Regulation

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REGULATION was first published in July 1977 "because the extension of regulation is piecemeal, the sources and targets diverse, the language complex and often opaque, and the volume overwhelming." REGULATION is devoted to analyzing the implications of government regulatory policy and its effects on our public and private endeavors.

Science and Preferences

In "Letting Environmentalists' Preferences Count" (Fall 2003), Peter Van Doren raises the important and neglected question of why we should demand that environmentalists justify their beliefs via the natural sciences. His skepticism arises from the sound observation that markets properly respond to the preferences of consumers without regard to whether those preferences are based on valid science. Were we able to devise market institutions that allow environmentalists to buy what they want — from wildlife preserves to genetically unmodified food — at its cost of provision, the issue of "science as prerequisite" would never come up. Most of his article outlines market-based methods in which such transactions could take place, even when "free-rider" problems might lead to underprovision of public environmental goods.

Whether because of market failure or political clout, environmental considerations will not be limited to settings in which those having certain preferences bear the full cost of exercising them. When environmental policies are collectively chosen and, more importantly, collectively imposed, it can be argued that scientific validity becomes important. Incorrect or intentionally false statements deserve challenge lest policies based on them violate the rights of others.

In settings where science plays a clear instrumental role in ascertaining the magnitude of an environmental effect of potential policy concern, both science and willingness to pay matter. When people value cleaner air because of health benefits, for example, their willingness to pay for reduced risk of illness or death is relevant. But so too is the scientific links between emissions and ambient levels of pollutants, and between ambient levels and health — all matters for geographers, meteorologists, toxicologists, and epidemiologists to determine. Unfortunately, because anti-pollution policies are not imposed in ways that make everyone better off, the "dueling studies" problem Van Doren notes will plague the process — a problem sadly not limited to environmental debates.

HARM AND EFFICIENCY However, Van Doren suggests an under-recognized tension between efficiency and libertarian norms. Those values typically go together. On the one hand, markets promote welfare as measured by putting people on their greatest indifference curves. At the same time, relying on markets to decide how people will live and work and what they will produce and consume minimizes the degree to which the state interferes with personal liberty.

But in some cases, the norms may conflict; environmental policy may be one such context. The crucial concept is what is meant by "harm." In economic terms, as Van Doren points out, all "harms" have the same standing, measured by one's willingness to pay to avoid them. But in libertarian terms, "harms" have a narrower interpretation, based not simply on dislikes but, to use a phrase from Richard Stroup, on whether "the resulting harm or risk rises to levels that violate [a person's] rights." In post-Coasian economics, "rights" serve primarily to minimize transaction costs and maximize efficiency by clarifying ownership; their distribution is largely arbitrary. But in libertarian terms, "harm" is defined not in reference to preferences but as violations of "rights" specified in an intrinsically valuable, pre-constitutional, "natural law" manner. The illustrative maxim, almost a cliché, is Oliver Wendell Holmes's famous aphorism that "the right to swing my fist ends where the other man's nose begins."

The plausibility of both answers to Van Doren's question of whether environmentalists need science on their side arises because of this conflict between the ordinarily complementary norms of efficiency and libertarianism. The efficiency side leans toward the viewpoint that science is not necessary, as the only relevant harm is the willingness of environmentalists to back up their preferences with willingness

to pay. The libertarian side requires not just willingness to pay but that there is a harm that violates one's natural rights, in the way that one is not harmed by a fist until it hits one's nose. Mere distaste or discomfort at seeing the fist is insufficient. If harm matters only if it violates natural rights, supporting policies to prevent "harm" may require evidence from physical science. One needs to go beyond willingness to pay and show that pollution's effects are tantamount to being hit in the nose.

Environmentalism is not the only setting where this conflict arises. Free speech undoubtedly causes harms in the economist's sense. I have little doubt that the offense taken by many Americans when protesters burn the flag, by Jews when the Nazi Party marches through their neighborhoods, or by African-Americans during Ku Klux Klan rallies, exceeds (in a willingness-to-pay sense) the harm from, say, a rock thrown through a window. But the liberty interest in a right to free speech says that the state intervenes only when "sticks and stones are breaking your bones," as "words can never hurt you."

If the standard for "hurt" or "harm" is not just willingness to pay but some physical effect violating natural rights, science will have to play a role beyond what Van Doren suggests when environmental goods are determined by state intervention. But the power of his argument arises from the viewpoint that state intervention ideally only mimics what persons would do absent prohibitive transaction costs. If so, this efficiency/libertarian conflict could arise in market contexts as well. Avoiding it, I think, seems to require the presumption that while you cannot hit me in the nose, I can hit myself in the nose if I choose to do so. Without such a presumption, science could justify limits on free choices that result in nominal harm.

Moreover, scientific expertise in the realm of facts implies no special knowledge over citizens as a whole as to which public policies should and should not be enacted. To the extent that deference to science limits the scope of individual rights as private actors and public citizens, Van Doren's admonition to put preferences first is very well taken.

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Science and Public Policy

In his article "Letting Environmentalists' Preferences Count" (Fall 2003), Peter Van Doren is surely correct that environmentalists are entitled to their preferences, regardless of whether those preferences are based on "sound science" or not. So long as they, and not others, are bearing the consequences of their choices, environmentalists can rightly demand to choose freely, as they do in a free market with well-functioning property rights.

But even here, of course, science matters. Incentives (penalties and rewards for specific decisions) guide decisions, and science can help reveal the consequences — the penalties and rewards — likely to result from specific choices. All decisions are based on perceptions, and science can better inform any person. A better-informed person's perceptions will better match reality, reducing nasty surprises from decisions. Still, individual freedom demands that all persons be free — at their own peril — to ignore science in their personal choices.

The situation is very different, however, for those who demand policies that bind everyone. For example, scientific information is needed to answer certain narrow questions like, "If Ava's factory emits pollutant X, what will that do to Bill who lives downwind?" (Note that nothing changes if the question is about the effects on the wildlife in Bill's wildlife preserve.) In a community where science is respected, anyone who demands governmental control of emissions from Ava's factory on grounds of health damages faces a burden of proof, and scientific information will be a key part of meeting that burden. If Bill alleges in court that Ava's pollution violates his property rights, the court will require evidence that the pollution emitted by Ava's factory is (or was) the cause of the problem, and the resulting harm or risk rises to levels that violate Bill's rights.

Scientific evidence and scientific logic are commonly used to support such claims in court, and/or to help the defense argue against them. "Dueling scientific studies" are often an important part of enforcing the property rights that are the *sine qua non* of markets. And from those duels, in and outside of court, come better decisions and a better environment. Resources spent to control benign emissions wrongly thought to be dangerous, for example, are wasted if the goal is to achieve a safer, healthier environment. Damages that go undiscovered for lack of good science also are clearly harmful. So information brought to light and tested in court helps produce well-informed decisions that set precedents and, in effect, make law.

If Bill does not go to court but instead joins his friends to demand that the legislative branch make certain levels of emissions unlawful — that is, if he enters into the public policy arena — then the perceptions of each citizen-voter are important. Misinformed citizen-voters, acting without good scientific knowledge, can harm us all. Partly for this reason, an environmental group seeking tighter regulation of emissions by claiming serious health damages from the emissions should expect those claims to be subject to careful scrutiny. The claim might be part of its members' preferences, but that provides no immunity from scrutiny in regard to the public policy process. If the claims are true, they deserve consideration by voters and regulators; if they are false, they deserve debunking.

When legislative actions or executive branch rules bind everyone, each of us has the right to question what we believe to be false statements meant to influence the public policy process. Further, when policymakers take action based on their view of scientific information — such as whether or not burning fossil fuels at current rates will increase the risk of disease or death for millions — debates over what science does or does not tell us are crucial to the well-being of everyone. Pages in *Regulation* devoted to such debates are surely not wasted pages. They discuss legitimate, and even critical, issues.

PREFERENCES AND VALUES To understand the proper role of science in public policy, we must distinguish properly between desires and values on the one hand and operational preferences on the other. Desires and values are only one part of preferences. To be useful in decision-making, preferences must reveal whether a given tradeoff of X to get more Y will improve the situation, make it worse, or leave it equally preferred. For an economist, preferences are usually expressed as

the rate at which one is willing to make tradeoffs. The statement "I want more clean air!" is not a meaningful expression of a person's preferences. It says virtually nothing about the speaker's preferences — the willingness to make specific tradeoffs. It says only that to this person, clean air is a good thing rather than a bad thing.

Decisions are made at the margin, so the relevant preferences indicate what that person is willing to sacrifice to get a specified improvement in air quality, or alternatively, what actual or potential benefits the person is willing to reject in order to keep from sacrificing existing air quality. Bill, who speaks passionately in demanding a stricter clean air policy for which others — not he himself — are expected to pay, reveals nothing significant about his own preferences. Ava can challenge that policy demand without ever questioning Bill's preferences. She does just that when she challenges Bill's claim that "serious health effects are at stake if this pollution persists." That claim says nothing of his true preferences — his willingness to make sacrifices of other values to gain cleaner air. The empirical claim is questioned, not Bill's preferences.

We should acknowledge here that preferences that are entirely aesthetic or religious, of the form "Pollution is evil and must not be allowed!" or "Oil drilling is ugly and I do not like to see it!" are not subject to scientific criticism, except to the extent that we can question how long an aesthetic problem might last or what mitigation might reduce aesthetic problems. But purely religious or aesthetic statements are seldom if ever the main basis of environmental demands by important groups. Most pollution laws are based on concerns of the public about human health, and most other environmental laws are based on claims of ecological benefits. In both of those cases, science has much to say about realistic expectations and policy options.

We can use science to question most of the relevant claims by environmentalists, without questioning the validity of their preferences. When public policy (not individual private choice) is at stake, such questions are a perfectly valid exercise. Avoiding the human health or ecological harms caused by preferences based on false expectations of risk fully justifies the dueling science debates in *Regulation* and elsewhere. Bill has a right to choose for himself, even based on mistaken expectations of policy outcomes. But the rest of us have no obligation to respect erroneous judgments (and Bill's resulting preferences) when he tries to influence public policy decisions that we must endure.

Van Doren is right that dueling scientific studies cannot properly set public policy without reference to the "values" elements of preferences. But good science is an important part of any sound public policy process.

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Between Polar Opposites

S. Fred Singer's review (Winter 2003–2004) of our book, *Reconstructing Climate Policy: Beyond Kyoto*, confuses our argument. Singer calls our proposal clever, but then dispenses a string of discourteous barbs that are inapposite and unbecoming, while criticizing our book for positions we do not take. His review associates our book with support for the Kyoto Protocol, which he then deplores, but our book is in fact a critique of Kyoto and a proposal for an alternative, superior approach. He dismisses our proposal for trading emissions allowances with China as leaving "emissions … essentially unabated," achieving "zilch," rather than cutting emissions 60 to 80 percent, but our book clearly explains how our proposal would gradually reduce emissions rather than achieving either nothing or drastic cuts (and, curiously, it is Singer who prefers leaving emissions unabated). He also slams a number of others' proposals that appear nowhere in our book, such as convergence to equal per-capita emissions worldwide or authoritarian fertility control — positions we obviously do not advocate. Meanwhile, his historical recounting of the flaws in the Kyoto negotiations is almost the same story told in our book in greater detail. We welcome debate over our proposal, but not reckless mischaracterization.

Singer's main objection is that we propose doing anything about climate change at all. He says we "assert the existence of a future climate problem more or less on faith," but our book carefully surveys the research on the expected damages (and benefits) from a changing climate. As serious risk analysts know, even a low probability of a high consequence can warrant preventive action. Staunch refusal to recognize risk is the real indication of blind faith. Our book, based on sober cost-benefit and expected-value criteria that should be dear to the hearts of *Regulation's* readers, finds that even though climate change may be of uncertain and low probability, its consequences warrant at least some modest preventive insurance measures (but not as drastic or rigid as those in Kyoto). Our book then articulates how to respond sensibly, using efficient market-based policy tools.

That our book was published by the American Enterprise Institute Press and supported by AEI's Robert Hahn, who also sits on *Regulation's* editorial board, is itself some indication that (extremists aside) there can be a constructive dialogue across diverse viewpoints toward a sensible climate policy. That the book has drawn the ire of a longtime climate change skeptic is perhaps a badge of honor for a centrist position.

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Postscript to *U.S. v. Microsoft*

Tim Brennan's article ("The Legacy of *U.S. v. Microsoft*," Vol. 26, No. 4) correctly indicates that the Microsoft case failed as a rigorous test of so-called "post-Chicago" theories of competition. However, his evaluation is based on inadequate skepticism of those theories and a questionable reading of the case.

Brennan contrasts a "bar napkin" post-Chicago case that prosecutors supposedly did not pursue to a simpler "air supply" model that the prosecutors did employ. In fact, the plaintiffs presented at least a sketch of a full "bar napkin" case in which the "air supply" arguments were a major element. What made the "air supply" argument — that Microsoft allegedly foreclosed sup-

posedly superior distribution channels — stand out was that it was far easier to document than the other elements. Thus, by the time three courts had grappled with the case, the result was indeed no more than what was implied by an "air supply" case. This, however, was due to progressive whittling away of the acceptance of and, more critically, reaction to the "bar napkin" argument that the government said it was presenting.

(The "air supply" metaphor, not so incidentally, has a nice sound but is imprecise. Use of the phrase was not in one of the e-mails on which the government relied. Instead, a disgruntled Intel executive alleged that a Microsoft executive used the phrase. More critically, the phrase related to Netscape's loss of revenue because Microsoft added its Internet Explorer Web browser to Windows without an extra charge, forcing Netscape to stop charging for its Navigator browser.)

This difference in emphasis reflects the critical defect of post-Chicago theories. The typical theory indicates that in some, but not all, circumstances certain tactics can be both effective and inefficient. That is true of both theories frequently mentioned but never explained in the case. Network externality theory was mentioned in the case as the basis of Microsoft's monopoly in operating systems, and raising rivals' costs was stated as the reason for the "air supply" strategy and other tactics.

However, neither the written or oral statements of the government's expert economists nor the briefs filed by the attorneys even state the theories. The best discussion of raising rivals' costs was a response to cross-examination by Microsoft's expert, Richard Schmalensee. Schmalensee correctly noted that the concept covered tactics that may or may not be inefficient. (He also provided the only discussion of network externalities; he indicated, probably too briefly, that those theories are tricky to employ and then he presented evidence that the theories were not applicable to operating systems.)

It is precisely those drawbacks that prevent practical use of post-Chicago theories. Two pro-Microsoft law school professors, Ronald Cass and Keith Hylton, opened their 1999 *George Mason Law Review* article "Preserving Competition: Economic Analysis, Legal Standards and Microsoft" by noting that "antitrust law is a hammer, not a scalpel." Their point is that post-Chicago theories require evidence that is unlikely to be obtainable. That conclusion has often been made. One major document of post-Chicago theory, the *Handbook of Industrial Organization*, clearly reflects this; some authors postulate practical relevance; other contributors are skeptical. At least three substantial reviews criticized the book because of concerns about the practical relevance of the theories. (Two ironies arise here: Schmalensee was one of the editors of the *Handbook*; Franklin Fisher, one of the government's experts, authored one of the most skeptical reviews.) Thus, Brennan's fear that the work was done to fatten resumes may have much validity; a kinder interpretation is that the effort showed the difficulties of testing more complex theories of market behavior.

The Microsoft case is an indication that post-Chicago theory indeed requires evidence that is unavailable.

Brennan's literature citations indicate recognition of the problems that he does not explicitly address. Brennan lists Malcolm Coate and Jeffrey Fischer's 2001 *Akron Law Review* article "Can Post-Chicago Economics Survive *Daubert*?" which charges that Fisher's testimony in the case did not adhere to standards that the Supreme Court set for expert testimony. He also lists Fisher's 1989 *RAND Journal of Economics* article "Games Economists Play," which criticizes post-Chicago theory. He also lists Stan Liebowitz and Stephen Margolis's 2001 book *Winners, Losers & Microsoft*, which presents the definitive study of the validity in theory and practice of the network externality argument.

The case clearly demonstrates the problems. As the Microsoft attorneys protested in vain, the government's case consisted mostly of sentences from assorted sources that sounded terrible if taken out of context and usually proved innocuous in context. For example, the "air supply" remark is indeed threatening but it was also empty bragging; companies fearing Microsoft could and indeed did make funds available to Netscape.

At every stage, those quotations substituted for proof. As noted, post-Chicago concepts were mentioned as catch phrases. Explanations and citations were absent. No effort was made to provide evidence that the actions were inefficient.

Fisher's written testimony substitutes the use of the bad-sounding phrases for quantitative analysis. Thomas Penfield Jackson, the judge in the first district court trial, told journalists with whom he discussed the case that he was upset by Microsoft's attitude. The resulting decision largely swallowed the government's case. The only charge dropped was of exclusive dealing. In line with a "cocktail napkin" approach, he accepted the government's plan to break-up Microsoft.

The Circuit Court of Appeals decision nominally accepted Jackson's basic arguments but introduced qualifications that made curtailing the remedy inevitable. The changes weakened the charges and required a new hearing on a remedy. With lesser charges and a lack of enthusiasm for a break-up, the rehearing unsurprisingly led only to controls on various Microsoft prices. In short, the "cocktail napkin" model was nominally accepted at every stage. No one ever admitted how shoddy the presentation was. Instead, by stealth, the effective case was indeed transformed into an "air supply" punishment.

Thus, Brennan's conclusions seem too modest. The Microsoft case is an indicator that post-Chicago theory indeed requires evidence that is unavailable. To be sure, the failure can be excused as resulting from special circumstances or prosecutor ineptitude. Examination of the post-Chicago literature suggests that such rationalizations are invalid. The data needs are indeed impossible to meet.

On this basis, a more appropriate conclusion is that great support was given to those who think Chicago theory is too optimistic about the ability to use antitrust to promote economic efficiency.

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