TOXIC INACTION

Why poisonous, unregulated chemicals end up in our blood

By Mark Schapiro

In the late 1990s, citizens of several European countries learned from newspaper reports that their infants were constantly being exposed to a host of toxic chemicals. Babies were sleeping in pajamas treated with cancer-causing flame retardants; they were sucking on bottles laced with plastic additives believed to alter hormones; their diapers were glued together with nerve-damaging toxins normally used to kill algae on the hulls of ships. When European health officials tried to look into the matter, they were confounded by how little they actually knew about these and other potentially hazardous chemicals. Regulators discovered that they had no way of assessing the dangers of long-term exposure to everyday products. Some manufacturers of baby goods did not even know what was in their own products, since chemical producers were under no obligation to tell them. Such data, if it existed at all, was secreted away in the vaults of chemical companies and had never been submitted to any government authority.

In the years since those news reports, the nascent science of bio-monitoring has provided further insight into how the industrial chemicals that are in clothes, food packaging, cosmetics, toys, electronics, and just about every modern convenience are actually lodging in the human body. Greenpeace U.K. released a study in 2005 that found numerous toxic chemicals in the umbilical-cord blood of European infants. That same year, World Wildlife Fund International tested the blood of three generations of women from twelve European countries. The largest number of chemicals—sixty-three—was found in the group of grandmothers. Given the number of years they had had to accumulate exposure, this result was perhaps not surprising. But the next-highest level was among their grandchildren, aged twelve to twenty-eight, who in their short lifetimes had amassed fifty-nine different toxic chemicals. The blood of a nineteen-year-old Italian, who later sent me her test results, included brominated flame retardants, which are potential liver, thyroid, and neurological toxins that are used to coat many electronics; the pesticides DDT and lindane, the latter of which is suspected of contributing to breast and other cancers; perfluorinated chemicals, known carcinogens that are used as stain- and water-repellents on clothing, furniture, and nonstick cookware; and artificial musk aromas, found in soaps and perfumes, that scientists claim can reduce the body's ability to expel other toxins.

Bio-monitoring tests in the United States have revealed the same dangerous chemicals making their way into the blood of Americans. In 2005, the Centers for Disease Control and Prevention completed screening for the presence of 148 toxic chemicals in the blood of a broad cross section of Americans; it found that the vast majority of subjects harbored almost all the toxins. In the same year, the CDC's National Survey on Fam-

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ily Growth concluded that rates of infertility were rising for women under the age of twenty-five, a spike many scientists attribute, at least in part, to routine exposure to toxic chemicals. The Environmental Working Group conducted tests on the umbilical cords of ten newborns in 2006 and discovered that cancer-causing, endocrine-disrupting, and gene-mutating chemicals had passed from the mothers to their fetuses through the placenta.

Up until the 1970s, no country had imposed any meaningful oversight of the tens of thousands of chemicals that had entered the marketplace since World War II. Then, in 1976, the U.S. Congress passed the Toxic Substances Control Act (TSCA), which granted the government the authority to track industrial chemicals and to place restrictions on any that proved harmful to humans or the environment. Because the United States was the world's preeminent economic power, other major chemical producers—Germany, France, and Britain—soon brought their national regulations into line with TSCA so as not to lose the U.S. market. Shortly thereafter, Japan and other countries hoping to conduct trade with the West also had to adopt the central principles of the law as their own. Thus, America set the rules for chemical regulation across the globe.

But TSCA came with an enormous loophole, a caveat leveraged into it by the powerful chemical industry: every chemical already on the market before 1979 was exempted from the law's primary screening requirements. Three decades after TSCA came into being, 95 percent of all chemicals in circulation have never undergone any testing for toxicity or their impact on the environment. The extent to which TSCA has failed to regulate hazardous substances is now evident in the bio-monitoring results in Europe and America.

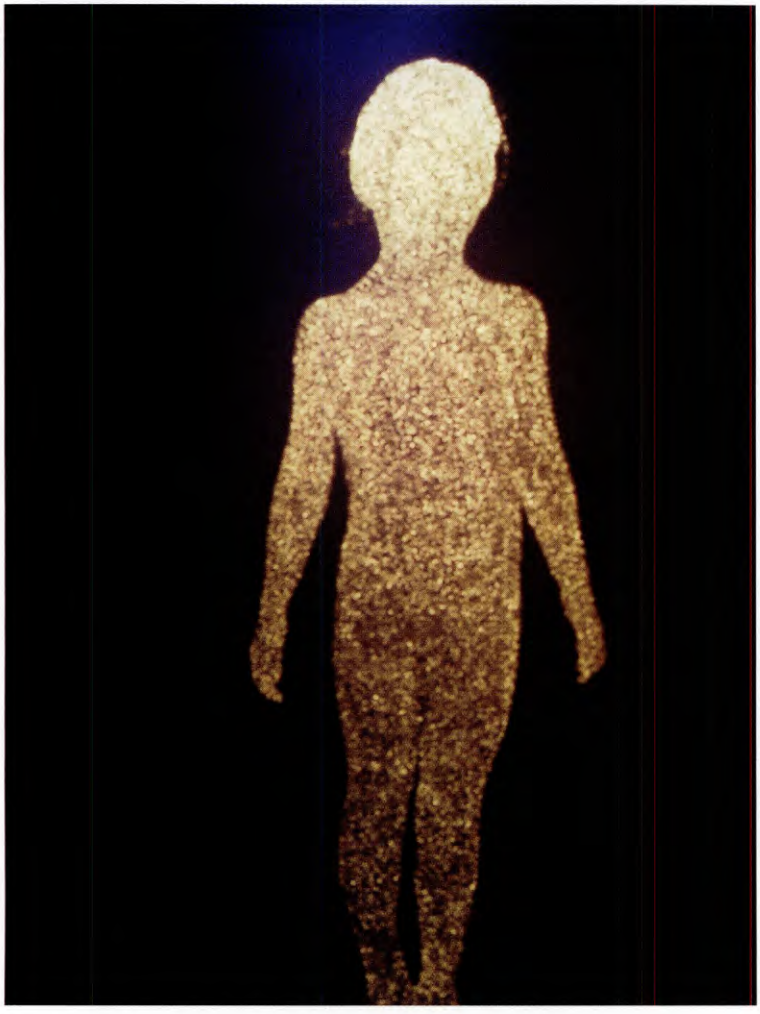
Europeans have recently decided to do something about all the untested chemicals that are ending up in their blood. "The assumption among Americans is, 'If it's on the market, it's okay,'" explained Robert Donkers, an E.U. official who was asked to review Europe's regulatory laws after the baby-product scare. "That fantasy is gone in Europe." Donkers's efforts were the first steps in what became, seven years later, a new E.U. chemical regulation called REACH—Registration, Evaluation and Authorisation of Chemicals. REACH amounts to a revolution in how chemicals are managed, and in how production decisions around the world will be made from now on. Regulations set by the most powerful countries have quickly become, through trade, the international standard. And the European Union, with a market of 480 million people stretching across twenty-seven countries, is now significantly larger than the United States in both population and wealth; Europe's gross national product surged past that of the United States in 2005, and the gap increased when two more countries joined the E.U. earlier this year. The E.U. is now the most significant trading partner for every continent except Australia. The ripple effects from this shift in economic power have been one of the great untold stories of the new century.

Indeed, Europe is now compelling other nations' manufacturers to conform to regulations that are far more protective of people's health than those in the United States. Europe has emerged not only as the world's leading economic power but also as one of its moral leaders. Those roles were once filled by the United States.

When TSCA took effect in the late 1970s, the United States was seen as a pioneer of health and environmental regulation. The Environmental Protection Agency had been established only a few years before, and the government had recently set standards for fuel economy, hazardous-waste disposal, and many other factors

Photograph from the Guest series by Christopher Bucklow.
Courtesy the artist and Paul Kasmin Gallery, New York City

affecting the country's air and water quality. Currently, some 42 billion pounds of chemicals are produced in or brought to America each day, but because of TSCA exemptions, fewer than 200 of all the chemicals on the market have ever undergone any serious risk assessments. Among the 62,000 chemicals the act excused from testing or review were thousands of highly toxic substances, such as ethyl benzene, a widely used industrial solvent suspected of being a potent neurotoxin; whole families of synthetic plastics that are potential carcinogens and endocrine disrupters; and



numerous other chemicals for which there was little or no information.

The EPA is actually allowed to place restrictions on the chemicals grandfathered onto the market if the substances present an "unreasonable risk to human health." In order to demonstrate this risk, however, the agency must surmount tremendous legal and administrative obstacles. The EPA is required to weigh the "costs to industry" of any regulation, and it is obliged to impose restrictions that are the "least burdensome" to chemical manufacturers. According to a 2005 Government Accountability Office analysis, the EPA relies too heavily on industry test data when making safety assessments and allows companies to keep critical data from the public through "indiscriminate" claims that information is proprietary. Even for those few new chemicals brought to market after TSCA, the screening record is not reassuring. Ninety days before commercial-scale production of a chemical begins, manufacturers are required to provide the EPA with all exposure and toxicity data. Theoretically, this information enables the agency to determine whether regulatory action is warranted before chemicals hit the market. But according to the EPA's own figures, 85 percent of the notifications submitted contain no health data.

One result of this industry-friendly screening is that the EPA has banned only five chemicals since its inception in 1970. For a brief time the banned list included a sixth substance: asbestos. In 1989, the EPA prohibited nearly all uses of asbestos, which it classified as a "known carcinogen." The chemical industry challenged the agency, however, and in 1990 a federal court vacated the ban, asserting that the EPA had neither met TSCA's requirement that the conclusive dangers of the chemical should exceed its perceived usefulness nor demonstrated that the ban was the "least burdensome alternative" for eliminating the "unreasonable risk" of exposure. The EPA has not acted to ban a chemical since that decision, even though other countries have outlawed asbestos and numerous toxins that are still in use in the United States. (Since 2004, the E.U. has banned entire categories of hazardous chemicals from use in cosmetics, toys, electronics, and other consumer goods.) By making it easier to hang on to old chemicals than to develop new ones, TSCA provides no incentive for manufacturers to create less toxic alternatives. The absence of even minimal toxicity data insulates the industry from the normal supply-demand dynamic of the market; consumers, in other words, have no means of expressing their potential preference for a less toxic substitute.

Chemical companies have spent lavishly to preserve these lax standards. Since 1996, the industry has contributed $47 million to federal election campaigns, and it pays about $30 million each year to lobbyists in Washington. Lynn Goldman, who served as assistant administrator for toxic substances at the EPA from 1993 to 1998, told me that she and her colleagues knew TSCA was largely ineffectual. "There were thousands of chemicals out there, and we didn't know what they were. We weren't able to get the data, weren't able to assess the risks, nothing." Goldman recalls a party held in Washington to commemorate TSCA's twentieth anniversary.

Photograph of the artist's daughter, Beatrix, age four, from the Guest series by Christopher Bucklow. Courtesy the artist and Paul Kasmin Gallery, New York City

"Someone from the chemical industry got up to salute TSCA and said, 'This is the perfect statute. I wish every law could be like TSCA.'"

The primary target of Europe's new chemical regulation is the more than 60,000 compounds TSCA allowed to stay on the market without testing. Under REACH, these chemicals will have to be registered, evaluated for toxicity, and authorized before being permitted to remain in use. Fifteen hundred chemicals are expected to be placed on a 2008 list of "substances of very high concern." These toxins, which are known to cause cancer, alter genes, and affect fertility, will be the first to be removed from the market unless producers are able to prove that they can be "adequately controlled." In addition to assessing chemicals in their raw form, REACH also extends to the endless array of consumer goods that utilize these compounds; thus, tens of thousands of "downstream users," from construction companies to tennis-shoe manufacturers and fashion houses, will be forced to find out and report what chemicals are in their products and what effects they have on human health and the environment.

By the end of 2008, the first sets of risk data are to be submitted to the E.U. Manufacturers will then have ten more years to complete what amounts to a scientific cataloguing of the chemical makeup of the global economy. Whereas U.S. regulators are forced to find scientifically improbable definitive evidence of toxic exposure before acting, REACH acts on the basis of precaution. European authorities consider the inherent toxicity of a substance and, based on an accumulation of evidence, determine whether its potential to cause harm is great enough to remove it from circulation. Unlike TSCA, REACH places the burden of proof on manufacturers, who must demonstrate that their chemicals can be used safely. The law also proposes to drastically limit the amount of health-related data that companies can claim as proprietary.

Critics of stricter chemical regulations have long contended that the price of compliance would be far too steep. But the E.U. estimated that REACH would cost European chemical manufacturers about $4 billion over fourteen years—a figure that amounts to less than 1 percent of their combined yearly revenue. The E.U. further calculated that these expenses would be repaid many times over by the resulting health benefits. According to their figures, REACH would prevent some 4,500 occupational cancer cases each year and reduce European health-care costs from ailments related to chemical exposure by $69 billion over the next three decades. Moreover, by establishing what will be the first open, actually free market in chemicals, in which informed consumers will be able to make decisions as to what risks they are willing to take, REACH promotes new research into the development of safer chemicals. Chemists have already come up with substitutes for some of the most problematic toxic chemicals on the market, and the E.U. estimates that its environmental initiatives have spawned billions of dollars in "green" industries and technologies.

U.S. companies could be put at a serious competitive disadvantage if they do not acknowledge the changes taking place across the Atlantic. Americans are already losing ground to Europeans in the chemical business, having slipped in the past decade from a trade surplus with European manufacturers to a more than $28 billion deficit. That deficit promises to increase as environmentally aware consumers are given the opportunity to choose between European goods with chemicals that have undergone toxicity screening and American goods with unscreened chemicals. Because American companies interested in exporting to the E.U. will also have to supply toxicity data to the European authorities, REACH does present opportunities for U.S. consumers. Not only will these chemicals be subject to their first-ever health- and environmental-impact review but the findings will then be available on the European Chemical Agency's website. At that point, U.S. consumers may no longer choose to use untested American goods.

REACH'S PRIMARY TARGET IS THE 62,000 CHEMICALS THE U.S. HAS ALLOWED TO STAY ON THE MARKET WITHOUT TESTING OR REVIEW

The American public, along with the American media, has so far been mostly oblivious to the new chemical regulations coming out of Europe. The Bush Administration and U.S. manufacturers, however, have been fixated on it for years. REACH is far more than just another foreign ban of a specific chemical with which U.S. industry will have to contend; it strikes at the fundamental belief that the United States decides what can and cannot be contained in the goods sold all over the world. So as REACH was being debated in the European Parliament from 2003 to 2006, the U.S. government and the nation's industries teamed up to undertake an unprecedented international lobbying effort to kill or radically weaken the proposal.

The assault came from an assortment of government and industry offices. A memo that circulated at the State Department's Bureau of European and Eurasian Affairs denounced REACH as too "costly, burdensome, and complex" for industry to follow. If chemicals were put through

the rigors of review, a Commerce Department brief warned, "hundreds of thousands of Americans could be thrown out of their jobs." U.S. Trade Representative Robert Zoellick submitted a protest to the World Trade Organization asserting that REACH amounted to a "non-tariff" barrier to foreign exporters. A delegation of State Department officials joined two Dow Chemical executives in Athens to lobby the Greeks, who then held the presidency of the European Union. Colin Powell himself sent out a seven-page cable to U.S. embassies throughout the world claiming that REACH "could present obstacles to trade" and cost American chemical producers tens of billions of dollars in lost exports. At the same time, Washington sent emissaries to such new E.U. members as Hungary, Poland, Estonia, and the Czech Republic—formerly Communist countries where environmental consciousness was far less developed than in Western Europe—in an effort to peel off support within the E.U. by claiming that REACH would hurt European firms competing in foreign markets. The State Department also recruited a coalition of allies to oppose REACH from countries heavily reliant on exports; pleas went out to Brazil, India, Japan, Malaysia, South Africa, and others to develop a "coordinated outreach" strategy among "E.U. trading partners." In E.U. parliamentary hearings on REACH that I attended, I was able to identify lobbyists not only for the U.S. and European chemical industries but also for such downstream chemical users as cement, automobile, textile, and pharmaceutical companies. The U.S. lobbying effort amounted to an historic intrusion into European affairs. Robert Donkers, who in 2003 was stationed in the United States to explain REACH to Americans, invited me to consider the reverse scenario: European officials descending on Washington to lobby against a bill being considered in Congress. "It wouldn't be tolerated," he said. "We wouldn't last ten minutes!"

OUR GOVERNMENT REVEALED ONCE AGAIN THAT IT PUTS BUSINESS INTERESTS AHEAD OF THE SAFETY OF ITS OWN CITIZENS

By early 2006, REACH had already undergone a rewrite by the European Commission and had passed its first reading in the parliament. Nearly a thousand amendments had been voted on and consolidated. Environmentalists in Europe felt the standards had already been weakened in significant ways. Priority had been put on "high-volume chemicals" produced in excess of a thousand tons a year, with diminishing data requirements as the volume declined; broad exemptions were issued for certain plastics. But REACH still retained its core principles: that thousands of existing chemicals would be reviewed for their toxicity, that the data from those reviews would be made public, and that responsibility for demonstrating a chemical's safety would rest with the manufacturers.

In Washington, however, President Bush signaled that the struggle was far from over. He sent C. Boyden Gray to Brussels in February as the new U.S. ambassador to the E.U. A veteran Republican operative and an heir to the R. J. Reynolds tobacco fortune, Gray had spent a career in and out of government rewriting the rules of environmental oversight to reduce the burden on business. As general counsel to the first President Bush, he helped transform how the EPA and other federal agencies were managed so that cost-benefit analyses would be given precedence over risk-based decisions. "This is the beast we have confined and tamed," he told me, referring to his success in limiting U.S. regulatory laws.

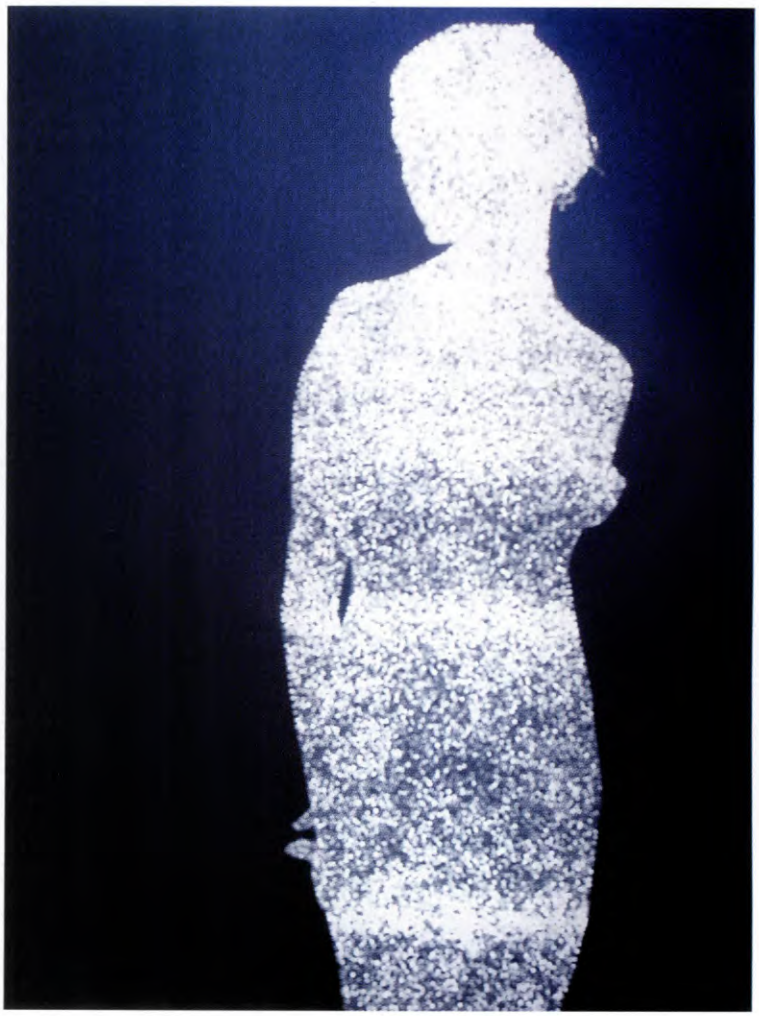
One of Gray's first public undertakings as ambassador began at AmCham E.U., an affiliate of the U.S. Chamber of Commerce in Brussels. AmCham E.U. lobbies the E.U. on behalf of 140 U.S. companies, including Apple, Boeing, Dow, DuPont, General Motors, and McDonald's. Environmental policies are one of their top concerns. In June 2006, Gray orchestrated a joint press release, from the United States and twelve other countries, that objected to REACH's hazard-based system for assessing risks and called for weakening its registration requirements. That press release, it turns out, was written at the offices of AmCham E.U. and sent from the U.S. Mission in Brussels. One morning that June, I received a leaked copy of the original draft, which, thanks to Microsoft tracking software, included the editorial changes that were written into the document as it made its way through various readers. Where AmCham E.U.'s address had once been now ran the imprimatur of the United States Mission to the European Union. This edit and others offered a rare glimpse into the routine merging of the U.S. government with American corporations. When U.S. Representative Henry Waxman conducted an investigation into the Bush Administration's efforts to undermine REACH, he unearthed dozens of pages of diplomatic cable traffic showing how the government had coordinated its efforts with those of industry. Talking points, lobbying junkets, statistics (many of them proven inaccurate) had been shared. Instead of considering these reforms on their merits, or revising its own failed regulations, our government demonstrated once again that it puts business interests ahead of the safety of its own—and the world's—citizens.

The European Parliament finally voted to approve REACH on December 13, 2006. By February, the U.S. Department of Commerce,

which had lobbied so vigorously against the proposed regulation, was hosting a seminar in Charlotte, North Carolina, to explain to companies doing business in Europe how to comply with the law intended to protect Europeans. It was the first of a series of sessions to be held with American businesses across the country. In the same month, representatives from the Pentagon, defense contractors, U.S. scientists, and California state officials met in Monterey to discuss the effects REACH would have on military hardware being used on U.S. bases in Europe. Several major American electronics and cosmetics companies are already reformulating their products to meet the new E.U. standards. And DuPont, Dow, and other large U.S. chemical manufacturers are busy preparing toxicity data to submit to the E.U. In many instances, smaller American chemical companies and most downstream manufacturers that utilize chemicals will have to purchase this data from the big corporations, which now stand to profit from the REACH strictures.

Many American states, tired of waiting for direction from Washington, are now looking to Brussels for ideas on environmental reform. California, Massachusetts, and New York have begun exploring the possibility of implementing elements of REACH in their state regulations; Maine and Washington have cited Europe's precedent in their efforts to ban particular chemicals, such as those poly-brominated flame retardants found in children's sleepwear. Elsewhere in the world, governments have worked to bring their own policies into line with REACH. The Chinese Ministry of Commerce had REACH translated into Mandarin within days of its passage. European consultants also traveled to China to show industry and government officials there what exporters will have to do to abide by the chemical regulations. The Europeans were willing to aid their competitors in China, with whom they have a significant trade deficit, because just about anything made in Chinese factories can end up in the hands of Europeans. To protect its population, Europe is working backward, toward the potential sources of future chemical contamination. European consultants also fanned out to Brazil, Mexico, South Africa, South Korea, Thailand, and other major players in the world economy. And in the upcoming year, Robert Donkers, who had long tried to forewarn American businesses of this tectonic shift in environmental influence, is expected to be transferred to India, where he will be advising that up-and-coming economic powerhouse.

The European Union is demanding that its industries take responsibility for the collateral health damages that its products may cause, and it is doing so with innovations that are leading the world. In the process, American consumers are being put in a position that would have been unimaginable as little as a decade ago. Shortly after the EPA was founded, the United States imposed domestic restrictions on some of the most dangerous pesticides and other chemicals, and U.S. companies responded by exporting millions of pounds of these toxins to Third World countries, where such regulations didn't exist. The irony is that our nation's steady retreat from environmental leadership means it may soon become a dumping ground for chemicals deemed too



hazardous by more progressive countries. Meanwhile, Americans may also be the incidental beneficiaries of protective standards created by the government of a foreign country in which they have no say. In recent years the United States has opposed a multitude of environmental and human-rights initiatives that have gained international legitimacy without its participation. Indeed, this country is no longer where it likes to imagine itself to be—at the axis of influence around which the rest of the world revolves. ■

Photograph from the Guest series by Christopher Bucklow.
Courtesy the artist and Wilkinson Gallery, London