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Pollution and Policy

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POLLUTION AND POLICY. By James E. Krier¹ and Edmund Ursin.² Berkeley and Los Angeles: University of California Press; London: University of California Press, Ltd. 1977. Pp. vii, 401. \$15.95.

*Reviewed by Patricia V. Russo*³

In 1974, Krier found the pollution policymakers' unfamiliarity with economic approaches to pollution control "depressing."⁴ He must be more depressed than ever because the solutions he has been proposing since 1971,⁵ and that he and his co-author propose in this book, have not been incorporated into the 1977 Clean Air Amendments, or into pollution policy to date. The solution proposed here is the substitution of variable "management standards" for uniform national air quality standards.

Present pollution control policy consists of government regulation designed to achieve compliance with one nationally prescribed standard of air quality for each regulated pollutant.⁶ The standard is expressed as a maximum allowed weight of pollutant in a fixed volume of air, over a fixed period of time, at a fixed temperature and pressure, which may be exceeded only one day each year.⁷

The authors argue that a uniform standard is economically inefficient because it fails to achieve cost minimization: the lowest possible sum of (a) the cost of pollution and (b) the cost of avoiding pollution.⁸ As an example of the failure of uniform standards to achieve cost minimization, the authors describe the debate surrounding California's 1973 effort to devise an implementation plan that would comply with the national standard. It was estimated that the number of days in excess of the federal standard for photochemical oxidant in the Los Angeles area

could be reduced from the then-prevailing 250 to about 40 by, among other measures, an approximate 33 percent reduction in

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4. Krier, *The Irrational National Air Quality Standards: Macro- and Micro-Mistakes*, 22 U.C.L.A. L. REV. 323, 324 (1974).

5. J. KRIER, *ENVIRONMENTAL LAW AND POLICY* (1971).

6. Presently the following pollutants are regulated: carbon monoxide, hydrocarbons, particulates, sulfur oxides, nitrogen dioxide, and photochemical oxidants. 40 C.F.R. § 50 (1977).

7. For example, the standard for particulates is 260 micrograms per cubic meter over 24 hours at 25° C, 760 millimeters pressure. The standard for carbon monoxide is 10 milligrams per cubic meter over 8 hours and 40 milligrams per cubic meter over 1 hour at 25° C; 760 mm pressure. *Id.*

8. See also Krier, *supra* note 4, at 325-35.

gasoline consumption. To achieve the federal requirement of no more than one day per year in excess of the standard, on the other hand, would entail a reduction of at least 90 percent, and probably more. In other words, the price for about 40 more days of improved air quality, after accomplishing 210 days already under the more modest proposal, would be an almost threefold increase in the controls on gasoline consumption!⁹

Krier has been railing against uniform standards imposed through regulation for some time.¹⁰ In this book the authors suggest how uniform standards imposed through regulation came to be the preeminent American pollution control policy in spite of the availability of subsidization (tax incentives) and pricing (fees for polluting) as alternative methods to regulation. The origin of uniform standards can be understood by focusing on several themes in the history of pollution control policy: policy by least steps, allocation of the burden of uncertainty to those seeking change in the status quo, crisis, fixation upon regulation and exfoliation. Policy by least steps minimized opposition to policy. The law, in allocating the burden of proving the nexus between pollution and motor vehicles to those who sought reduction of emissions, placed the burden on citizens financially less able to engage in research and lobbying efforts, while the auto industry, financially more able to do both, merely had to show that things were unclear. The effect of these two themes led to the third: crisis—severe pollution episodes in which illness and death resulted. Crisis stimulated government action “by suddenly making the expense of inaction appear too high,”¹¹ and by provoking “citizen demands for action.”¹² The result was regulation, for regulation responded to crisis more rapidly than subsidization or pricing and perhaps met some societal need to punish the “wrongdoers.”¹³ Exfoliation (the process of elimination) led to the discovery of the role of automobiles in air pollution and made clear that pollution was not a local problem and was not amenable to local solution.¹⁴ This in turn led to centralization and ultimately to

9. J. KRIER & E. URSIN, *POLLUTION AND POLICY* 317 (1978) (footnote omitted).

10. Regarding uniform standards, see Krier, *supra* note 4, at 324-35. Regarding “The Great American Regulatory Tradition,” see Krier, *The Pollution Problem and Legal Institutions: A Conceptual Interview*, 18 U.C.L.A. L. REV. 429, 459-75 (1971).

11. J. KRIER & E. URSIN, *supra* note 9, at 266.

12. *Id.* at 267.

13. *Id.* at 285. See also *The Pollution Problem and Legal Institutions: A Conceptual Overview*, *supra* note 10, at 461.

14. J. KRIER & E. URSIN, *supra* note 9, at 12. The authors describe exfoliation: “As measures were tried, and as they failed in whole or part, layer upon layer of obscurity about the pollution problem was stripped away. The failure of each ‘solution’ produced valuable

uniformity because Congress is less subject to local pressure, and because uniform standards involve lower information and administrative costs than varying standards.

In place of uniform standards the authors propose "management standards." They argue that the primary national air standards (designed to protect public health) were "conservatively based on worst-case assumptions, the idea being to protect the most susceptible part of the population in the most polluted areas of the country from adverse effects, leaving considerable room for error."¹⁵ Because the goal is to minimize the sum of the costs of pollution and the cost of its control, and because the costs of both vary across the nation, standards should also vary if economic efficiency is to be achieved.

The authors sketch the management standards approach, which envisions

time-phased steps in each of which there must be achieved substantial percentage reductions in the number of days per year in excess of federally specified uniform ambient *concentration* standards. Ultimately, this number would be reduced to a point where further reductions in the area in question would not be worth the costs of attaining them. Management standards thus aim at long-term (but not uniform) improvements, but they insist in the meantime upon short-term accomplishments that exhaust all feasible controls and that enhance air quality relative to what it was before.¹⁶

Criteria of feasibility would recognize "constraints imposed by technological, economic, administrative, political, and other social considerations—considerations that would bear on the issue of what schedule of compliance would just approach (but not exceed) that

information about where to look and what to do (or at least where not to look and what not to do) next." *Id.*

Exfoliation also eliminated voluntarism as a solution. The authors explain why voluntarism would fail. Air is common property and, being costless, is overconsumed. In economic terms, the cost is externalized. Even if clean air is priced (for example, by pollution control devices), it is impossible to exclude nonpurchasers from consuming the resulting cleaner air, thus the benefit is externalized. Therefore, the wrong contingencies are set up: rewards for overconsuming the free good (the common property effect), and punishments for refraining from overconsuming the free good, because others will consume it (the collective goods effect). To set up the right contingencies, to come to agreement on the cost of clean air and the use of pollution control devices, involves high transactions costs (the cost of gathering information, the cost of engaging in bargaining, and the cost of policing agreements). Additional difficulty exists because environmental quality is a luxury good. As income decreases, so does the taste for the good. *Id.*

15. *Id.* at 312.

16. *Id.* at 329. "The standards would be expressed only in terms of concentration levels; the practice of providing that these levels are not to be exceeded more than one day per year would be abandoned." *Id.* at 330.

point where any more demanding schedule would not be worthwhile in light of its costs and consequences."¹⁷ In effect, management standards would mimic present policy concerning secondary standards¹⁸—reasonableness.

The authors suggest that gasoline rationing will be necessary in most urban areas in order to implement the management standard.¹⁹ They offer the following gasoline allocation proposal: issuance of a fixed number of transferable coupons to the owner of each registered vehicle. Those who value gasoline more highly than the price of the coupons, would purchase coupons. Those who value money more highly than gasoline, would sell coupons.²⁰ "If thought necessary to achieve equity, coupons could be distributed progressively, such that the poorer the owner of a vehicle, the more coupons that person would receive."²¹ An alternative gasoline rationing method proposed would involve limiting the total supply of gasoline and auctioning selling rights to refineries, one right for each gallon to be sold. "Competition among refineries for these rights would give the rights a positive price roughly equal to the windfall profits"²² the refineries would realize if total supply were limited and no auction were imposed. The auction method would effect rationing without resort to first-come, first-served allocations and the long lines associated with that method. The authors concede that markets in time (long lines) are more advantageous to the poor than markets in money (their time is generally compensated at a lower rate). They suggest that "if considerations of equity weigh heavily,"²³ then the transferable coupon allocation method should be employed.

Finally, the authors suggest that the doctrine of federal preemption of new vehicle emission standards be reexamined. All states should have the option, presently available only in California, to require more stringent emission limitations for new vehicles. Once

17. *Id.* at 331.

18. Secondary standards are designed to protect the public welfare. 42 U.S.C. § 7409 (1976).

19. Transportation is the greatest contributor by weight to total emissions of air pollutants, and the bulk of transportation emissions are attributable to motor vehicles. J. KRIER & E. URSIN, *supra* note 9, at 18-19.

20. The information costs associated with determining the proper number of coupons to be distributed in order to achieve economic efficiency are lower than the information costs associated with determining the proper price for the coupons. Krier & Montgomery, *Resource Allocation, Information Cost and the Form of Government Intervention*, 13 NAT. RESOURCES J. 89, 101 n.44 (1973).

21. J. KRIER & E. URSIN, *supra* note 9, at 337. This would appear to be a retrogressive distribution, but the authors denominate it a progressive distribution.

22. *Id.* at 339.

23. *Id.*

a car was produced for use in California, its use in other states could have resulted in economies of scale to manufacturers, and might have avoided the need for costly transportation plans²⁴ in some states. Additionally, a less stringent emission standard option should be made available to states that will be able to achieve the national air standards without resort to the present expensive emission controls on vehicles. The authors, recognizing the high administrative costs associated with designing vehicles especially tailored to each state's air quality needs, propose an uninspired compromise: three cars, one more stringent than, one less stringent than, and one at the present emission standard for new vehicles. Presumably this will not exactly meet any state's clean air needs, but it will allow a closer approximation than the present choice.

All this may appear to propose the classic regulatory nightmare. But the authors offer the following in rebuttal: while it is true that tailored standards would involve higher "information (administrative) costs"²⁵ than uniform standards, (1) "EPA already needs and acquires so much information about each area in order to assess implementation plans that it is doubtful much more would be required to tailor appropriate standards for each;"²⁶ (2) "uniform standards have led to high administrative costs in the form of hassle, frustration, bickering, delay and litigation;"²⁷ (3) uniform standards often result in allocative inefficiency, as demonstrated by the threefold increase in gasoline controls required to achieve forty more days of improved air quality in Los Angeles;²⁸ (4) the air is likely to be a more valuable resource in the future as a result of increasing demand brought on by growth.

As a resource increases in value, so too do the benefits of allocating it efficiently among competing uses. Since the administrative costs associated with varying standards should remain more or less fixed over time, at some point they are likely to be surpassed by the efficiency gains such standards would realize.²⁹

Krier has been urging variable standards for a number of years.³⁰ It makes such good sense one wonders why variable standards have

24. Transportation plans are designed to implement national air standards and usually require reductions in vehicle miles traveled and provisions for mass transit.

25. J. KRIER & E. URSIN, *supra* note 9, at 316.

26. *Id.* EPA is the Environmental Protection Agency.

27. *Id.* at 318, n.j.

28. *Id.* at 317.

29. *Id.* at 318, n.j. See also, Krier, *supra* note 4 at 330; 13 NAT. RESOURCES J., *supra* note 20, at 96.

30. See Krier, *supra* note 4, at 323.

not been adopted. Krier suggests that the answer might be that air hasn't been valuable enough in the past to justify such a fine tuned allocation.³¹ But another legal scholar concerned with economics has indicated the answer may lie elsewhere.³² Calabresi suggests that certain allocations of scarce goods involve tragic choices—choices which require placing a value on life. Placing a value on life produces a significant externality: the cost of costing—the costs of “market determinations that say or imply that the value of a life . . . is reducible to a money figure.”³³ This externality, as all other externalities, prevents the market from operating efficiently. In an earlier work Krier confronted this problem directly, apparently without recognizing its significance.³⁴ In that work, he responded to the argument that when it comes to health and well-being, costs should not be a concern, as follows: “[i]t should be clear that this objection amounts to patent nonsense. Behind the objection is the assumption that there is some absolute of ‘good health,’ and the further assumption that *this absolute has infinite value*, since it should be chosen no matter what cost that choice implies.”³⁵ It is precisely the value conflict between life as a pearl beyond price, and life with a price tag, that presents the society with the tragic choice.³⁶ Calabresi suggests that as long as the cost-benefit analysis is not made too blatantly, the “cost of costing” will be minimized.³⁷ But as the cost-benefit analysis becomes more candid, the “cost of costing” becomes too high to the society wishing to hold fast to conflicting values, and the market will be rejected as an allocation method.³⁸ Krier and Ursin point out that:

[p]eople regularly choose at some point not to opt for better health because they consider that the resulting benefits will not be worth the costs of attaining them. People take jobs that involve a high (and unhealthy) degree of pressure . . . because the jobs pay more . . . or . . . people . . . live in the smoggy San Fernando

31. J. KRIER & E. URSIN, *supra* note 9, at 318 n.j.

32. G. CALABRESI & P. BOBBITT, *TRAGIC CHOICES* (1978).

33. *Id.* at 32. “Externalities exist when the costs and benefits of resource use are not fully taken into account.” Krier & Montgomery, *supra* note 20, at 93.

34. Krier, *supra* note 4, at 330-31.

35. *Id.* (emphasis added).

36. Calabresi points out that other costs are then involved—honesty costs. G. CALABRESI & P. BOBBITT, *supra* note 32, at 146.

37. *Id.* at 144. “Besides the cost of costing, pure markets have two other shortcomings: dependency on the prevailing distribution of wealth, and indifferences to societal preferences.” *Id.* Krier and Ursin discuss only dependency on prevailing wealth distribution in their book.

38. *Id.* at 146.

Valley area of Los Angeles because housing in parts of it is moderately priced.³⁹

But it is one thing for individuals to make this cost-benefit analysis and quite another for government to do so. When government fosters the pricing of life, the tragic nature of the allocation, hidden temporarily as individual choice, is laid bare; the effect is particularly demoralizing to the society.⁴⁰ Krier and Ursin rightly observe that "[s]ociety too has limited resources, and it cannot afford to spend more on cleaner air than cleaner air is worth. . . . [T]he heaviest cost of protecting too zealously against pollution effects could be in health costs themselves—costs imposed by other ills that we have wasted the opportunity to attack."⁴¹ But they fail to observe that inefficiency will persist, the "cost of costing" will persist, because the beneficiaries of other health allocation decisions will not be readily apparent, but the victims of clean air allocation decisions *will be*, especially during severe pollution episodes.⁴² As the victims become more identifiable, the allocation becomes less acceptable to the society.⁴³

This is not to say that Calabresi argues for protection of life at all costs—he doesn't, nor to say that Krier and Ursin are not concerned with fairness—they are.⁴⁴ It is rather to point out that the pollution problem is not subject to simple resolution by the application of market techniques. Calabresi suggests that the hallmark of tragic allocations is cycles—movement from one allocation technique to the next in a restless search for one that will avoid the tragic nature of the allocation.⁴⁵

39. J. KRIER & E. URSIN, *supra* note 9, at 319.

40. G. CALABRESI & P. BOBBITT, *supra* note 32, at 145. Calabresi says that this cost is analogous to the cost of costing.

41. J. KRIER & E. URSIN, *supra* note 9, at 319.

42. They do observe that "during times of crisis . . . it would be odd indeed to hear the officials in charge talk of what they can and cannot afford to do about the problem." *Id.* It is precisely because the victims have been identified, that it would be odd.

43. G. CALABRESI & P. BOBBITT, *supra* note 32, at 152-53. The allocation is particularly unacceptable if it offends egalitarian values. *Id.* at 25.

44. Calabresi proposes no solution to tragic dilemmas in his book. Rather, he aims at exposing the forces at work. G. CALABRESI & P. BOBBITT, *supra* note 32, at 195.

Krier and Ursin do not engage in an extensive analysis of fairness, although they do recognize that fairness must not be sacrificed to achieve efficiency. They do not attempt to deal with modern philosophical theory on fairness. *See also* Rawls, *Justice as Fairness*, 67 *PHILOSOPHICAL REV.* 164 (1958); J. RAWLS, *A THEORY OF JUSTICE* (1971). Rather, they use the term to mean rational, the opposite of arbitrary.

45. G. CALABRESI & P. BOBBITT, *supra* note 32, at 195-99. "Since the values endangered by any given approach vary, a society which wishes to reject none of them can, by moving, with desperate grace, from one approach to another, reaffirm the most threatened basic value and thereby seek to assure that its function as an underpinning of the society is not permanently lost." *Id.* at 198.

Wherein lies the value of this book? In the introduction the authors suggest: "Study the Past . . . What Is Past Is Prologue."⁴⁶ The value of this book lies not in the authors' proposed market solutions for improved pollution policymaking, but rather in their detailed, well documented account of inadequate pollution policymaking. That Florida presently has nine counties designated as "nonattainment areas"⁴⁷ under the 1977 Clean Air Act Amendments, six of which are nonattainment areas because of motor vehicle air pollution,⁴⁸ makes this book particularly timely for Floridians. Newly formed Metropolitan Planning Organizations in each nonattainment area are devising transportation control plans. Anyone connected with this effort can find in this book a full account of what not to do, and how not to do it. A 1971 attempt in California to require the installation of nitrogen oxide control devices on used vehicles underscores a point the authors make repeatedly: although the past should have provided sufficient experience to avoid repeating mistakes, mistakes were repeated, with disastrous results. The control devices were to be installed at the time of initial registration of the vehicle, at the time of transfer, or at the time of renewal of registration. Public opposition to installation of the device at the time of renewal of registration resulted in the replacement of four of the five members of the Air Regulatory Board (ARB) and a delay in requiring the device. Lawsuits by conservationists followed, and the new ARB reinstated the program. Lawsuits to stop enforcement followed. The California Highway Patrol sought declaratory judgments to define their enforcement obligation and received contradictory judgments in two jurisdictions. The legislature voted against repeal and then for repeal of the controversial program. Finally Governor Jerry Brown signed the repeal bill into law, but only after additional hearings had been conducted. Six years earlier, an attempt to impose a similar "time of renewal of registration" requirement had failed.

The authors urge that controls which disturb established patterns of behavior be introduced gradually and sensibly.⁴⁹ They also urge increased federal and state cooperation in pollution policymaking,

The inevitability of cycles where tragic allocations are involved suggests that some of Krier's ideas will be adopted—for a while. Indeed there may be some evidence of this in EPA's current willingness to explore the usefulness of the bubble concept. See 9 ENVIR. REP. (BNA) 1611 (1978).

46. J. KRIER & E. URSIN, *supra* note 9, at 4.

47. Florida Dep't of Env't'l Reg., Proposed Air Pollution Control Rules for Nonattainment Areas 31-34 (Dec. 22, 1978). A nonattainment area is any area not meeting ambient air standards.

48. *Id.*, Introductory Explanatory Notes 1-4.

49. J. KRIER & E. URSIN, *supra* note 9, at 335.

and demonstrate how sadly lacking this cooperation has been in the past.

Lag is the final theme the authors identify in the history of pollution policymaking: They define lag as the delay between the recognition of a problem and its solution, and they make it quite clear that, in spite of substantial government intervention in the pollution problem, we haven't seen the end of lag.

