

Green Chemistry's March of the Ostriches

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Executive Summary

In an age of routine life-enhancing improvements, self-appointed public policy ostriches are spreading myths as divorced from reality as those surrounding the ostrich. The myths envelop man-made chemicals. Advocates wave an innocent-looking banner extolling “green chemistry,” which in reality involves government second-guessing decisions made within the private sector to force industry to make more “environmentally sound” or “green” products. This movement has succeeded in pressing its anti-chemicals agenda in numerous state capitals, and is trying to take it nationwide.

Advocates of regulation to advance green chemistry suggest it serves the “precautionary principle,” which calls on companies to prove their products are safe before they are allowed on the market. It may sound reasonable, but since no one can prove 100 percent safety, precautionary policies grant government agencies the power to regulate arbitrarily, targeting products for elimination based largely on political, rather than scientific, grounds.

For decades, self-styled “public health” activist groups and the news media have fed Americans a diet of doubts and fears about the chemicals and substances that have made life better in the developed world. Contrary to their precautionary rhetoric, the level of danger that surrounds the modern American continues to decline across the board. U.S. life expectancy keeps rising—more than a year and a half over the last decade, according to the World Health Organization. Despite news that chemicals pose a serious risk, both cancer mortality and incidence levels have declined as mankind has increased their use.

Nonetheless, with their heads buried in the proverbial sand, lawmakers around the nation are responding to the hype with a host of laws and regulations. A November 2010 report by the Safer States Coalition, a leading green chemistry proponent organization, boasts: “In the last eight years, both the number of state chemical laws and the number of states passing toxic chemical reforms have tripled.” A major goal of these laws is the replacement of products that have stood the test of time and prevailed among others in the marketplace.

Government-directed green chemistry is based on the assumption that market processes fail consumers by releases of needlessly dangerous or environmentally damaging products. Green chemistry advocates argue that, with a little direction, government can fix this problem. Yet the assumption that regulators can find less risky alternatives is unrealistic.

Truly “green”—that is, efficient and safe—innovations rarely are driven by government. They are the natural outcome of the competitive market which “green” policies seek to control. The market development of chemical products is also naturally “green.” After all, chemical companies do not succeed if they poison their customers. They succeed by providing high-quality, safe products their customers want. The unique nature of chemicals demands that they conduct the research to ensure their products perform in a safe manner.

Given market incentives to ensure product safety, companies join associations of various kinds to share information and self-regulate. The ubiquitous nature of such standard-setting organizations underscores the role that incentives play in ensuring product safety and quality. Today, chemicals are covered under numerous voluntary regulatory programs for consumer products around the world including cosmetics, plastics, and chemicals in general. Unfortunately, government regulations can hinder such voluntary standards systems and replace them with fewer, less effective programs.

A complex society needs simple rules built on bedrock principles. With the green chemistry movement's anti-chemical agenda proceeding in so many states, we have begun to overturn one of our cherished principles by giving government the authority to clog scientific inquiry without convincing evidence. At the heart of the matter, Americans must understand and tolerate reasonable amounts of risk. It is in our economic and ecological interest to let inventors make discoveries outside the widening orbit of legal and governmental overregulation.

Introduction

Myth sometimes overwhelms reality. Consider the maligned ostrich. As danger lurks, it buries its head in the sand. Or so they say. The truth is much more complicated than that. Ostriches do not really bury their heads in the sand. Rather, they lie down to blend in with the terrain, use their speed to run from danger, or deliver potentially mortal kicks to survive. Such is the lot for man-made chemicals. They are susceptible to mythmaking because the public knows so little about them. Some consider chemical substances a dangerous part of our everyday lives. For both bird and beaker, though, the truth is more complicated than the caricature.

In an age of routine life-enhancing improvements, a herd of self-appointed public policy ostriches are spreading myths as divorced from reality as those surrounding the ostrich. These self-appointed public health advocates wave an innocent-looking banner extolling “green chemistry,” which involves government second-guessing decisions made within the private sector to force industry to make more “environmentally sound” or “green” products. But the policies they propose threaten to clog the wheels of innovation in chemistry in both obvious and unseen ways. In addition, they gum up existing legal systems with layers upon layers of new, and often conflicting, laws and regulations in a quixotic quest for perfect safety. This movement has succeeded in pressing its agenda in numerous state capitals, and hopes its safety imperative for chemicals goes nationwide.

Who knew these modern-day ostriches would be at the vanguard setting a course that alters how innovators innovate? Their demand for absolute safety and their inability to see the tradeoffs promises nothing more than reduced quality of life.

What Exactly is Green Chemistry?

“Green chemistry” means different things to different people, but generally it involves designing and using chemical products and processes with the aim of eliminating or reducing their negative impact on human health and the environment. It calls for pollution prevention, a search for safer alternatives, and the recycling of chemicals for reuse where practical. In the political arena, the term is associated with governmental action to force companies to act according to politically determined green dictates. A California Environmental Protection Agency-funded report describes green chemistry as:

[T]he design and use of chemicals, processes, and products that are safer for human health and the environment. In essence, green chemistry seeks to “design out” the health and environmental hazards posed by chemicals and chemical processes. This approach

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differs markedly from current chemical management practices, which focus on reducing, rather than preventing chemical exposures and environmental contamination.¹

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Although “green chemistry” has become the vogue term in recent years, this issue is not new. It is simply a reframing of a debate raised by left-of-center activists for several decades. In the 1980s, Senator Frank Lautenberg (D-N.J.) carried the banner under the less-than-sexy euphemism of “toxics use reduction,” which failed to gain enough support to see legislation through Congress, but served as the impetus for state laws in Massachusetts, Oregon, and New Jersey.² During the late 1990s, activists increasingly marketed their plans for chemical regulation under the auspices of the precautionary principle, which continues into the current debate. Under that rubric, they succeeded in passing a massive chemical regulation on behalf of precaution in the European Union called the REACH program (the acronym stands for Registration, Evaluation, and Authorization of Chemicals).³ Although proving highly bureaucratic and potentially unworkable, REACH is becoming a model for similar programs around the world, including in U.S. states and in Congress.

Ultimately, all these political debates have the same goal: to meddle in industrial processes and eventually decide which products will be allowed, and which ones removed from commerce. REACH attempts to do that by requiring manufacturers to prove their products are safe by submitting massive amounts of data to regulators in Brussels. However, no one can prove 100 percent safety, so government regulators can then regulate arbitrarily, targeting products for elimination based largely on political, rather than scientific, grounds.

The Precautionary Principle

Public policy ostriches call for “green chemistry” regulation in the name of the reasonable-sounding—but actually quite unreasonable—precautionary principle. As explained in a widely cited statement put forth by some of its leading proponents, the precautionary principle says that, “measures should be taken even if some cause and effect relationships are not fully established scientifically.” It adds that, “the proponent of an activity, rather than the public, should bear the burden of proof.”⁴

In short, the precautionary principle pretends to be the “better safe than sorry” approach familiar to many. Moms everywhere forbid their children from playing a game of catch in the living room. Just often enough, an errant throw shatters grandma’s heirloom. Mom, after all, only needs to be right once. Supporters often present the precautionary principle in the same manner, that is,

“Don’t risk breaking grandma’s heirloom.” “Better safe than sorry” implies that the parties contemplating a risky action know the dangers involved in the action they could come to regret. (If the kids were smart they would simply move grandma’s heirloom—and perhaps the entire contents of the living room—out of harm’s way.)

Taken to a silly-sounding, yet logical extreme, the precautionary principle, in effect, orders our long-lost cousin caveman to forego the danger of hunting and gathering to stay in the cave and starve. It tells the child to remain in its crib, for a fall will almost certainly hurt. It directs women to make housework their career aspiration, because less capable men will otherwise resent them in the workplace.

Each restriction limits progress, growth, and development. In the public arena, these kinds of curbs carry weight and consequences far beyond parental scoldings. Better safe than sorry at least knows the dangers of proceeding forward. The precautionary principle in practice does not. A substance may pose a threat, or it might not. At its best, the precautionary principle is uncertain about what might occur. At its too common worst, it legislates by trying to wipe out the risk of any harm, because anything is potentially dangerous, without considering the potential benefits.

When it comes to chemical regulation, precautionary policies are based on potential and often worst-case “hazards” posed by products rather than the actual risks associated with realistic exposures. For example, cyanide is certainly a hazardous substance to humans, but trace levels of cyanide naturally occur in healthy foods, such as almonds and lima beans, with no adverse consequence to human health.⁵ If the precautionary principle and “green chemistry” regulations applied to these foods, we might have to ban them. It makes no more sense apply such absurd standards to the many valuable chemicals on the market today that appear at inconsequential levels in consumer products.

Mike Feuer, a West Hollywood assemblyman and author of California’s recent comprehensive chemistry law, goes even further. He would ban products not because they might contain trace levels of “hazardous” or “toxic” substances, but simply because regulators have determined that the “data” were insufficient to prove them safe. In April 2009, he submitted comments to the Department of Toxic Substances stating: “[I]t is also essential that chemicals for which no data or incomplete data exist be considered a chemical of concern until a complete dataset is available showing no hazardous or toxic properties.”⁶ In essence, he calls for elimination of useful products without any regard for the products’ real and potential benefits.

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Such a sentiment is even worse than junk science. It is a power grab that does a disservice to anyone who takes scientific inquiry seriously. Adherents of the precautionary principle seek to dress it up in a more positive, appealing fashion. They clothe the negative impact of their actions with the apparently positive scientific search for safer alternatives. This sunnier, second dimension is advanced under the wholesome-sounding “green chemistry” label.

Safety: Perception versus Reality

The precautionary principle—along with the policies that implement it—is aided by what could be called Hysteria, Inc. It is a very big business, and news outlets are its biggest customer. For decades, self-styled “public health” activist groups and the news media have fed Americans a diet of doubt about the chemicals and substances that have made life better in the developed world.

A chemical bogeyman lurks around every corner. If you ask *Washington Post* columnist Petula Dvorak, dread arises from food dyes and their “possible link” to hyperactive children. In a March 2011 piece, she proclaimed, “If getting companies to start selling food that looks a little less like Play-Doh is acting like a nanny state, then bring it on.”⁷ Whether naturally occurring or man-made, valuable chemicals are introduced to the public as foul, four-letter words.

Environmental news stories attract public attention because they can raise serious concerns that pose frightening possibilities. Consider some recent environmental headlines in major and daily regional newspapers. In an article titled, “The Scent of Danger,” a *New York Times* reporter details concerns about chemical emissions from interior plastics of new automobiles.⁸ Similarly, regional papers also carry frightening headlines. Consider just a few: “Greenpeace Assails Apple Over Toxic Chemical Use,” *Atlanta Journal-Constitution*; “Be Aware of Risks in Strong Varieties of Teeth Whitener,” *Charleston Gazette*; and “Cosmetics can Produce a Toxic Cocktail,” *Edmonton Journal*.⁹ None of these topics are good news for consumers, which is why they make good copy for reporters.

The impact on public perceptions about chemicals is apparent. Political scientists S. Robert Lichter and Stanley Rothman examined the content of news stories on cancer from 1972 through 1992, in their 1999 book, *Environmental Cancer—A Political Disease?* Of 1,206 stories that appeared on network news or in leading papers, they found that man-made chemicals were identified most often as known or suspected causes of cancer—a total of 498 times, or more than 40 percent of the time. Lichter and Rothman note: “Tobacco stands alone in its condemnation by the scientific community. But it finished a distant second in the national media coverage.”¹⁰

Lichter and Rothman also compared the views of environmental activists represented in the media with the views of experts in the field. They found that the risks highlighted by activists and the media were not high-level concerns among qualified cancer experts.

As part of their study, Lichter and Rothman had the Roper Center conduct a telephone poll of a random sample of 100 environmental group leaders. The environmentalists agreed with the experts on only one item: Tobacco is the number one cancer concern. Other items on their top five list included dioxin, asbestos (also on the experts' list, but third rather than second to environmentalists), and a couple of pesticides.¹¹ Lichter and Rothman explained:

Environmental leaders assigned higher risks than cancer researchers to 11 out of 13 substances listed ... In the case of manmade substances, the differences in their ratings were frequently dramatic. At least twice as many activists as scientists detected "major" cancer threats cancer from Alar, artificial sweeteners, DDT, dioxin, food additives, and nuclear power.¹²

Lichter and Rothman argue that activists have a more significant impact on media reporting than do the experts. For example, the two most quoted scientific sources found in a systematic review of cancer news reports were ranked lowest by cancer experts in terms of reliability. Of note, the scientists deemed most reliable by cancer experts were the fourth most quoted by the press. Lichter and Rothman conclude: "One obvious reason for this discrepancy is the congruence of interest between the media and the environmental movement."¹³

More recently, a poll by the consultancy the Mellman Group, conducted in the summer of 2010 reported that 73 percent of respondents believe that toxic chemical exposure in everyday life is a serious threat.¹⁴ It is within this fear-filled cauldron that a variety of motivated groups aspire to promote state-sponsored regulation that wipes out risk and, with it, the rewards of a higher quality of life.

Mass media researchers are not the only academics who have noted the tendency toward fear-stoking coverage. As the renowned medical writer Marcia Angell noted in 1994, in the *New England Journal of Medicine*:

Health conscious Americans increasingly find themselves beset by contradictory advice. No sooner do they learn the results of one research study than they hear of one with the opposite message. They substitute margarine for butter, only to learn that margarine may be worse for their arteries. They are told to eat oat bran to lower their cholesterol but later learn that the bran they dutifully

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ate may be useless. They substitute low-calorie saccharin for high-calorie sugar, only to hear that some researchers find an association between saccharin and bladder cancer, while other researchers do not. They exercise because they are told that it is good for their hearts, only to learn that exercise may increase the immediate risk of sudden death.¹⁵

That speaks volumes to the schizophrenic health risk environment in which Americans live today.

Thankfully, scientific progress means doom and gloom are not the only items offered on the daily drama sheets. News coverage has evolved to include stories that herald promising treatments to ward off cancer's onset and ravages. A Google News search for "cancer findings" for the week ending June 6, 2011, returns about 1,960 results.¹⁶ Leading the news was the promising story about two drugs that had breakthrough positive results for persons afflicted with a deadly form of skin cancer.

In fact, contrary to precautionary rhetoric, the level of danger that surrounds the modern American continues to decline across the board. Look at the broadest measure available and you will find that U.S. life expectancy keeps rising—more than a year and a half over the last decade, according to the World Health Organization.¹⁷ Despite news that chemicals pose a serious risk, both cancer mortality and incidence levels have declined as mankind has increased their use.¹⁸ Even women stricken with breast cancer today have a 90-percent five-year survival rate.¹⁹

Trace levels of chemicals in the environment are unlikely to be a major cause of cancer. In fact, man-made chemicals pale next to the naturally occurring chemicals to which humans are exposed daily. "Americans eat about 1,500 mg of natural pesticides per person per day, which is about 10,000 times more than they consume of synthetic pesticide residues," say renowned cancer experts Bruce Ames and Lois Swirsky Gold.²⁰ Even at these levels, the risks of cancer from naturally occurring chemicals are negligible—as are the risks from the much lower exposures to synthetic chemicals. In a 1996 report entitled *Carcinogens and Anticarcinogens in the Human Diet*, a panel of scientific researchers reported that human exposure to chemicals from either natural or synthetic sources are "so low that they are unlikely to pose an appreciable cancer risk."²¹

Moreover, the leading identified causes of cancer do not include man-made chemicals. Instead, tobacco and poor diet comprise about two-thirds of all cancer causes. Other more significant causes include infections and radiation from the sun or other sources. Occupational exposures to chemicals have in the past been

a significant source because of long-term exposure to high levels of chemicals in the workplace—which is not relevant to episodic environmental exposures.²²

Fortunately, greater knowledge and control measures have reduced on-the-job risks significantly in recent decades.²³ Overall cancer rates estimated to be associated with environmental exposures of chemicals from all sources—exposure through consumer products and contaminants in air, water, land, and food—range between 1 to 5 percent, with the most likely rate lower than 2 percent.²⁴ At such low rates, regulation of trace chemicals is unlikely to have any measurable impact on cancer rates and public health.

Not only have we seen progress in the battle against cancer, many genuine threats from our everyday environments have evaporated. Fewer of us work in dangerous jobs. Meanwhile, too many people in the developing world still lack access to safe drinking water, while many others in the developed world drink water without fear of cholera or typhoid thanks to the use of chlorine for more than a century.²⁵

The decline of risk facing modern society is not limited to chemicals. Our chances of perishing in a car crash have plummeted. Traffic fatalities in 2010 dropped by 3 percent below their record low of 2009.²⁶ Moreover, annual motorist deaths have fallen by 25 percent since 2005.²⁷ The rate of fatalities has fallen to 1.09 deaths per 100 million miles traveled, or its lowest level since 1949.

Despite this progress, a 2009 highway safety conference in Savannah, Georgia, aspired to a new national strategy called Toward Zero Deaths. The Federal Highway Administration seeks maximum effort for unreachable gains. Would not the more prudent approach be to call for just enough effort for realistic, incremental gains? After all, we are not about to ban driving, are we? And is not safety a personal responsibility?

Yet, no matter the gains, absolutist efforts and doom and gloom reporting are not going anywhere. Barely a week goes by without a warning about one health threat or another. Along with the good news for skin cancer sufferers, the previous Google News search, in early June 2011, also featured the World Health Organization labeling cell phones as “possibly carcinogenic to humans.”²⁸ Yet that claim remains unproven and is unlikely to be true.²⁹ According to a recent World Health Organization report, cell phones are “possibly carcinogenic,” which sounds scary, but this category is the lowest level that the WHO applies without claiming something poses no cancer risk at all. The same ranking is given to pickles and coffee.³⁰

The cultural fixation on bad news results in part because public toleration

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of risk has fallen as our everyday safety has risen. Perspectives on what risks are acceptable have changed as well. Until a half-century ago, concern with risk centered on intentional personal behaviors, such as smoking and drinking. In legislative bodies across the land, concern about others' personal behavior gave way to legislative efforts to lift the requirement for wearing motorcycle helmets to allowing the use of marijuana for medical purposes. Although there has been much overreaction to the certain behaviors (e.g., the Prohibition response to drinking), Americans, by and large, eventually come to accept choices which they may personally dislike.

After Prohibition, the public conversation began to focus on risks acquired involuntarily. People accept the voluntary risk associated with driving a car because we choose to drive. But some people fear that trace chemicals are outside of individual control—no matter how inconsequential the risk. Anti-chemical activists prey on those fears to push a host of regulations, all in the name of precaution.

The March of the Ostriches to a State Capital Near You

With their heads buried in the proverbial sand, lawmakers around the nation are responding to the hype with a host of laws and regulations. Traditionally, regulatory activity concerning chemicals has been centered in federal agencies, such as the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA). However, in recent years, advocacy for absolute safety has shifted to the states. Anti-chemical activists seek results in state capitals that they hope will force action in Washington, D.C.

Advocates, such as the Safer States Coalition, call on Congress “to fix the broken federal law that allows dangerous and untested chemicals to be used in everyday products and materials.”³¹ A November 2010 report by the Coalition, *Healthy States: Protecting Families from Toxic Chemicals While Congress Lags Behind*, boasts: “In the last eight years, both the number of state chemical laws and the number of states passing toxic chemical reforms have tripled.”³² According to the report, 18 states passed 71 laws in that time period.³³ Far and away, most state activity in recent years has focused attention on individual chemicals and substances, with 66 such single-focus laws passed over the past eight years. A plurality (22) covered lead in products and processes. Eighteen dealt with the PDBE flame retardants, seven laws affected BPAs, and six targeted cadmium.³⁴

Some states are going so far as to ban the manufacture, distribution, and sale of certain products purported to be *potentially* unsafe by incomplete science. In Connecticut, for example, a 2009 ban on the manufacture, sale, and

distribution of BPA in children's products and all food product containers went into effect on October 1, 2011. Yet, the EPA reports, "Studies employing standardized toxicity tests used globally for regulatory decision-making indicate that the levels of BPA in humans and the environment are below levels of potential concern for adverse effects."³⁵ However, EPA remains concerned about BPA's effects, and has started the regulatory ball rolling with an Advance Notice of Proposed Rulemaking, which it published in July 2011.³⁶ It is designed to help determine BPA's environmental impact broadly.³⁷ In a follow-up to the *Healthy States* report, the Safer States Coalition announced in January 2011 that lawmakers in 30 states were planning to introduce legislation aimed at curbing chemical substances in 2011.³⁸ By October 2011, they reported that nine states passed new laws, bringing the number of state chemical laws to 80.³⁹

One of the more comprehensive laws is the Kid-Safe Products Act, passed in Maine in 2008. The Alliance for a Clean and Healthy Maine, a supporter of the law, describes it thus:

This law embodies a practical, precautionary approach by declaring it state policy "to reduce exposure of children and other vulnerable populations to chemicals of high concern by substituting safer alternatives when feasible." With an emphasis on the inherently harmful properties of chemicals, LD 2048 rejected chemical industry attempts to define and defend "acceptable risk" levels for toxic chemicals. Under the bill's hazard-based approach, if a chemical can harm the health of exposed children and there is a safer alternative available, the hazardous chemical should be phased out of use in consumer products.⁴⁰

Like laws enacted elsewhere, Maine's law targets chemicals in products of high concern and seeks to replace them with alternatives. It allows the state to designate chemicals as being of high concern if they have been banned by another state, apparently with no reference or respect for the process the other state used in making its determination. Because of the law's precautionary approach, more than 1,700 chemicals have been listed as "high concern" chemicals to be considered for regulatory action. The measure has met some resistance. A *Portland Press Herald* editorial called the law "Exhibit A in the case against over-regulation in Maine."⁴¹ The state legislature passed a bill in May 2011 to scale back the list of chemicals of concern to 70, but it did take action on one of the chemicals on the original list, voting to phase out the use of BPA in baby bottles, sippy cups, and other containers used by children by 2012.⁴²

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Similar laws have passed in Washington State and Minnesota. In Washington State, the Children's Safe Products Act of 2008 directs the State Department of Ecology to develop a list of "chemicals of concern."⁴³ Once finalized, manufacturers of consumer products will have to report to the Department on whether their products contain any of the listed chemicals. The Department explains on its website: "However, the mere presence of these chemicals in children's products does not necessarily indicate that there is a risk of harm."⁴⁴ Nonetheless, the listing and notice requirement creates the impression of significant risk where it does not exist.

In Minnesota, the Toxic Free Kids Act of 2009 requires the Minnesota Department of Health to create two lists: a "chemicals of high concern" list and "priority chemicals" list. The Act also calls on the Minnesota Pollution Control Agency to develop recommendations on how to reduce and phase out priority chemicals in children's products and substitute them with "safer" chemicals.⁴⁴

The Minnesota "chemicals of high concern list" is comprised of nearly 1,760 chemicals that include such things as talc, nickel, red dye, banned pesticides, plasticizers, and more. The priority chemicals list includes bisphenol A (BPA), cadmium, decabromodiphenyl ether, formaldehyde, Hexabromocyclododecane, lead, and several phthalates.⁴⁶ Both lists reflect a concern about "hazard" but do not convey any information about actual risks related to exposures. Even chemicals known to pose hazards to children at high levels may pose negligible risks at low levels.

For example, lead poses serious risks when children are exposed to high amounts, but trace exposures found in toys do not pose much of a risk despite considerable hype in the press. Intact lead paint on toys is most likely a very low risk. As Dr. Michael Shannon, a pediatrician and toxicologist with the Children's Hospital in Boston and Harvard Medical School, told Reuters in 2007, "A child really has to be able to bite off, or pick off and eat, pieces of paint to be significantly exposed."⁴⁷ The same year, Dr. Suzan Mazor, a toxicologist at Seattle Children's Hospital & Regional Medical Center, told reporters that the Center has never had to treat a child for lead poisoning caused by a toy.⁴⁸ This is not surprising since the exposure levels are so low. Current lead poisoning problems result largely from high exposures to readily accessible sources such as peeling lead paint found in older homes. Fortunately, levels of lead found in children have been declining for decades to levels far below those that the U.S. Centers for Disease Control and Prevention (CDC) has determined to be safe.⁴⁹

As usual, California is way ahead of the curve on chemical regulation, enacting what some consider “the nation’s first green chemistry law,”⁵⁰ in 1986. Known as Proposition 65, the law requires that the governor publish annually a list of chemicals known to cause cancer, birth defects, or reproductive harm. Nearly 900 substances appear on the list today.⁵¹ The list was up over 550 chemicals by 1996.⁵² Proposition 65 prohibits makers, suppliers, distributors, and users of such chemicals from discharging any of the listed chemicals into sources of drinking water. Proposition 65 also requires businesses to label or otherwise make known a chemical’s presence within a product.

While the signs and labels may be most visible to consumers, the list itself is where the action lies. The latest list runs just over 21 single-spaced pages in length. It contains entries from the common to the exotic, from cocaine, primary tobacco smoke, and wood products, to seemingly exotic-sounding unpronounceables, such as Propylthiouracil and Urofollitropin.

Despite what the list suggests, a significant number pose little realistic cancer threat, yet they carry the stigma of being blacklisted. Specifically, nearly one of every two substances officially labeled as “known to the State to cause cancer” is allowed to be used under limits set by California’s safe harbor rules. In other words, some 261 substances that are part of the Prop 65 list are considered to have “no significant risk level” for causing cancer. Significantly, more than 55 percent of the allegedly cancer-causing chemicals reached safe harbor under expedited procedures provided under the law. Another 26 listed chemicals gain safe harbor, because they produce “no observable effect level” for reproductive toxicity. Fully one-third of the chemicals on the Prop 65 list enjoy safe harbor for the best of reasons—they can be used safely without causing cancer or toxic reproductive effects.⁵³

Astute policymakers will ask: 1) How many more chemicals will state regulators recognize for safe harbor protection; and 2) Is this a smart use of limited regulatory resources and the state’s scientific reputation when so many experts around the globe are engaged in these very issues?

One key idea behind the lists is that the chemicals on them have been found to cause cancer or reproductive harm based on the findings of a named authoritative scientific body. That was not the case with the sweetener saccharin. It was listed on October 1, 1989, due to a court decision. It exited the California Prop 65 list on April 6, 2001, because neither the National Toxicology Program nor the International Agency for Research on Cancer thought it was a human carcinogen.⁵⁴

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Listing chemicals and alerting people to their existence at inconsequential trace levels provides no public health value.

Listing chemicals and alerting people to their existence at inconsequential trace levels provides no public health value. Instead, Proposition 65 has proven to be a bonanza for lawyers. The Act includes provisions that allow “citizen enforcement,” which involves citizens bringing suit against companies that are out of compliance with the law’s intense reporting mandates. This usually happens because they are unaware of the law’s applicability to them. Prop 65 also allows law firms to collect the costs of litigation should they prevail against companies.

These factors have created a system whereby private parties have essentially become “bounty hunters,” searching down violators and then working with law firms that rack up fees bringing cases. A June 2010 white paper on the topic by a California law firm explains:

California’s Proposition 65, and particularly its private party enforcement, or “bounty hunter” provisions, have created a massive, expensive, baffling headache for companies doing business in California in the past twenty years. The law requires meaningless warnings of chemical exposures which often pose no real risk. Simultaneously, the law creates a system for relieving defendants—particularly out-of-state companies—of large amounts of money.

Worse, lawyers who “defend” clients in Proposition 65 litigation often don’t defend anyone—Proposition 65 has become an enormous money machine for the attorneys representing both sides. Cases almost never make it to court, and the lawyers in the “Proposition 65 bar,” who deal with each other every day, routinely settle five-and six-figure cases at the expense of businesses all over the country. Welcome to California. Bring your checkbook.

To companies from out of state, the scenario is usually like this: One day, out of nowhere, you get a letter from a law firm you’ve never heard of. The letter informs you that (a) A product you import, manufacture, provide parts for or sell causes cancer and/or birth defects; (b) You’re going to be sued in 60 days; and (c) there’s a number you can call to discuss settlement. Sound familiar? We thought so. A Proposition 65 bounty hunter has just cornered you. After reviewing your options, consulting with your attorneys, and learning a lot about a law you didn’t even know existed, it looks like you don’t have much choice. One way or another, if you want to keep doing business in this state, it’s going to cost you.⁵⁵

If that weren't bad enough, the California legislature decided that it needed to do more to "protect" unsuspecting consumers from "involuntary" chemical exposures. In 2009, it passed the Green Chemistry Initiative, which moves the debate from disclosure to product redesign. The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) is in charge of implementing the new law. Specifically, it is charged with developing a list of "chemicals of concern," advancing regulations to reduce or eliminate use of those chemicals (via product bans that force companies to reformulate products), and developing programs through which manufacturers must provide greater disclosure and data about the chemicals they use.

However, the agency has been unable to finalize regulations because of substantial disagreement over what the regulations should cover initially. Environmentalists claim that the scope should be broad—far broader than the last draft of regulations which focused on three areas: children's consumer products, personal care products (everything from soap and toothpaste to cosmetics and perfume), and cleaning products.⁵⁶ Industry groups seek regulations that are limited in scope, focus on relatively higher-tiered risks, and protect confidential business information.⁵⁷ In late December 2010, the DTSC postponed releasing final regulations with Acting Director Maziar Movassaghi explaining: "We thought it would be better to get it right, rather than just getting it done."⁵⁸

The overwhelming complexity of such regulation presented another problem. The state's intent to create its own novel database needlessly repeated a product often copied the world over. As the American Chemistry Council noted in comments to the California Office of Health Hazard Assessment: "[T]here are already numerous sources of information on chemicals that are readily available to the public, including the Organization for Economic Cooperation and Development's eChemPortal and its 17 participating databases, databases from the National Institutes of Health's National Library of Medicine and the CDC's Agency for Toxic Substances and Disease Registry."⁵⁹ Even a recent DTSC panel discussion of the alternatives assessment process asked how should the "availability of potential alternatives be defined?"⁶⁰

Industry groups are supporting efforts to pass federal legislation on chemicals, with the hope that a single federal law will preempt myriad state laws. Leading the charge for much of the chemical industry is the American Chemistry Council, which supports "modernizing" the federal Toxic Substances Control Act, which it contends would provide the industry with one set of standards to follow rather than a patchwork of 50 state chemical laws.⁶¹

A major goal of green chemistry is the replacement of products that have stood the test of time and prevailed among others in the marketplace.

But industry should not presume that a federal law would preempt provisions put into place by various state legislatures. Advocates argue that whenever two laws conflict, the more stringent of the two should take precedence. The Safer States Coalition's *Healthy States* report is explicit about the matter: "Federal reform should continue to allow states to enact stronger protections when states determine they need such policies to protect their populations."⁶²

This is not an expression of hope against time-tested experience. There is a reason people have heard of such notions as the California car or California emissions. The state's recent environmental policy history is rich with laws that go beyond federal laws. It applies to chemical use as well. For example, the colloquial term "California waste" refers to waste that goes beyond federal regulations detailed in the Resource Conservation and Recovery Act. Such wastes include antifreeze, used oil, asbestos, and polychlorinated biphenyls.⁶³

Implications and Impacts of "Green Chemistry"

Perils of government-led product substitution. A major goal of green chemistry is the replacement of products that have stood the test of time and prevailed among others in the marketplace. Government-directed green chemistry is based on the assumption that this process fails consumers by releases of needlessly dangerous or environmentally damaging products. With a little direction, green chemistry advocates argue, the government can fix this problem. But this logic is fundamentally flawed.

In a world laden with risks, so-called precautionary policies that prevent new technologies from being developed and implemented represent the truly risky approach. The assumption that regulators can find less risky alternatives is unrealistic. The reason a product succeeds in the marketplace is because it is the best alternative. The idea that regulators can pick better options ignores the fact that politics may play a larger role than science in government selection of alternatives. As a result, "politically correct" alternatives may win, while public health suffers.

In fact, oftentimes the alternative chemicals are not all that easy to find, because the primary chemicals work so well. In an article discussing Massachusetts' Toxics Use Reduction (TUR) law, Francine Laden and George M. Gray, both of Harvard, point out:

The basic premise behind TUR is that the risks associated with toxic chemicals outweigh any benefit associated with their use. ... However, industry is not using these chemicals merely because they are "toxic," but because they work. ... [S]ix of the eight

organic chemical building blocks, from which many other chemicals and synthetic products are made are listed as toxic. These are butadiene, benzene, ethylene, propylene, xylene and toluene. They are necessary for making many useful non-hazardous products and cannot easily be replaced. For example, the manufacture of many recreational products such as golf balls, camping and hiking equipment and compact discs also depend on these chemicals. Furthermore, some of these chemicals are important raw ingredients of many over-the-counter pharmaceuticals.⁶⁴

The Massachusetts program and others like it may list such chemicals with the hope of reducing their use, but such actions are not necessarily wise. In fact, some products are beneficial *because* of their innately “risky” nature. Chemicals that are designed to kill insects and pathogens that otherwise would harm the public must carry some risk or they would not provide the public health benefits they promise. Drugs pose risks and often carry side effects, but we take them nonetheless to ward off more serious health consequences.

For example, overly precautionary regulations have eliminated many valuable pesticides, making it increasingly difficult to produce food and eliminate disease-carrying insects. A 1992 National Academy of Sciences report warned: “A growing problem in controlling vector-borne diseases is the diminishing supply of effective pesticides.” Because all pesticides must go through an onerous EPA registration process, “some manufacturers have chosen not to reregister their products because of the expenses of gathering safety data. Partly as a result, many effective pesticides over the past 40 years to control agricultural pests and vectors of human disease are no longer available.”⁶⁵

The impact of excessive caution on the medical device industry illustrates the harm. As the Competitive Enterprise Institute (CEI) has documented in numerous cases, the FDA has delayed life-saving drugs, sometimes for decades, as thousands of people die waiting for approvals.⁶⁶ For example, the agency delayed approval of the Omnicarbon heart valve for 15 years, finally granting approval in 2001. Meanwhile this device had been saving lives in Italy, Germany, France, Switzerland, and Japan since 1986, with nearly 30,000 implanted during those years of FDA delay. In 1998, years before FDA granted approval, Dr. Steven Phillips of the National Institutes of Health reported to Congress that these valves “demonstrated a complication rate one-half that of equivalent valves approved by FDA.”⁶⁷ A 1996 CEI poll of cardiologists found that 65 percent agreed with a statement that the FDA approval process is too slow.⁶⁸

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Regulatory overcaution, such as that of the FDA, actually can prevent life-saving products from entering the marketplace on the front end. Then add precautionary green chemistry's approach to already approved products on the back end. The resulting recipe cannot be good for public health. Consider atrazine, which journalist Jon Entine highlights in a case study for the American Council on Science and Health. Entine points out the how this herbicide is especially valued for its selective ability to do its job while not harming the crop growers seek to harvest. Its weed control increases crop yield. It also eliminates the need to till soil, thereby saving energy, preventing soil erosion, and reducing runoff to waterways.⁶⁹

Entine also notes that atrazine is also one of the most studied herbicides. Introduced in the United States in 1958, it has undergone more than 6,000 studies, and has been approved for appropriate use worldwide. The European Union banned atrazine starting in 2005, after researchers found traces in groundwater yet could not demonstrate harmful levels of atrazine, but the rest of the modern world, including the United States, chose not to follow suit.⁷⁰ However, the EPA continues to issue studies and reevaluations of atrazine.⁷¹ With the aid of environmental activists who gain media coverage by hyping the risks, EPA may eventually eliminate this invaluable, already-approved product based on nothing but uninformed precaution.⁷²

Green chemistry programs today focus on a number of valuable chemicals. Key among them is the chemical bisphenol A (BPA), which is used to make hard, clear plastics and resins that line food containers to prevent contamination of food from rust or pathogens. Several states have considered and some passed laws that may eliminate BPA use in food packaging and containers used for baby food.⁷³ Packaging manufactures have been trying to remove BPA from their products because of activist-led pressure, but they are having a very difficult time finding safer alternatives. One industry representative told *The Washington Post*: "We don't have a safe, effective alternative, and that's an unhappy place to be ... No one wants to talk about that."⁷⁴

Other plastic products might provide alternatives, but unfortunately, many of those are also targets of politically driven green chemistry agendas. For example, activists also have specious campaigns to ban polyvinyl chloride plastic products used for hospital tubing, blood bags, and other things for which they allege a host of unsubstantiated problems.⁷⁵ Even where adequate substitutes exist, they are often more expensive.

Sometimes, substitute products create new, more significant environmental problems. Consider the European Union's ban on tin-lead solder in electronics.

EU regulators only focused on the “hazards” associated with lead, even though the risks posed by tin-lead solder in computers were exceedingly low.⁷⁶

The Association Connecting Electronics Industries and the California Circuits Association noted in comments to the California Department of Toxic Substances Control that the replacement product—tin-silver copper solder—demands higher temperatures to process. They cited an EPA life-cycle analysis that shows how the increased energy use causes “higher air pollution, acid rain, stream eutrophication, and global warming impacts than the tin-lead soldered electronics.”⁷⁷

Undermining innovation. Under the best scenarios, green chemistry places government agencies in charge of innovation and product development in multiple respects. First, states that have developed lists or banned chemicals of high concern put a brake on their further and potentially safer development.

In California, for example, the assessments of alternatives have produced a lot of heartburn. One of the reasons concerns the state’s approach to trade secrets and confidential business information (CBI). “Our members will not put resources into the research and development necessary to find safer alternatives without a guarantee that they can claim CBI protection for their proprietary formulas,” noted one trade group.⁷⁸ This complaint was repeatedly lodged in comments submitted to the DTSC. The paralyzing upshot is that government will be at the crossroads of allegedly safer chemical developments and innovations, refereeing what can remain secret and go forward and whether the public interest trumps intellectual property rights.

Government-mandated or -led green chemistry creates a regrettable scenario. Inventors work to solve problems, from the mundane to the metaphysical. They come up with a product or a process to make the world work better. Then government regulators apply arbitrary standards to ban or make a product no longer viable. The benefits to society of all the effort and investment are lost, and the result is reduced incentive to invest and innovate. Aside from obvious harm, inventors’ job is not to second guess their creations. To put it rhetorically, would Alexander Graham Bell hesitate upon inventing the telephone to consider all the copper that would need to be mined?

Indeed, the Green Chemistry Alliance—an industry association in California—laments the anti-technological effects of the state’s impending green chemistry mandates:

Under the proposed rules, a manufacturer who tries to make a product more sustainable is likely to wish he hadn’t bothered.

Changing the formulation of a regulated product—even to make

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it greener—will require the company to provide extensive, proprietary information to the DTSC, who will have sole discretion as to how it is used. This requirement, along with an inevitable regulatory backlog resulting from the lack of focus, will bring many product innovations to a halt. Contrary to the vision of the Green Chemistry Initiative, these regulations will have a significant chilling effect on all new product innovation in California” said John Ulrich, GCA co-chair. “Companies trying to improve their products will become entwined in what will undoubtedly become an interminable regulatory and bureaucratic morass. I’m certain this is not what Governor Schwarzenegger had in mind when he signed the enabling legislation in 2008.”⁷⁹

The implications for free scientific pursuit are both obvious and not so apparent. Scientists know that breakthroughs and definitive results are rare and elusive. They publish knowing that their peers will scrutinize their findings to further learning and hone the applicability of their results. Under a system of precautionary green chemistry, scientists would seek to impress, and comply with, their government minders, placing honest, rigorous science as a secondary priority.

As part of the discovery process, government institutions would guarantee a growing role for the government and an increasingly subservient position for innovators. President Eisenhower counseled against such a mixing in his Farewell Address. Ike cautioned that, under such a scenario, “a government contract becomes virtually a substitute for intellectual curiosity,” and implored the nation to be alert to “the prospect of domination of the nation’s scholars by Federal employment, project allocations, and the power of money.”⁸⁰ Today, as the American Chemical Society notes on its website: “Although the engines of innovation are largely in private hands, the federal government provides nearly 60 percent of all support for basic research.”⁸¹

Precautionary green chemistry also threatens to distort the scientific discovery process. Those “Eureka!” moments are made all the more elusive. Trial without error requires that a third party—often government—be involved to help determine which trials may go forward due largely to their anticipated lack of harm. Imagine where chemotherapy would be in treating cancers if the precautionary principle held such sway a half-century ago. Third, green chemistry effectively elevates the exception to the place of the rule. As the late political scientist Aaron Wildavsky succinctly explained, “Thus, a vaccine that saves millions but kills a few would not be justified.”⁸²

Scholar Nathan Rosenberg—one of the minds behind the Rosenberg-Birdzell hypothesis that innovation stems from competition among politically independent entities—observes: “If the human race had been confined to technologies that were understood in a scientific sense, it would have passed from the scene long ago.”⁸³ In other words, we are lost if we must scientifically articulate *why* our discoveries work in every respect without leaving external effects.

Pity the caveman forced to comprehend and explain the danger, the soot, the ash, the additional air pollution, and the particulate matter that would result from his discovery of fire and applying it to burning wood. That is a cartoonish example for a reason. Behind all the scientific terminology and elevated conversation, precautionary green chemistry considers chemicals threats from the outset rather than potential solutions when applied productively. In the scientific community, the controversy is depicted as one of measuring chemicals as hazards on their own or as relative risks through exposures under different scenarios.

Precautionary green chemistry’s negative impact will be most felt in the practical muck of the real world, but it is completely unnecessary. Safety is already well-established. The fact that the precautionary green movement is on a constant search for new chemical scares should confirm that safety is working for the chemicals that already surround us.

Regulatory Repetition. The rush by states to enact their own sets of restrictions, requirements, bans, and disclosures threatens to make compliance an exhausting exercise in regulatory repetition. This is nothing new, as states and regulated industries are quite accustomed to complying. After all, the regulated community’s refrain says the costs get passed on to the customer.

For better and worse, governments are designed to make and enforce a society’s rules. However, policy makers are now on the verge of making chemical innovation more of a regulatory game than it already is, and one in which government officials host, referee, and play at their choosing.

Chemistry should not become merely a test-tube science producing lab results and awaiting official government approval. Its dynamic beauty lies in how it applies all sorts of potential solutions to the mix of the marketplace. Some work better than others. Others only have limited applications. Chemical components are part and parcel of virtually everything manufactured in the modern American economy. The industry boasts that it is responsible for one in nine, or nearly 11 percent, of U.S. patents.⁸⁴ Regulation that stymies this discovery process will undercut the innovative nature common among chemists that brings great value to society.

We are lost if we must scientifically articulate why our discoveries work in every respect without leaving external effects.

Players in the marketplace, not distant bureaucratic managers, offer the best assessment of what is most efficient, with price signals always driving processes toward maximum efficiencies.

Private Markets: Truly “Green”

Truly “green”—that is, efficient and safe—innovations rarely are driven by government. They are the natural outcome of a competitive market which “green” policies seek to control. On the waste reduction side, it is very common for companies to strive to use as few resources as necessary to make and recycle their products within the industrial process because efficient resource use means lower costs and thus higher profits. Players in the marketplace, not distant bureaucratic managers, offer the best assessment of what is most efficient, with price signals always driving processes toward maximum efficiencies.

In contrast, distant managers and academics know very little about what makes sense in any industrial process. Rather than being armed with the best information—that closest to the source—and driven by bottom-line efficiencies, they are often driven by politics and mistaken assumptions about how market and manufacturing processes actually work. In the chemical field, they focus on products based on fear down to the infinitesimal potential for harm rather than the science behind real vs. theoretical exposures. Government planners do not bear the costs or necessarily feel or understand the consequences of their decisions.

Professors Pierre Desrochers of the University of Toronto and Karen Lam of Osgoode Hall Law School at York University show how incentives have moved the marketplace toward “eco-efficiency” via a number of historical examples. They show how the desire for profits and human progress have promoted recycling of everything from wool rags in Victorian England, to old iron skillets and other tools, and even the byproducts of making butter.⁸⁵

Such incentives continue to promote a host of truly green efforts within modern industry. Consider, for example, the industrial processes involving orange juice and packaging. Former Coca-Cola Foods CEO Harry Teasley detailed at an Atlas Foundation Forum how U.S. manufacturers maximize the value of the oranges they use. Orange juice manufacturers managed to squeeze far more juice out of each orange than is possible through manual methods. There is virtually no waste as the rinds are used for animal feed, and orange oil is extracted for use in fragrances, cleaners, and other applications. In addition, orange juice concentrate requires far less energy to transport than oranges because it is seven times lighter, Teasley explained. Shipping oranges would require nine times more corrugated cardboard waste and require six times the number of trucks.⁸⁶

This case study highlights the fact that modern packaging is a true environmental innovation because it makes distribution more efficient. As University of Arizona Archaeology Professor William Rathje notes: “The average

household in Mexico City produces one-third more garbage a day than does the average American household. The reason for the relatively favorable U.S. showing is packaging—which is to say, modernity.”⁸⁷ Indeed, packaging is a market development that is critical in reducing food waste and ensuring a stable and sanitary supply for food. In developing countries that lack strong market economies, food spoilage of 30 percent to 50 percent is common because of inadequate packaging, storage, and distribution, while developed nations experience food spoilage rates of only 2 percent to 3 percent.⁸⁸

It is not uncommon for firms to recycle a large portion of the byproducts from their manufacturing processes—including chemicals. In fact, data from the federal EPA’s 2009 Toxics Release Inventory (TRI) indicates that of the firms required to report under the program more than 6 billion pounds of chemicals are recycled on-site at manufacturing plants and another 1.5 billion pounds are recycled off-site.⁸⁹ Such recycling is not the result of “right-to-know” reporting, as some environmental groups might claim.⁹⁰ Instead, the TRI counts this recycling as a form of “disposal,” which green activists portray as an environmental negative. In reality, such efficient recycling occurs because firms recognize the difference between resources and refuse, so they try to capitalize on the former and minimize the latter.

Markets also provide strong incentives for firms to reduce the amount of materials that go into a product. Reducing these inputs saves a few pennies per product, which can translate into millions of dollars. For these reasons, many products have become lighter and less resource-intensive, as firms have learned to make them meet the same performance standards with less material. For example, between 1980 and 1998, manufacturers reduced the material necessary to make a two-liter plastic bottle from 65 grams to 48 grams, an aluminum can from 19 grams to 14 grams, a glass bottle from 255 grams to 170 grams, a steel can from 48 grams to 36 grams, and a plastic grocery bag from 9 grams to 6 grams.⁹¹

This principle works at many levels, even at a very large scale. In fact, Lynn Scarlett points out several examples in a chapter of *Earth Report 2000*. She notes: a skyscraper built in this decade requires 35 percent less steel than the same building a few decades earlier, as builders have learned to meet the same needs with less material; and a single fiber optic cable made with 65 kilograms of silica can transmit many times more messages than a one-ton copper cable.⁹² Consider the fact that governments did not have to mandate these and many other innovations, such as modern insulation of homes, high energy windows, energy efficient roofing materials, and the like.

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Energy efficient light bulbs were ascendant before lawmakers decided to essentially mandate them by phasing out competition.

Even energy efficient light bulbs were ascendant before lawmakers—looking to earn green points with voters—decided to essentially mandate them by phasing out competition. Indeed the cost savings alone are an attractive quality, particularly for owners of large buildings and facilities. For example, New York City’s Grand Central Station began switching over to energy efficient lighting several years back simply because it would save money. The switch is expected to save the station \$100,000 a year and reduce energy usage by 100,000 kilowatt hours of electricity.⁹³ Similarly, Home Depot expected to save \$16 million a year by switching to these bulbs.⁹⁴

Modern home heating systems are far greener than those that came before them. While people think that electricity from coal-fired power plants, oil, or even gas is not green, these energy sources are far superior to the fuel sources used before them—such as the burning of wood, which emitted considerable pollution. In fact, public health and environmental quality would improve in developing nations if they could transition to modern energy systems used in American homes. Lacking such amenities means that the rural poor around the world rely on burning biomass fuels (such as cow dung) in their homes as an energy source. Resulting pollution leads to an estimated 1.7 million deaths annually associated with respiratory illnesses.⁹⁵

The market development of chemical products is also naturally “green.” After all, chemical companies do not succeed if they poison their customers. They succeed by providing high-quality, safe products their customers want. The unique nature of chemicals demands that they conduct the research to ensure products perform those functions in a safe manner.

Given market incentives to ensure product safety, companies join associations of various kinds to share information and self-regulate. For example, since 1973 the International Fragrance Association (IFRA) has been setting rigorous standards for the industry by employing independent researchers and laboratories to assess the risks associated with their products. IFRA employs an independent panel of experts in relevant fields such as “dermatology, toxicology, pathology and environmental sciences.” It works with the Research Institute for Fragrance Materials (RIFM), a scientific division within IFRA.⁹⁶ Because the process does not demand political debates and negotiations, the panel focuses on the latest science and can act swiftly as new information develops. Its members—which comprise 90 percent of all fragrance companies worldwide—are bound by the panel’s decisions.

The overwhelming majority of companies in the field join such organizations because they want to ensure their products are safe. Such bodies

are usually the best sources of information on product risks, and they are often the key source upon which governments act. Since its inception, IFRA's scientific panel has either banned or restricted 174 chemicals, based on scientific rather than political grounds.⁹⁸ IFRA's standards are stringent. Its voluntary process enables quicker action than government regulators can provide. For example, IFRA banned the chemical musk xylene in 2009 based on its own assessment. Two years later, the European Union acted to ban the substance based on the IFRA findings.⁹⁸ Such voluntary associations exist for many important industries. For example, a study by the Cato Institute highlights the Underwriters Laboratories' standards noting:

Today, it is almost impossible for a producer of electric appliances and equipment to claim that its products are safe without the approval of Underwriters Laboratories (UL), an independent third party. Retailers, customers, and even insurance agencies look for UL approval. UL enforces high standards for product safety without government regulation, benefiting both producers and consumers.⁹⁹

A Department of Transportation study on voluntary standard-setting in 1993 points out some key attributes of such systems. Among them is the fact that, "voluntary standardization is a common, almost ubiquitous phenomenon in U.S."¹⁰⁰ Many arrangements predate government regulation and have "often played a critical role in advancing (or even making possible) the commercial viability of various U.S. industries."¹⁰¹ Interestingly, the study points out that even the standard-setting organizations join associations to ensure their standards are sufficient.

The American National Standards Institute (ANSI) governs the standard-setting of its members. It explains on its website that it "oversees the creation, promulgation and use of thousands of norms and guidelines that directly impact businesses in nearly every sector," and it is "actively engaged in accrediting programs that assess conformance to standards—including globally-recognized cross-sector programs such as the ISO 9000 (quality) and ISO 14000 (environmental) management systems."¹⁰²

The ubiquitous nature of such standards underscores the role that incentives play in ensuring product safety and quality. James C. Miller III, then Chairman of the Federal Trade Commission, pointed out in 1985 that American industries had in place some 32,000 programs of privately developed standards.¹⁰³ Chemicals are covered under numerous voluntary, regulatory programs for

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A dynamic environment of testing and discovery does not operate well in a static world of pre-emptive bans and restrictions.

consumer products around the world, including cosmetics, plastics, and chemicals in general.¹⁰⁴

Unfortunately, government regulations can hinder such voluntary standards systems and replace them with fewer, less effective programs. For example, several voluntary, private efforts to provide labeling of organic food existed prior to federal regulation. These were basically supplanted and replaced when the U.S. government established standards to certify products as organic—although their government’s definitions are not necessarily more accurate or better than the systems provided by private companies.¹⁰⁵

Conclusion

A complex society needs simple rules built on bedrock principles. With action proceeding on chemicals in so many states, we have begun to overturn one of our cherished principles by giving government the authority to clog scientific inquiry without convincing evidence. At the heart of the matter, Americans must understand and tolerate reasonable amounts of risk. It is in our economic interest to let inventors make discoveries outside the widening orbit of legal and governmental oversight.

Lawmakers ought to let scientifically defensible findings determine how and whether a substance has acceptable uses. By definition, a dynamic environment of testing and discovery does not operate well in a static world of preemptive bans and restrictions. It is natural that industries and agencies are knotted in a constant struggle. It is unnatural to the American experience that a burden of perfection gets placed on creators and craftsmen who must prove their products, and by extension themselves, innocent while presumed guilty.

Why add to the command-and-control regulatory mistakes of the past? Alternative approaches grounded in the noble advance of science and health are available today but in danger of being choked off due to unfounded fears. Will we be smart enough to take advantage of the opportunities our modern age now affords us?

Notes

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- 11 The pesticides identified specifically were EDB and DDT. EDB stands for ethylene dibromide, a product with industrial and pesticidal uses. DDT stands for dichlorodiphenyltrichloroethane, a pesticide once widely used to control insects in agriculture and for mosquito control. It is currently banned in the United States, but has limited application for malaria control in developing nations.
- 12 Lichter and Rothman's research included two opinion polls. The first was the 1994 Roper Center for Public Policy Research poll of the members of the American Association for Cancer Research. Lichter and Rothman explained that this association is "made up of research scientists who have established a track record of peer-reviewed publications on the causes, treatment, and prevention of cancer." Rothman conducted the other poll (1984) at the Center for the Study of Social and Political Change at Smith College. It surveyed a random sample of members from the American Association for Cancer Research and members of the American Society of Clinical Oncology, which is composed of doctors who treat cancer patients. More than half (457/800) of those polled participated in the survey. The two polls of cancer experts provided strikingly similar responses. In both, the experts' top five most significant risks were identical, namely tobacco, asbestos, unhealthy diet, sunlight, and high-fat diets. The authors then compared these findings to opinions of environmental group leaders drawn from a sample 442 individuals who "serve as senior staff members, heads of state or regional chapters, and on national boards of directors" from the 12 environmental groups most often cited by the press. Lichter and Rothman, *Environmental Cancer*, p.119.
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