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*111 CONSUMER LIABILITY FOR HARMS LINKED TO PURCHASES

While the problem of negative externalities has long been recognized by environmental law, legal responses have uniformly focused on producer behavior. There is growing recognition, however, that consumption also contributes significantly to climate change and other forms of environmental degradation in ways that are not fully reflected in the prices of products. A major reason is that the harms from consumption develop many years after the consumer makes a purchase. But in the future, a virtually cashless society reliant on electronic payments will record the purchases of consumers. Technological developments will set the stage for the viability of consumers as class action defendants who could be held liable for societal harms that subsequently develop as a result of their purchases. Today, consumer class action plaintiffs discover they are entitled to portions of class action verdicts; in the future, consumer class action defendants will learn they must pay plaintiffs, including state governments suing on the basis of public nuisance, for the damages resulting from their purchases. Consumers, of course, would have to be put on notice, perhaps through a labeling system, that they are assuming liability for future harms. By taking advantage of technological developments that enable a cashless society, it will become possible to sue consumers who purchase goods that contribute to environmental degradation and other social harms.

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***112 INTRODUCTION**

In the aftermath of the Deepwater Horizon oil spill, political cartoons depicted American consumers filling their SUVs with gasoline while, at the same time, angrily denouncing President Obama or BP CEO Tony Hayward. These cartoons evinced a sentiment that American consumers are hooked on oil and therefore bear some degree of responsibility for the spill. By generating high levels of demand for gasoline, one could argue that the American consumer contributed to excessive risk-taking, corner-cutting, and rubber-stamping by BP, Transocean, Halliburton, the federal government, and state governments in the lead-up to the Deepwater Horizon explosion. The oil spill was not purely the result of reckless overreaching by the oil companies and ineptitude by apathetic regulators, although that was certainly a major part of the story. Relentless and insatiable consumer demand for oil also contributed to the tragedy in the Gulf of Mexico.

This storyline is an example that could be used to make a more general claim: consumers should pay something approaching the full cost of their purchases, which includes the harms that develop from those purchases in the future. Yet such a claim, while perhaps theoretically justifiable, seems utterly infeasible in practice: How could we (1) ascertain the purchases of particular consumers; (2) trace those purchases through the causal chain regimented by tort law to identifiable damages requiring compensation; and (3) collect damages from individual consumers? Perhaps more importantly, such questions presuppose a political and societal appetite for suing consumers. And many readers, in response to even one example such as this, may have already developed feelings of uneasiness and formed a series of rebuttals: (1) as long as someone can afford to buy something, then she should be able to buy it; (2) BP, Halliburton, Minerals Management Service, and others were at fault for the Gulf oil spill and they, rather than innocent consumers, should pay; (3) the laws of supply and demand result in an appropriate price for oil and gasoline; (4) SUV drivers ***113** already have to buy more gasoline and therefore deservedly spend more on gasoline; and (5) practically speaking, even if SUV drivers bear more responsibility for energy demand than drivers of more fuel-efficient vehicles, how on earth is our society going to hold them to account when problems develop after their purchase? In other words, even if there may be some truth to the political cartoons that criticized SUV drivers, what can we possibly do about it?

This Essay will address these challenges and questions by first showing that the prices consumers pay for goods do not fully internalize the broader social harms that result from purchases. Consumption at an unprecedented rate-- notwithstanding the Great Recession--might not be societally problematic if the damage were purely contained to the pocketbook (or the waistline) of individual consumers. However, there is increasing evidence that consumption inflicts damage on the environment on a scale never before witnessed in history. Beyond the broad systemic effects of deforestation, wetlands destruction, generation of persistent and bioaccumulative chemicals, and global climate change, one way to conceptualize the damage is to look at the destruction necessary to make even small consumer goods. For example, producing a single cotton T-shirt involves the use of one-third of a pound of pesticides and four pounds of fossil fuel, and producing the amount of gold in a wedding band generates about three tons of toxic mining waste.[1] This is not to suggest that we should go without T-shirts or wedding bands, but merely to provide a sense of the damage that occurs as the result of consumption.

Perhaps above all else, global climate change will continue to lead to extreme weather events and physical changes to the Earth's landscape that will result in significant harm. Estimates suggest that climate change is already responsible for tens of thousands of deaths and billions of dollars in property damage, and these figures are expected to increase exponentially in the future.[2] While the link between Hurricane Katrina and climate change may be subject to debate, the 2003 heat wave in Europe that killed 35,000 people,[3] as well as recent flooding in Pakistan that killed more than 1,700 people, are two examples that, by all objective scientific accounts, are linked to climate change.[4]

If consumers begin to recognize the carbon footprints, toxic footprints, and other environmental impacts that products leave behind, and are forced to come to this realization as the result of the possibility that they will have to pay more for their purchases, then perhaps certain forms of consumption will be reduced. Such an approach, of course, looks at tort law through

the lens of its capacity for deterrence and risk-spreading, rather than simply as a mechanism for resolving private disputes. Tort law, in other words, has the capacity to ***114** function as an explicit policy tool, even if this functionality may be limited in numerous ways.

From a legal perspective, how have we historically addressed consumption? In spite of the inherent linkage between consumption and environmental degradation, consumption laws are virtually nonexistent. While the government may tax certain forms of consumption such as cigarettes or soda, or ban certain products such as French fries with trans fats, consumption is generally an unfettered activity cabined only by consumers' spending capacity. Even then, mechanisms such as credit cards and personal bankruptcy protections have developed to allow consumers to spend money they may not have. As a society, we tend to recognize that certain human needs must be addressed, and human wants may be subject to producer manipulation through practices such as advertising and planned obsolescence. Consumers, on the other hand, are construed as the innocent participants in the economic system because the overarching assumption is that the pricing mechanism takes into account the benefits and costs on all sides of a transaction. More importantly, from a practical and a political perspective, in an American economy in which nearly 70 percent of GDP is related to consumption of goods and services, consumption is lauded because it promotes economic growth and job development.

In consideration of the positive value judgments that generally attach to consumption, novel legal mechanisms to reduce consumption are scarcely considered. And even when the subject is broached, commentators quickly dismiss the possibility of approaches sounding in tort due to the seeming practical infeasibility of implementation. For example, in the context of suing consumers as contributors to greenhouse gas emissions, Professor Michael Vandenbergh has written:

> [T]he notion that a court action against individuals as polluters could even be brought, much less be brought to a satisfactory conclusion, is hard to envision .... Often thousands or millions of individual polluters will be implicated, as opposed to at most a handful as is often the case for industrial sources. The large number of plaintiffs and defendants casts doubt on the ability of any scheme that requires common law actions to enforce legal rules, whether based on property or liability rules.[5]

This Essay seeks to challenge the idea that suing a multitude of consumers is both a substantive and procedural impossibility. In terms of substance, there is a great deal of evidence that consumers are responsible for increasing harms to the environment--including global climate change and the chemical impacts of consumer products on human health and the environment--that were inconceivable until recently. To be sure, built into any such concept must be the notion of excess: emissions allowances are imperative for consumers, just as they are for manufacturers subject to the Clean Air Act, because we all must emit carbon dioxide in order to survive--not only physiologically, but also in order to engage in basic forms of consumption. In terms of procedures, technological and social ***115** changes are now enabling us to track consumption much more closely than was possible in a market based on cash payments. A class of potential defendants who bought a certain product is no longer a figment of the imagination or an Orwellian nightmare, but a new reality in a cashless society that uses electronic payments and is arguably comfortable with less personal privacy. Soon, with the disappearance of cash, comprehensive records of everything we buy will be available.[6] These comprehensive records from electronic payments will set the stage for the viability of class action defendants who could be held liable for increased costs of their purchases associated with harms that develop down the road. Just as today, class action plaintiffs find out they are eligible to collect portions of class action verdicts, in the future, class action defendants will find out that they have to pay plaintiffs for damages that developed as the result of their purchases.

To be sure, awarding people money is easier than getting money from them. Just as mailing parking tickets to people does not always result in cash collection, mailing them a statement from a court may result in nonpayment. The proposal in this Essay therefore also relies on a collection system involving the use of the very electronic payment system that will track consumption in the future. Consumers who end up owing more money for their purchases will simply be charged by the courts through the electronic payment system. And, of course, traditional methods to ensure payment, such as wage garnishment and the use of collection agencies, will continue to be options as well.

Fusing substantive realities with procedural necessities leaves us with the conclusion that certain types of consumption are a public nuisance that could be *ex ante* noticed as assumptive of potential liability in the event that demonstrable harm, such as the Gulf oil spill, flows from them in the future. With the government as a plaintiff suing and recovering damages on the basis of public nuisance, it becomes possible to conceive of a liability approach that would, for example, not only bring BP to justice, but also make SUV drivers pay for the damage wrought by the Gulf oil spill. What if consumers were told that they

may have to pay more for what they are buying if, down the road, it turns out that harms in the form of environmental degradation can be traced to their consumption? In the usual spirit of tort law, the hope is that some forms of consumption would be deterred.

***116** This Essay proceeds in four parts. Part I describes the mounting evidence that consumption is an increasingly serious problem that requires legal attention. Part II explains the historical failure of traditional consumption laws to put much more than a dent in a few particular forms of consumption. Part III sets forth the legal proposal: consumers should be held liable for damages linked to their purchases. Finally, Part IV provides responses to the inevitable legal, practical, and ideological challenges such an ambitious proposal will undoubtedly face.

I. THE IMPACTS OF CONSUMPTION

Consumption has the potential to induce a multiplicity of harms, ranging from systemic harms in the form of generalized resource depletion to harms borne largely by the consumer himself in the form of a depleted pocketbook. Consumption represents a transfer of private material from a producer to a consumer through a market trading system that allows people to exchange their labor and capital for goods and services produced by the labor and capital of other people. As a condition precedent to this schematic, property rights must be assigned to resources such as land that are, in the first instance, public. In this sense, there is a fundamental transfer of the public to the private that happens prior to the act of consumption, but that is spurred on, solidified, and exacerbated by the act of consumption. In order to counteract the depletion, we place faith in the market that the "price is right," hoping the consumer pays a price reflecting the cost of production. In describing the work of economists Jeffrey Vincent and Theodore Panayotou, Douglas Kysar and Michael Vandenbergh write:

> The price mechanism is the means by which markets create incentives for new technologies and resource substitution. This mainstream economics approach embodies a vision of limitless frontiers, inexhaustible resources and the unbounded regenerative and absorptive capacities of the earth, and the logical implication of this vision, a primary societal goal of increasing the volume of economic activity as measured by gross domestic product.[7]

Yet it was realized long ago that transactions do not fully internalize the harm to everything that still is, or once was, public--environmental law has long been focused on negative externalities in the form of pollution that damages the air, water, and land. Almost uniformly, environmental law has targeted producers, especially industrial factories. Reining in supply-side malfeasance has done much to reduce conspicuous pollution (e.g., clouds of filth from smokestacks), but the overall problem of environmental degradation continues on a scale never before witnessed in history, perhaps because many environmental problems, in ***117** fact, stem from demand-side-generated negative externalities.[8] Few studies have quantified the environmental harm caused by consumers, but there is growing awareness that problems as diverse as water pollution, global climate change, and chemical exposures from product usage are significantly driven by consumption. The diversity and complexity of the problem explain, in part, why measuring the impact of consumption is a difficult endeavor. While the precise levels of air and water pollutants emitted from a particular factory are relatively easy to ascertain, the studies of consumer behavior face challenges ranging from apportionment (i.e., determining consumer versus producer responsibility for the environmental impacts of a certain product) to consumer differentiation reflective of individual choice (e.g., SUV vs. hybrid car), income level (rich vs. poor), and locale (city vs. suburb vs. small town).

While the measurement challenges are daunting, and, as will be discussed below, will also present considerable impediments to a court seeking to determine damages, concrete determinations of harm are beginning to be formulated. In terms of greenhouse gas emissions, it has been estimated that individual Americans are responsible for 4.1 trillion pounds of carbon dioxide emissions, constituting 32 percent of the estimated 12.7 trillion pounds emitted annually in the United States.[9] The U.S. government estimates that the cost to the environment, human health, and the economy is $21 per ton of carbon dioxide.[10] With Americans each responsible for emitting 20 tons of carbon dioxide per year, that means that each American is responsible for $400 of damage per year. Other studies place the figure at forty-five times the $400 figure. The Economics for Equity and the Environment Network, an umbrella organization of economists who advocate for environmental protection, has calculated that the damage could be as high as $900 per ton, or $18,000 per American per year.

In 1992, the administration of President George H. W. Bush stated that "the American way of life is not up for negotiation."[11] Since that statement was made, much has changed in terms of our awareness of the impacts of the American way of life on

the environment. And perhaps the greatest concern of all is that, if the vast majority of the citizens of China and India adopt anything approximating the American way of life, then the ***118** global environment will be in considerable trouble. The question is whether anything can be done, from a legal perspective, to reduce consumption.

II. CONSUMPTION LAWS

For decades, environmental laws and policies treated the individual consumer as problematic primarily in terms of waste generation. Simple and localized rules and regulations dealt with issues such as highway littering and recycling, with little in the way of governmental peering into household consumption (except perhaps in terms of taxing garbage disposal). More recently, commentators have begun to view individual consumers as polluters in terms of actions beyond waste generation. Driving a car and applying pesticides to a lawn are among the countless behaviors that generate pollution. And more recently still, commentators have pointed out that households contribute tremendously to greenhouse gas emissions and that the purchase and usage of everyday products such as flame retardants and phthalates contribute to ever-increasing levels of chemicals in our environment. The very household consumers who, down the road, may be victims of exposure to these chemicals are the ones contributing to the drastic increase of the chemicals in our environment.

In spite of increasing awareness that consumption habits harm the environment, the general sentiment of policymakers is that individual consumers should not be made to pay for aggregate systemic harm that is linked to individual participation in the market economy. If anything, consumers are viewed as part of the solution rather than the problem--promotion of green consumption is thought to be at least partially curative of the superfluities and harms of consumption, even though this argument presupposes the essentialism of consumption rather than fully considering its profligacy.[12] To be sure, there are occasions when legislators and regulators step in to attempt to modify consumption habits. Usually, these moments involve a tinge of moral disapproval (e.g., taxes on alcohol) or documented negative health effects (e.g., taxes on cigarettes or soda). Admittedly, there have been improvements. For example, the 1980s question of "Paper or plastic?" has given way to the realization that it is possible to bring a reusable bag to the grocery store, even if the realization was assisted by the adoption of a 5-cent tax per plastic bag.[13] On rare occasions, the government has also levied a tax on products in order to improve environmental outcomes, such as the taxation of CFCs and other ozone-depleting substances.[14]

***119** Like legislatures, courts have also been extremely hesitant to inquire into the relationship between consumers and environmental degradation.[15] The general view under tort law and other bodies of law is that consumers are the potential victims of harms perpetrated by companies that make defective products, fail to warn, make misrepresentations, or perpetrate fraud. With the doctrine of *caveat emptor* reflecting the potential for consumers to be harmed sans legal protection, the subsequent development of the law to moderate that doctrine reflects a sentiment that consumers are potential victims of companies. This basis is important because, from the standpoint of cognitive dissonance, it is difficult for the human mind to accept that the victims in one context may be the victimizers in another. The attempt to dispositionalize certain actors is focused on consistency and ambiguity reduction. Similarly, there is a tendency to pinpoint certain culprits to the exclusion of other responsible parties. For example, if environmental law traditionally targets industrial polluters, then the general view becomes one of satisfaction with identification of the central cause of our travails. Malfeasance by some tends to exculpate others, even though they may also be complicit in causing harm.

Environmental law and regulation have tended to focus on the supply side of the equation, and this has arguably corresponded with a decrease in attention to the demand side. For example, in *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council*, the U.S. Supreme Court, considering a National Environmental Policy Act challenge based on the failure of the Atomic Energy Commission to consider energy conservation in an environmental impact statement (EIS), did not find a requirement for a federal agency to consider the option of reducing electricity demand. The Court instead focused solely on the issue of increasing supply through nuclear power development.[16] The Court wrote that agency consideration of demand reduction, even in the midst of the energy crisis of the 1970s, was "an exploration of uncharted territory" and was only a "peripheral" consideration in the context of judicial review of the adequacy of an EIS.[17]

The utilization of tort law to reduce consumption has been the subject of even less consideration (and more derision) than the possibility of agency conduct working to reduce consumption. As even proponents of reining in consumption to reduce environmental degradation suggest, attaching prospective liability to consumers simply strains credulity from a practical perspective and, from a substantive perspective, is anathema to our traditional understanding of the marketplace and individual liberty. Michael Vandenbergh writes, "[A]n attempt to protect against individual environmental harms with

property or liability rules in practice would result in little government intervention to limit those harms, and would represent an implicit risk management decision that the harms caused by individuals do not justify the costs of control."[18] In other words, suing consumers would ***120** simply not be worth it. But there are nascent challenges to this idea, at least in contexts such as copyright infringement. As the users of software applications that illegally download music, movies, and other copyright-protected content become identifiable, copyright holders are beginning to seek certification of defendant classes of these consumers.

Ultimately, environmental law scholar James Salzman states it well: "Why are consumption laws such a weak sibling of production laws? Primarily because issues of sustainable consumption go to the very heart of societal norms such as lifestyle, equity, and cultural identity--issues that cannot easily be resolved in the legislature or the courtroom."[19] Yet, in spite of the general absence of consumption law, there is a growing recognition that environmental problems, especially global climate change, stem in large part from consumption.[20] Because carbon emissions currently correlate strongly with economic activity, the realization that 70 percent of GDP is tied to consumption inevitably leads to the conclusion that consumption must be reduced or modified in order to avoid climatological disaster.[21] With this specter in mind (as well as the massive hurdles related to our essential understanding of ourselves and our society), this Essay will now describe how to use tort law to sue consumers who buy products that contribute to environmental degradation and other social harms.

III. DEFINING THE TORT BY GROUNDING IT IN PUBLIC NUISANCE

In the future, our social, and hence legislative and judicial, willingness to sue consumers for the damage wrought by their purchases may well reach a point of obviousness. For example, on the supply side of the equation, when workers' compensation statutes were enacted in the early twentieth century, they represented the most radical tort reform in the preceding 300 years.[22] The primary theoretical rationale for workers' compensation statutes was that "losses from injuries to workers represented a 'cost' of enterprise" and companies should be forced to internalize that cost.[23] In the intervening years, tort law has continued to explore the appropriate limits of cost internalization. Francis Bohlen, the reporter for the first Restatement of Torts, famously argued for the application of "benefit theory" to torts, suggesting that when an action is voluntarily assumed and incurs benefit to a party, that party has a duty to compensate the third-party victims of the action.[24] ***121** Consumption, at least beyond certain base levels, is certainly voluntary--there is no gun to the head of a shopper. Consumers also, of course, receive a benefit from their purchases: microeconomic theory is partly based on the observation that the benefits consumers receive exceed the price they pay.

The question, therefore, is whether benefit theory should also apply to consumption, such that the harms to third parties from consumption must be internalized in the price. From a theoretical perspective, there is likely to be broad-based support for such an idea, but the practical legal manifestation of the idea is less obvious. Just as workers' compensation statutes were at one time transformational and are now mundane, perhaps consumption statutes will one day gain similar footing. But we are not there yet. Wholesale reformation of tort law to include "consumption statutes" that would undoubtedly rely on contribution theory, rather than causation, and embracing assertive judicial decision-making akin to that once required in the toxic tort context, is probably a relatively fantastical dream (or nightmare), at least in the United States in 2012.

Therefore, one way to structure the proposed tort is to ground it in the doctrine of public nuisance. A public nuisance is defined as "an unreasonable interference with a right common to the general public."[25] What exactly is the public right that consumption interferes with? In the description of a public nuisance, the Restatement states that "public rights" may include public health, public safety, public peace, public comfort, or public convenience.[26] If consumption, for example, leads to global climate change that is truly catastrophic, it could be compellingly argued that consumption infringes all of these examples of public rights. Droughts and heat waves could lead to disease and death that compromise public health, or, as we observed with the impact of Hurricane Katrina on New Orleans, rising sea levels or hurricanes that flood cities could lead to a disruption of all of these public rights. And there are countless examples of other infringements of public rights, many of which relate to public health: while it may be difficult to predict the long-term effects of endocrine disrupters and pesticides, it is certainly possible that damage to public health will develop in the future in a provable and ascertainable way. The proposed tort would serve to shift liability to individual consumers for future harms that may currently be speculative, but not so speculative as to preclude the development of a labeling system to provide notice to consumers that they are assuming liability.

What about the importance of giving consumers notice that their purchases could subject them to liability for future harms

that are linked to their purchases? The Restatement emphasizes the importance of the potential defendant knowing or having reason to know that his conduct has a significant effect upon the public right. Clearly then, this proposed version of public nuisance would have to put consumers on actual or constructive notice that their purchase of certain products may be traceable to the violation of a public right. Ideally, there would be a labeling system, based on carbon footprints, toxic footprints, or other environmental impacts, that would serve the function of providing notice to ***122** consumers that the products they are purchasing could subject them to future liability. Of course, labeling systems may not be imperative if information flows about products continue to grow and develop through Internet usage or otherwise.[27] And surely, it strains credulity for recent SUV purchasers to argue that they did not realize that their purchases would have an unnecessarily high amount of greenhouse gas emissions--miles-per-gallon standards have been in place for decades. Nevertheless, actual notice of the assumption of liability is certainly easier to demonstrate than constructive notice, and for this reason, a new labeling system will have to develop in order to form part of the basis for the proposed tort.

The labeling regime could be immensely complex in nuance and detail--consider, for example, the background assumptions and evidence that would go into determining that automobiles below certain miles-per-gallon thresholds and household products with certain toxic footprints require a consumer liability label. Or it could not. In other words, the government could broadly announce a liability regime and place labels on a variety of goods and then leave it to the judicial system to determine the sufficiency of actual or constructive notice once harms develop. The point is simply that a government seeking to sue on the basis of public nuisance would be required to provide notice to the defendants that they are assuming liability.

Consistent with recent thinking surrounding nuisance, the proposed tort would be a strict liability tort.[28] Prescribed duties of care applicable in a negligence context would not relieve a consumer from liability. As Jonathan Zasloff, describing public nuisance, states, the "plain language of the Restatement itself tilts toward strict liability, as it seems to reject a balancing test."[29] The Restatement disjunctively sets forth three elements, each of which is evidence that interference with a public right is unreasonable: (1) the degree of interference with the public right; (2) proscription by law; and (3) the continuing nature of the conduct and its permanent effects.[30] Facts and circumstances matter less than irrefutable realities: the meaning of "unreasonableness" is based on clear criteria rather than an assessment of the ordinary standard of care for a given situation. The criterion in the instant context would simply be a legislative determination that the purchase of certain products would subject the purchaser to liability in connection with harms that develop in the future.

Whenever a liability rule is established, it sets in motion a series of responses. A liability rule effectively increases the price of a good. The price increases based on the ***123** possibility of future damages payments. Companies seeking to continue to sell goods at pre-liability prices could indemnify consumers for the future costs that develop from future litigation. A new private insurance market could also develop for consumers seeking to protect themselves from future expenses generated by their purchases. Some would choose not to buy goods with significant liability profiles.

How would this tort work in practice? Two examples, based on global climate change and lead paint, will help to illustrate how the public nuisance claims against industrial defendants have worked in the past, and how they may work better in the future with consumers as defendants.

Global Climate Change and Lead Paint

Global climate change is one example of a general type of damage (with particularized manifestations such as flooding, hurricanes, droughts, and heat waves) that could be addressed by the proposed tort. Public nuisance lawsuits filed by states against energy companies are generally faltering, but the application of the doctrine to global climate change has received at least some traction. In *Connecticut v. American Electric Power Co.*, the U.S. Court of Appeals for the Second Circuit ruled in favor of the states, environmental groups, and New York City seeking a reduction in the greenhouse gas emissions of several of the country's largest coal-fired utilities. The claim was based on the notion that global climate change is a public nuisance because it adversely impacts public health (e.g., deaths and asthma complications from heat waves), water resources, coastal areas, agriculture, water levels of the Great Lakes, and flora and fauna.[31] However, the U.S. Supreme Court overturned the Second Circuit, holding that the Clean Air Act combined with EPA action to regulate greenhouse gas emissions in the wake of *Massachusetts v. EPA*[32] displaced the federal common law in this area.[33] The Supreme Court left the door open, however, for the survival of state common law nuisance claims in the area of climate change.

It could be argued that a problem with the plaintiffs' claim was that it placed the blame for global climate change on the

shoulders of power companies. From a political perspective, the power companies have armies of lobbyists and political influencers. From a practical perspective, there is a sense of disproportionateness and scapegoating associated with suing power suppliers. We all consume power, some more than others. There may certainly be a heightened sense of culpability associated with coal-fired power plants, but there is also a sense that a broader cohort of defendants is responsible. In concrete terms, what are we getting at here? One specific application of the proposed tort could be, for example, for it to apply to people who purchase extremely energy-inefficient products such as SUVs or wide-screen HDTVs. SUV purchasers, or, more fairly, purchasers of automobiles after a certain point in time that averaged, for example, less than fifteen miles ***124** per gallon, could then find themselves liable for a certain sum representing an amount over and above the purchase price of the automobile. The tort would not prohibit the purchase of an SUV or HDTV--it would simply require consumers to accept liability for the harms created by their purchase, thereby increasing the price of certain products.

Likewise, in the public nuisance actions against lead paint companies, there is a clear sense that the lead paint companies committed an injustice, but what about the consumers who painted their houses with lead paint? While the degree of consumer obliviousness in the middle of the twentieth century may have been understandable in light of lead paint companies' withholding information about lead and an overall lack of information flows in a non-Internet age, there is also a sense that consumers could have done better,[34] and certainly could do better today.

***125** We are only deluding ourselves if we think that our society has progressed beyond the sort of chemical harm that was created by products such as lead paint. Today, for example, there is a widespread understanding that lawn pesticides inflict damage on the environment, as evidenced by the posting of warning signs in front yards after pesticides are applied. Yet how many people continue to apply pesticides to their lawns? If lawn pesticide applications rise to the level of public nuisance, are the pesticide manufacturers and applicators the only possible defendants? As yet, the possibility of a neighbor suing a neighbor who applies pesticides on the basis of private nuisance, let alone a state government suing on the basis of public nuisance, is a figment of the imagination. The best we can hope for, it seems, are "neighbor notification" laws that let someone know when his neighbor is applying pesticides.[35]

While we may struggle with the notion that individuals who painted their homes with lead paint in the 1940s should now be held accountable, perhaps our struggle with this proposition relates to its impracticality (how could we track down those homeowners and would they be alive and solvent?) rather than its inconsistency with our notions of justice. After all, states routinely hold landlords accountable for damages to tenants caused by lead paint. Part of this accountability may stem from the recognition that landlords have information about the dangers of lead paint and are well positioned to remove those dangers, but homeowners who applied the lead paint clearly could have and should have known more about what they were doing, especially if they had been provided with notice that they were assuming liability for harms that would develop down the road.

IV. HURDLES THE TORT MUST OVERCOME

A. Harm and Causality

It must be conceded that, from an *ex ante* perspective, the specific harms that will result from consumption are difficult to predict. For example, the aggregate impact of everyday product consumption creates the possibility of significant chemical exposure. But because individual products may result in little exposure and involve relatively innocuous chemicals (at least in isolation on a chemical-by-chemical basis), significant and specific harm remains speculative, both because the harms themselves have not yet developed and because the source of the harms is not clear. With regard to the former, we do not know for sure what future disasters will occur as the result of global climate change. With regard to the latter, some argue that exposure to chemicals in everyday products may contribute to health problems ranging from asthma to autism, but in many cases the connection is hard to prove.

The sense that exists with many harms is that they may affect all of us to one degree or another, with disproportionate effects on some. In a broad sense, the environment is degraded and public health is compromised. But how can we establish what this harm will ***126** be? The most plausible method is to wait for the harms to occur. From a public policy perspective, this is only satisfactory if the announcement of a new liability regime has the effect of preventatively modifying behavior to reduce the likelihood of possible harms in the future. Waiting for harms is of course something we do not want to do, but by

announcing a rule that consumers will have to pay for their fair share of future harms, consumers will be less likely to buy products that could cause harms. The embedded hope is that this more conscious and rational form of demand will force producers to modify products so that they become less likely to cause future harms.

If we assume that, in spite of the deterrent effect of the tort, harms do occur, we would have to establish a causal linkage between the product purchased and the harm. There are two ways to understand harm in this context. One is that the harm is the creation of risk. This risk, for example, may be global climate change itself or the existence of lead-paint-riddled houses. The other way to understand harm is as the specific injury that may emanate outward from the risk. To continue the examples, the harm may be damage from a hurricane that only developed because of global climate change, or a child never achieving his full potential because he was exposed to lead paint in his community. This second category of harm (i.e., specific injury) is one step further removed from the original act than the first category, and commentators have pointed out that the causality standards usually required by tort law are problematic in these contexts, especially when they are related to climate change. For example, in describing an attempt to link a monsoon to climate change, and in turn to greenhouse gas emissions in the United States, Professors Eric Posner and Cass Sunstein write:

> [I]t may well be impossible to show that greenhouse gas emissions in the United States "caused" the flooding, in the sense that they were a necessary and sufficient condition, and difficult even to show that they even contributed to it. If the flooding was in a probabilistic sense the result of greenhouse gas activities around the world, its likelihood was also increased by complex natural phenomena that are poorly understood. And to the extent that the United States was involved, much of the contribution was probably due to people who died years ago.[36]

As this statement illustrates, even sophisticated commentators have difficulty accepting the full ramifications of the meaning of "contribution" in a tort context. If it is determined that a particular action contributed to a harm, then speculation on other possible contributors is irrelevant, except perhaps if the determination of damages seeks some degree of relationship to the overall harm. In other words, liability need not, and should not, in the interest of a holistic concept of fairness, be joint and several, but that does not imply that liability is nonexistent. Liability can be apportioned, even if bluntly.

Public nuisance doctrine in some jurisdictions already recognizes that liability does not require specific causal identification, perhaps implying that liability is limited to ***127** proportional contribution to the harm. Conventional proximate causality involving a tight linkage between an act and an injury will be difficult to satisfy in the consumption context, and for that reason, the clearest path to a plausible and coherent tort would be to incorporate risk contribution theory. In the litigation surrounding diethylstilbestrol (DES),[37] including the *Hymowitz v. Eli Lilly*[38] and *Collins v. Eli Lilly* cases,[39] courts apportioned liability based on the proportion of the market a manufacturer held when the plaintiff was injured, sometimes even if that market did not strictly overlap with a particular regional geography. Wisconsin extended the theory beyond DES in 2005, applying the doctrine to lead paint in *Thomas v. Mallet*.[40] Although this decision was eventually overturned in federal court, perhaps, with time, the notion of risk contribution will gain additional judicial traction.

Risk contribution, as currently understood, is a variant of the market-share theory of liability. But what if markets were understood to involve not only producers, but also consumers? Harper and James have written in *The Law of Torts*, "Where several defendants, acting independently, contribute to the creation of a nuisance, each is liable only for that part of the total nuisance that represents his contribution and it may be hard or even impossible to prove the measure of this amount."[41]

The issue of damages will be addressed below, but for purposes of determining contribution to the risk, the purchase of a product could be deemed a strict liability offense, just as the production of a good in a particular market creates liability under risk contribution theory as currently understood. If the injury were deemed to be caused by the aggregate impact of consumption of certain products, then the individual act of purchasing a particular product must be understood to contribute in a roughly proportional way to the aggregate harm. Continuing the lead paint example, if a consumer purchased lead paint and it were later determined that the existence of lead paint constituted a public nuisance, then the act of purchasing lead paint could be construed as an unreasonable interference with the public right to live in a world without lead paint. Issues related to tracing the diminution in a child's IQ to lead paint purchased by a particular consumer would fall away. The only relevant issue would be whether the purchase of the lead paint contributed to the public nuisance.

In sum, causal relationships in a tort context are easier to understand when they comport with the linear, sequential directness of cause-effect and stimulus-response schemas. But contribution theory may, in time, gain further credibility in the legal

context as we begin to understand the many factors that lead to given outcomes, and realize that the form of a particular outcome depends on the existence of all of those factors. Viewed ***128** holistically, contribution can become "but for" causation: "but for" the contribution of a given factor, the full effect would not occur. It would be altered in its extent and nature. This construct need not imply a reversion to the path dependency of butterfly effects that lead to changes however minute (or enormous). The construct must operate above a *de minimis* level and instead at a plausibility level that rejects hyper-attenuated linkages and rests comfortably with an underlying sense of fairness and correctness that attributes fault in realistic ways. Fault will not disappear. The proposed tort becomes one of strict liability (where the purchase of a particular good results in liability) and it must be established, through legislative action, that certain purchases fit within the meaning of public nuisance if harms develop from them.

B. The Problem of Indeterminate Defendants

Even if it could be established that consumers should be sued for the damage they inflict on the environment, a significant structural dilemma remains: how do we find the consumers? As a starting point, while class actions almost always involve a plaintiff class, Rule 23 of the Federal Rules of Civil Procedure allows for either plaintiffs or defendants to be certified as a class. If we imagine a class of defendant consumers, the central challenge is determining who bought what. This will depend on the creation of a database detailing the products that are purchased by each consumer. Many predict that within a decade or so, the United States will essentially be a cashless society, meaning that there will be an electronic record of exactly what is bought and sold after we swipe an electronic device or make a payment online.

The thought of the government, or any entity for that matter, knowing what we buy sparks a visceral concern in people that their right to privacy will be violated. While concrete elaboration of the specific harm feared may prove elusive, the fact remains that the creation of a database of product purchases would incite angry opposition. Therefore, it will become necessary to build the case that the infringement is not what it appears. To begin with, the government already has intimate familiarity as the result of property taxes and registration requirements associated with perhaps the two largest purchases of most families: the house and the car. Additionally, banks and credit card companies are in many cases highly aware of the purchases that take place on credit and debit cards. Privacy, especially in the domain of consumption, may have the appearance of tangible meaning, but upon further examination, it breaks down into little more than an empty cocoon that is a mere metamorphic remnant in the process of technological and social evolution. The fact remains, however, that there will be particular products that people will not want anyone to know they purchased due to embarrassment or perhaps more legitimate concerns related to discrimination. At the top of this list would probably be items related to health (e.g., pharmaceuticals) and sex (e.g., birth control). In sum, while technological hurdles and privacy-based concerns will function as impediments to determining who buys what, in time we can expect these obstacles to diminish.

Even if we could find the defendants, there remains a major problem with consumers as defendants: we generally do not think of consumers as harmers. The foregoing discussion of the harm wrought by consumers must be construed objectively in the context ***129** of a market transaction. Supply means little without demand. A market transaction implies the existence of a consumer. An overall culpability should pervade the market transaction with the goal being cost internalization. Within this context, it is not morally imperative that any particular constituency pay the price of the market transaction, but simply that *a* constituency pay the price. As corporations commonly state, Pigovian taxes (taxes on negative externalities such as pollution) levied on companies are passed onto consumers in the form of higher prices.

Similarly, of course, a liability rule such as the one proposed in this Essay may well result in cost-passing to other constituencies. For example, in the normal course of liability imposition, an insurance market could develop to protect consumers from bearing the cost of future harms. Alternatively, companies themselves may indemnify consumers for the costs that develop from the liability regime. In response, companies would find ways to reduce the potential liability--which is, after all, the goal. For example, companies would be driven to develop products with smaller carbon footprints and toxic footprints, not only by explicitly indemnifying consumers, but also as a result of the natural shift in consumer demand to products with lower risks of liability. The point is simply that, consistent with a competitive market economy, companies will seek to lower the cost of their goods.

C. The Problem of Indeterminate Plaintiffs

If the proposed tort is a formulation of a public nuisance claim, then the clearest viable plaintiff is the government exercising its prerogative to sue to protect a public right. Of course, one of the central questions is whether the government would actually be willing to sue consumers. Consumers are important to the government because they are taxpayers and voters. Consumption is crucial to economic activity, and economic activity is taxable across a number of dimensions, including income tax, corporate tax, capital gains tax, and sales tax. Even if the government is reasonably confident that it will win the lawsuit and hence be compensated for the harm inflicted on the public, it is easy to imagine critics asserting that the tort will deter economic activity and result in a net loss of government revenue.

This possibility creates the perhaps larger problem that the entire tort could be construed as a tax that is simply an end-run around the usual hurdles associated with increasing taxes. From a political perspective, tax increases are notoriously toxic, yet in the environmental context they can also prove to be a highly efficient, behavior-altering stick. As Michael Vandenbergh writes, "Taxes are a favorite instrument of economists, and in theory they could be used quite effectively to steer consumer behaviors ranging from driving to electricity and consumer product use."[42] Perhaps the central difference between the tort and a tax, however, is the uncertainty that the tort will actually come to fruition. The potential tortfeasor will of course have to be noticed that he is assuming liability, but no harm may ever develop as the result of the product purchase. In contrast, a tax represents a form of certain and immediate liability. In reality, of course, there may be considerable truth to the ***130** statement that the proposed tort has the same substantive goal of a tax: to reduce consumption. But the procedural elements of a tort cast the situation with a considerably different flavor and perhaps most importantly, provide both the plaintiff and the defendant with their day in court.[43] The rationale for judicial action in this context is the notion that environmental damage could prove irreversible and catastrophic. Faced with serious systemic consequences emanating from global climate change or changes to our reproductive capacity or genetic code as the result of chemical exposures, the case for precautionary action builds. In this sense, the deterrent effect of the tort is the heart of the tort, implying that the goal of government in this context is primarily protective rather than revenue-generative.

Nevertheless, an American government and its state governments that are currently woefully lacking in political wherewithal will have considerable difficulty constructing a tort that enables suits against consumers. And even if the challenges surrounding the appearance of the tort as a tax by other means are surmountable, the larger question remains: If the government and its political components depend on a strong economy for general maintenance of power and for reelection, then will it be possible to muster the political will to sue consumers, even if such a tort were on the books? Even the most optimistic among us would have to admit that this seems unlikely.

As a result, in order to stand a chance of coming to fruition, the proposed tort would probably have to rely on citizen suits for enforcement. Assuming that the suit seeks monetary damages, as will be discussed below, the private plaintiff would have to demonstrate a special injury. In the Gulf oil spill example, the special injury could be a physical harm such as illness that an oil-cleanup worker develops from exposure to dispersants, or harm to a business that went bankrupt. In the context of global climate change more generally, Professors David Hunter and James Salzman have noted that plaintiffs could include "property owners, such as farmers who are experiencing reduced access to water because of smaller snowpacks or coastal homeowners whose houses have been damaged by increased storm activity."[44] While it could be argued that these injuries stem more from a private nuisance because they are more particularized and cabined, it could also be argued that they are simply a specific manifestation of a violation of the public right to be free from a world with anthropogenic global climate change. Overall, the special injury hurdle is probably not exceedingly burdensome--the more significant challenges ***131** probably involve determining damages and collecting damages, subjects to which this Essay now turns.

D. Damage Determination

The naked goal of a consumption tort is the modification of individual behavior. The hope is that the possibility of future liability that manifests itself as a de facto increase in price will dissuade consumers from buying certain products. Nevertheless, there will inevitably be cases in which damages arise. It will be important for a court to find damages not only consonant with ameliorating the harm but also sufficiently punitive to dissuade future consumption that will inflict harm. As the recent Gulf oil spill has demonstrated, the exercise will be far from perfect, but this lack of perfection need not impede action. BP's contribution of $20 billion demonstrated that arriving at concrete dollar amounts is possible, even if judges sometimes claim it is too difficult. "Rough justice" is better than no justice at all.

What type of justice can we imagine? If the harm involves actual harm from domestic environmental disasters linked to

global climate change, then damages could go toward an *ex post* cleanup fund.[45] As both Hurricane Katrina and the Gulf oil spill demonstrated, damages involve far more than simply rebuilding houses or cleaning up oil--they also involve picking up the pieces of broken lives. The typical methods associated with damage determination in a tort context can nevertheless achieve some sense of rough justice, even if monetary payments seem an inadequate way to make people whole. In their article *Advancing the Rebirth of Environmental Common Law*, Jason Czarnezki and Mark Thomsen suggest that courts should develop judicially administered "common law funds" to restore and rehabilitate plaintiffs, especially in the context of public nuisance claims involving environmental degradation. While concerns may rightly be associated with judicial control of large amounts of money, there are also questions as to who precisely is overseeing Kenneth Feinberg's administration of the Gulf Coast Claims Facility. Importantly, if legislatures would be interested in intervening to create and administer funds, as occurred with the September 11th Victim Compensation Fund, then that is their prerogative.

Beyond domestic environmental disasters linked to global climate change, damage determinations will become far more difficult. With regard to environmental disasters in other countries, commentators have pointed out the difficulty of holding U.S. citizens liable for harms inflicted on citizens of other countries. This issue may be a subject for further inquiry, but for present purposes, it is more plausible to hold American consumers liable for carbon dioxide emissions based on the Supreme Court's determination in *Massachusetts v. EPA* that carbon dioxide is a pollutant.[46] Of course, because all organisms emit carbon dioxide and because, in order to survive, we all engage in necessary consumption that releases carbon dioxide, a court, applying public nuisance doctrine, would have to determine the point at which carbon dioxide emissions become so excessive as to constitute an ***132** unreasonable interference with the public right to be free from a world with excessive carbon dioxide emissions. Responsibility for the damages could become a math exercise where the overall amount of damages would be distributed among the consumers of particular products. This approach could be a demand-side form of market share liability: rather than look to see how much each company produced in the given market, a court could look to how much each consumer consumed. The relatively small amount consumed by each consumer of course does not preclude apportionment of damages--it will merely make damage collection more difficult. In addition, there will always remain questions regarding the link between the purchase of the product and the harm.

There will also be questions surrounding whether the intervening harm, such as climate change, led to the ultimate harm, such as a flood. As Zasloff writes, the "issue is whether we can connect climate change with specific events."[47] There will be a probability that, for example, climate change contributed to the harm. Zasloff's solution similarly applies to the instant proposal: damages should be discounted by the probability that the damage was not caused by climate change.[48] The damage calculation, therefore, will not only have to take into account the proportional contribution of the purchase of a product to the harm in question, but also reflect the uncertainty that there was, in fact, a contribution to the harm. This is simply the recognition that some floods happen without climate change.

E. Damage Collection

As with the electronic database to record purchases, future shifts in cultural approaches to privacy and social perceptions of the role of government would be crucial before the government were to collect damages by garnishing wages, for example.[49] More realistically, the state could simply send defendants notice that they must pay. A non-paying defendant could be held in contempt of court and face ever increasing fines or jail time. Another idea would be to simply charge defendants for the amount they owe through the electronic payment system. Whatever the case, while damage collection will present challenges, they are not likely to be insurmountable.

In terms of damage distribution, through the doctrine of *cy pres*, the damages could escheat to the state or to other parties that work to clean up the damage from consumption.[50] This would link up well with the previously described common law fund designed to mitigate environmental damage. If the harm truly is public, as it must be in a public nuisance case, then it is reasonable to have the government administer the fund on ***133** behalf of the public. The hope is that consumers would want to avoid getting caught up in contributing to the fund, and would therefore think more about their purchases. Rather than view consumption as an incessant appropriation and usage of goods and services, with little risk to the consumer beyond potential damage to the consumer himself caused by the product, the imposition of consumer liability will force the relevant actors to respond to the risk of liability and therefore address the underlying risks.

CONCLUSION

Consumption inflicts massive damage on the environment. While environmental regulation has reaped many benefits over the past forty years, the marginal utility of current methods is decreasing and economic growth is imposing ever-increasing demands on the environment. In a return to its origins, environmental law is once again looking to common law such as public nuisance doctrine for new solutions to problems. In the context of global climate change and the horrors wrought by lead paint in our communities, public nuisance claims have met with limited success. Perhaps what is needed are different, or additional, defendants. By taking advantage of technological developments that enable a cashless society, it will become possible to sue consumers who purchase goods that contribute to environmental degradation and other social harms.

Footnotes

[a1] LL.M., The George Washington University Law School, 2012; J.D., Harvard Law School, 2006; B.A., Williams College, 2001.

[1] Katrina Fischer Kuh, *Foreword*, 37 HOFSTRA L. REV. 911, 913 (2009).

[2] *See* Daniel A. Farber, *Tort Law in the Era of Climate Change, Katrina, and 9/11: Exploring Liability for Extraordinary Risks*, 43 VAL. U. L. REV. 1075, 1075 (2009).

[3] *Id.* at 1095.

[4] Douglas A. Kysar, *Politics by Other Meanings: A Comment on "Retaking Rationality Two Years Later"*, 48 HOUS. L. REV. 43, 45-46 (2011).

[5] Michael P. Vandenbergh, *From Smokestack to SUV: The Individual as Regulated Entity in the New Era of Environmental Law*, 57 VAND. L. REV. 515, 602 (2004) [hereinafter Vandenbergh].

[6] Retailers and credit card companies have already accumulated vast amounts of information about consumers. For example, a well-publicized article recently appearing in *The New York Times Magazine* stated:
For decades, Target has collected vast amounts of data on every person who regularly walks into one of its stores. Whenever possible, Target assigns each shopper a unique code - known internally as a Guest ID number - that keeps tabs on everything they buy. "If you use a credit card or a coupon, or fill out a survey, or mail in a refund, or call the customer help line, or open an email we've sent you or visit our Web site, we'll record it and link it to your Guest ID," [Target statistician Andrew] Pole said. "We want to know everything we can."
Charles Duhigg, *How Companies Learn Your Secrets*, N.Y. TIMES MAGAZINE, Feb. 16, 2012, http://www.nytimes.com/2012/02/19/magazine/shopping-habits.html?_ r=1&ref=magazine.

[7] Douglas A. Kysar & Michael P. Vandenbergh, *Introduction: Climate Change and Consumption*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10,825, 10,832 (2008) [hereinafter Kysar].

[8] The problem is not purely one of the directional focus of environmental law. Corporate law, with its many mechanisms to limit the liability of managers, directors, shareholders, and corporations themselves, also has made the attachment of liability to supply-side actors incredibly difficult. In addition, a market capitalist system based, at least partly, on competition, seeks not only to provide more attractive products but also (i) to minimize costs through cost externalization and (ii) to construct demand. Externalities are not accidental by-products, but the result of conscious and intentional corporate decisions focused on profit maximization.

[9] Michael P. Vandenbergh & Anne C. Steineman, *The Carbon-Neutral Individual*, 82 N.Y.U. L. REV. 1673, 1677 (2007).

[10] Douglas Fischer, *Economists Find Flaws in Federal Estimate of Climate Damage*, DAILY CLIMATE (July 13, 2011), http:// wwwp.dailyclimate.org/tdc-newsroom/2011/07/climate-changecosts.

[11] Kysar, *supra* note 7, at 10,827.

[12] Kysar doubts green consumption holds much hope, asking whether it may be merely a "commodified palliative to ensure the continuation of business as usual." Kysar, *supra* note 7, at 10,833.

[13] Before the plastic bag tax in the District of Columbia, consumers used about 22.5 million bags a month. Within one month of implementation that figure dropped to 3 million. *See* Tim Craig, *Bag Tax Raises $150,000, but Far Fewer Bags Used*, WASH. POST (Mar. 29, 2010, 3:45 PM), http:// voices.washingtonpost.com/dc/2010/03/bag_tax_raises_150000_but_far.html.

[14] Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 CAP. U. L. REV. 21, 115 (2001).

[15] Kysar, *supra* note 7, at 10,826.

[16] *Id.*

[17] Vt. Yankee Nuclear Power Corp. v. Natural Res. Def. Council, 435 U.S. 519, 553-58 (1978).

[18] Vandenbergh, *supra* note 5, at 604.

[19] James Salzman, *Sustainable Consumption and the Law*, 27 ENVTL. L. 1243, 1256 (1997).

[20] Kysar, *supra* note 7, at 10,827.

[21] Kysar writes, "An emerging consensus suggests that 60-80% reductions in carbon emissions are required by 2050 to reduce the risk of catastrophic climate change." *Id.* at 10,828.

[22] George L. Priest, *The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law*, 14 J. LEGAL STUD. 461, 465-66 (1985).

[23] *Id.* at 466. As Priest points out, the more practical concern that drove the statutes was the need to create a compromise system that would at least guarantee automatic payment to injured workers, even if the payment may undercut some and over-reward others.

[24] *Id.*

[25] RESTATEMENT (SECOND) OF TORTS § 821B(1) (1979).

[26] *Id.* at § 821B(2)(a).

[27] For example, the Consumer Product Safety Commission established a database of consumer complaints about products at www.saferproducts.gov. *See* Press Release, U.S. Consumer Product Safety Commission, CPSC Launches New Consumer Product Safety Information Database Today (Mar. 11, 2011), *available at* http://www.cpsc.gov/cpscpub/prerel/prhtml11/11168.html. In the future, it is possible to imagine reviews extending beyond product complaints relating to poor performance and into the environmental impacts of products.

[28] *See* Gregory C. Keating, *Nuisance as a Strict Liability Wrong*, J. TORT L. (forthcoming), *available at*

http://works.bepress.com/gregorykeating/27.

[29] Jonathan Zasloff, *The Judicial Carbon Tax*, 55 UCLA L. REV. 1827, 1832 (2008).

[30] RESTATEMENT (SECOND) OF TORTS § 821B(2).

[31] *See* Jason Czarnezki & Mark Thomsen, *Advancing the Rebirth of Environmental Common Law*, 34 B.C. ENVTL. AFF. L. REV. 1 (2007).

[32] 549 U.S. 497 (2007).

[33] Am. Elec. Power Co., Inc. v. Connecticut, 131 S. Ct. 2527 (2011).

[34] Even in the mid-twentieth century, people had long been aware of the dangers of lead. In *De Architectura*, estimated to have been written in 25 B.C., Vitruvius wrote:
Water conducted through earthen pipes is more wholesome than that through lead; indeed that conveyed in lead must be injurious, because from it white lead is obtained, and this is said to be injurious to the human system. Hence, if what is generated from it is pernicious, there can be no doubt that itself cannot be a wholesome body. This may be verified by observing the workers in lead, who are of a pallid colour; for in casting lead, the fumes from it fixing on the different members, and daily burning them, destroy the vigour of the blood; water should therefore on no account be conducted in leaden pipes if we are desirous that it should be wholesome.
Vitruvius Pollio, THE ARCHITECTURE OF MARCUS VITRUVIUS POLLIO IN TEN BOOKS 199 (Joseph Gwilt, trans., Lockwood & Co. 1874), *available at* https:// play.google.com/store/books/details?id=QEotAAAAIAAJ. Benjamin Franklin wrote in a letter in 1786:
I recollect, that, when I had last the great pleasure of seeing you at Southampton, now a twelvemonth since, we had some conversation on the bad effects of lead taken inwardly; and that at your request I promised to send you in writing a particular account of several facts I then mentioned to you .... In America I have often observed, that on the roofs of our shingled houses, where moss is apt to grow in northern exposures, if there be any thing on the roof painted with white lead, such as balusters, or frames of dormant windows, &c., there is constantly a streak on the shingles from such paint down to the eaves, on which no moss will grow, but the wood remains constantly clean and free from it. We seldom drink rainwater that falls on our houses; and if we did, perhaps the small quantity of lead descending from such paint, might not be sufficient to produce any sensible ill effect on our bodies. But I have been told of a case in Europe, I forget the place, where a whole family was afflicted with what we call the dry bellyache, or *colica pictonum*, by drinking rain water.
Benjamin Franklin, *On the Effects of Lead Upon the Human Constitution*, *in* 10 THE WORKS OF BENJAMIN FRANKLIN, CONTAINING SEVERAL POLITICAL AND HISTORICAL TRACTS NOT INCLUDED IN ANY FORMER EDITION, AND MANY LETTERS OFFICIAL AND PRIVATE NOT HITHERTO PUBLISHED WITH NOTES AND A LIFE OF THE AUTHOR 564, 564-66 (Jared Sparks ed., 1856), *available at* https:// play.google.com/store/books/details?id=qmMFAAAAQAAJ.

[35] New York is among the jurisdictions with such a law, although in New York, counties must elect to opt in to the neighbor notification program. *See* 2000 N.Y. Sess. Laws Ch. 285 (S. 8223) (McKinney).

[36] Eric A. Posner & Cass R. Sunstein, *Climate Change Justice*, 96 GEO. L.J. 1565, 1597 (2008).

[37] DES was a drug administered to pregnant women to prevent miscarriages and other pregnancy complications. It had a variety of side effects, including the eventual development of tumors in the daughters of the pregnant women. *See generally* Aaron D. Twerski, *Market Share - A Tale of Two Centuries*, 55 BROOK. L. REV. 869 (1989) (discussing market share in the DES cases).

[38] 539 N.E.2d 1069 (N.Y. 1989).

[39] 342 N.W.2d 37 (Wis. 1984).

[40] 701 N.W.2d 523 (Wis. 2005).

[41] F. HARPER, F. JAMES & O. GRAY, THE LAW OF TORTS § 1.28 at 115 (2d ed. 1986).

[42] Vandenbergh, *supra* note 5, at 604.

[43] Just as class action plaintiffs have a due process right to "opt out" of the action, so too would class action defendants. In response to an opted-out defendant, the plaintiff could name the defendant individually, thereby forcing the defendant to obtain counsel, which would reduce the likelihood of an opt-out. Defendants not opting out would constitute a certified class required to accept the judicial outcome, albeit with appeal rights. For a discussion of due process rights in class actions, see Samuel Issacharoff, *Preclusion, Due Process, and the Right to Opt Out of Class Actions*, 77 NOTRE DAME L. REV. 1057 (2002).

[44] David Hunter & James Salzman, *Negligence in the Air: The Duty of Care in Climate Change Litigation*, 155 U. PA. L. REV. 1741, 1751 (2007).

[45] Czarnezki & Thomsen, *supra* note 31, at 29.

[46] 549 U.S. 497 (2007).

[47] Zasloff, *supra* note 29, at 1869.

[48] *Id.* at 1871.

[49] For instance, the uproar that accompanied the implementation of the federal income tax in the United States, and that to some degree still exists, illustrates that even when social and cultural shifts enabling political shifts occur, they are inevitably partial and tentative.

[50] *See* Kevin M. Forde, *What Can a Court Do With Leftover Class Action Funds? Almost Anything!*, 35 No. 3 JUDGES' J. (Summer 1996); Goutam U. Jois, *The Cy Pres Problem and the Role of Damages in Tort Law*, 16 VA. J. SOC. POL'Y & L. 258 (2008-09).