recommended, for the sake of progress, elevating the lead level in gasoline. There was, he said, "not the slightest evidence" of harm from airborne lead, and claimed that leaded gasoline posed no risk at all to public health. On a personal note, my father survived the Normandy invasion, but not the practice of medicine after World War II. In a 1947 x-ray report, Lt. J. Russell Davey, Jr., MC, USNR, a 29-year-old radiologist, inadvertently exposed a secret AEC study conducted by Robert A. Kehoe, M.D., monitoring workers exposed to hydrogen fluoride (HF) at the Pennsylvania Salt Company in Easton, PA. HF was manufactured by Pennsalt as an essential component in the separation process that produced uranium hexafluoride for the atomic bomb. Dr. Kehoe and the AEC were determined that exposed Pennsalt workers did not learn that HF was invading their soft tissue and bones. However, a radiologist's x-ray film provides visual evidence of poisoning and its effect on the skeletal system.

"All of the films show osteosclerosis previously described and considered to be as a result of fluoride poisoning." Very truly yours, J. Russell Davey, M.D." Guided by the Hippocratic Oath, Dr. Davey sent x-ray results directly to the Pennsalt plant in Easton, PA rather than the Kettering Laboratory in Ohio, where interpretations were routinely adjusted in order to protect the U.S. nuclear weapons industry from potential lawsuits. The AEC preemptively took the medico-legal position that "fluoride poisoning rarely occurs in the United States. If plaintiffs were successful with their suits, the U.S. government would be contractually required to reimburse corporate bomb factories. Described by outraged AEC

contractors as "the offending radiologist," Dr. Davey died suddenly in 1948 of undetermined causes. David Michaels should be commended for giving a voice to a generation of poisoned children, downwinders, atomic veterans, uranium miners, and the many U.S. workers poisoned in our weapons factories. In the Clinton administration, he served as Assistant Secretary for Environment, Safety, and Health in the Department of Energy (DOE), the chief safety officer for the nation's nuclear weapons facilities. Dr. Michaels was the architect of the historic initiative that "made peace with the past," compensating U.S. nuclear weapons workers for illnesses developed while making or testing atomic weapons.

David Michaels has traveled the honorable path of scientific muckracking, peeling back the lies and distortions that have killed millions in the U.S. for the greater good of shareholder profit. The great improvement of his book, "Doubt is their Product," is that it also lines out a series of concrete solutions with proven examples of ways that agencies can retake the high ground. This book has an important inspirational component and a get-to-work component that activists can use to make the workplace and environment safer. Michaels counsels us on practical means such as ending court sanctioned secrecy, allowing injured workers to sue their employers, develop better compensation systems, and ending pre-emption that harms public policy and public health. The book includes a crucial chapter on concrete ways to improve the regulatory system so that it protects the majority rather than serving as a shield, flack, and apologist for corporate profits. This is a must read for any law school course on administrative law, and for any college course on modern government. Its discussion of the asbestos industry--creator of the global mesothelioma scourge--is particularly apropos. Best of all, the book is well written, thoroughly researched, and righteous while being coolly objective.

David Michaels' book is one of the most significant and important books about how "science" works and doesn't work, and how in our society the rules are set in such a way that the rich and powerful can manufacture their own "science" and make it come out however they want it to come out. And the way the rich and powerful want it to come out is for them to make more money, often by passing the cost of death and disease associated with their products and processes on to the public. After reading this book, whenever you hear industry spokespeople talking about "science" you will know that they are really just lobbying for a position that will result in profit for them and loss for you.

Every voter should read this book. Michaels exposes every trick of industries who use or produce



toxic products in their too-often-successful bids to avoid regulation. Is it really worth the money and time they spend? Wouldn't it be cheaper just to find substitute products and protect their workers? In the process of avoiding responsibility, these industries are damaging true scientific analysis for decades to come. David Michaels might be the only person who can present the facts so completely since he was directly involved with many of these situations.

I agree with others that this is dense and long, but I think it is well worth reading, even if you skip parts of chapters. I would especially suggest study of: Chapter 13: Daubert: the Most Influential Supreme Court Ruling You've Never Heard Of Chapter 14: The Institutionalization of Uncertainty [The Data Access Act (Shelby) and the Data Quality Act] Because: a) The behaviors of some corporations, PR agencies, product defense organizations can get somewhat redundant. Hill & Knowlton created the tactics 50+ years ago and they've been widely employed. b) But the legal issues in these two Chapters represent relatively recent changes in the law with profound effects. They (especially the Data Access Act) are now widely being used to harass climate scientists, for example.

The good news is: it's a well-written, well-documented book. The bad news is: I find the corporate chicanery and the gullibility of the American people so depressing, I put it down and haven't been able to pick it up again. I'm doing some light reading now. I'm hoping to pick the book up and finish it after I finish a 'fun' book.

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