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## BALANCING POLICY FOR ENVIRONMENT AND ECONOMIC DEVELOPMENT

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My title entails what I often refer to as the “grand dichotomy”—the alleged extremes of environmental integrity and economic development. This dichotomy is usually dealt with through “balancing” the two extremes in policy decisions. The burden of my comments will be to address the legitimacy of the “grand dichotomy.” I will do this by commenting on several related aspects of this overly stark choice, thereby hoping to illustrate the futility of posing the debate in these terms.

Those of us engaged in policy analysis and education regard our mandate as helping individuals and groups assess the impacts of alternative courses of action. While true as it stands, I worry that this formulation of our role tends to underplay the importance of assuring that the issues and choices are carefully framed before we turn to an assessment of their implications. Hence my purpose here will be to argue that much more attention needs to be paid to the matter of how the choice problem is framed. In this regard, the stark choice of “environment versus economic development” is an example of an improperly framed policy issue. I will elaborate on this point in the comments that follow.

### The Stylized Problem

As those of you who read *Choices* magazine will know, recently I have been engaged in a debate there with the New York State Commissioner of Agriculture Richard McGuire. This debate concerns the alleged conflicts between agricultural productivity and environmental quality. As intimated previously, I stress the qualifier “alleged” because I am not certain that this is an accurate portrayal of the choices we face. But it is a commonly held view. Moreover, casting the debate this way tends to equate agricultural production with economic “development” in rural areas—a connection that cannot withstand scrutiny.

Nonetheless, I suspect that many times you are asked to comment on the presumed conflict between increasing agricultural production

and some indicator of environmental quality. And, I likewise suspect this discussion is often cast as a choice between the economic viability of rural areas and the "preservation" of some quaint landscape. Let me take as given my earlier assertion that increased agricultural production is only indirectly related to the economic viability of rural areas. Starting here will allow us, in the short time available, to pursue more carefully the central topic, which is the claimed conflict between the economic viability of rural areas (economic "development") and environmental quality. I will suggest that this "conflict" is simply an artifact of how the issues are framed and discussed.

Underlying the issues before us are important questions concerning perceptions of entitlements that determine individual exposures to environmental costs. I am concerned at the start, therefore, with the issue of alternative entitlement structures in environmental policy. I start with this subject precisely because the status quo structure of actual or presumed entitlements determines which parties to environmental disputes are currently bearing unwanted costs, which parties must bear the transaction costs of institutional change through new environmental policy, and which parties are able to call upon the coercive power of the state to protect their interests. These aspects dominate both the way in which the choice problem will be framed and the language that will be used in the policy debate. Language and concepts are critical here, since individuals will claim certain "rights" (or "property rights") in hopes of furthering their special interest in certain outcomes.

Because many environmental disputes are of recent origin, or because new knowledge has only recently demonstrated the real cause of observed environmental problems, much environmental policy operates in a domain where there is "no law," or where the legal situation of the contending parties is unclear. Environmental policy is, at bottom, about determining which party to such disputes shall receive protection from the state. When protection is forthcoming, that party acquires a *right*. To have a "right" is to have the capacity to call upon the state to protect one's current or future interests in particular outcomes (Bromley, 1991a).

To illustrate the role of presumed entitlements in the assessment of environmental risk, consider an example of the chemical contamination of a river important for commercial fishing. Assume farmers are currently using pesticides that wash into the river without regard for the interests of the fishing industry. Under this status quo setting the entire public discussion will tend to focus on levels of concentration of certain chemical residues in fish. Various experts will be called to comment on the meaning of such indicators as parts per billion of certain chemical compounds. Others will advise on the number of servings per month of fish that can reasonably be considered safe. Experts will disagree, of course, and so the argument will

persist. During this time, farmers will be able to continue their use of the pesticides.

In the interest of "resolving" this policy problem there will be research support to assess the tolerance levels of laboratory animals to different doses of the subject compounds. The debate will rage, and scientific experts will participate in discussions regarding the processing of information by citizens. In the meantime there will be economic loss to the local fishing industry as its product falls under a cloud of suspicion regarding safety. The media may well report the hard luck of families dependent upon the fishery. There will also, most assuredly, be reports of those families dependent upon agricultural production. The problem will be defined—or framed—as one of jobs and economic activity versus a pure environment. Some will even seek to cast the issue as a choice of letting the "market work" as against bowing to "government intervention." That is, the status quo—in which chemical residues wash into the river—will be regarded by some as letting the market work. Government *interference in the market* will, in all probability, be the term used to refer to a proposed change in the status quo situation in order to protect the interests of the fishing families and the concerns of those who seek to consume fish.

The strange convolution of facts and concepts that emerges from this stylized environmental conflict will tend to dominate public policy discussions and hence the ultimate resolution of the problem. Farmers will no doubt claim that they have a "right" to use pesticides as they have been doing for some time now. Those who fish in the river will claim they have a "right" to be free from the threat of chemical contamination of fish. While these conflicting claims of a "right" are incoherent, there is a more fundamental problem. Specifically, while such *rights claims* tend to dominate discussions of environmental policy, little attention is paid to the role of presumed or actual entitlements in the debate. There are two related aspects of this problem.

First, the status quo entitlement structure will be taken as the legitimate starting point for legal—as well as political and economic—deliberations. Second, each party to a dispute will employ specific language to buttress its particular claim. We know well that few words pack as much emotional appeal as "rights." Our political history and rhetoric is fairly cluttered with rights claims—a "right to keep and bear arms," a "right to the pursuit of happiness," a "right to property," a "right against unreasonable search," a "right to due process," a "right to free speech," and more. Indeed, even the recent debates over smoking in public places is dominated by those claiming they have a "right" to smoke, while others claim they have a "right" to clean air. These self-serving appeals are not at all helpful, primarily because they betray a fundamental confusion over what constitutes a right. I will illustrate how the presumed status

quo rights structure dominates the nature of the debate over environmental policy.

Consider, once again, the above example of chemical contamination of fishing grounds. Suppose we imagine a quite different status quo entitlement structure—one in which farmers are prohibited from allowing any pesticides to wash into the river. Under this alternative entitlement structure a very different technical process would be followed by the agricultural industry—one in which the discharge of residues into the river is not part of the accepted practice for growing certain crops. This new legal regime—an entitlement structure—would certainly be an effective incentive for technical innovation in agriculture so that crops might be grown without the use of the pesticides under consideration. Of equal importance, it would mean that any discussions to alter the status quo legal regime would put the burden of proof on the agricultural sector rather than on consumers of fish (and the fishing industry).

While the debate would still rage over the safety of fish exposed to chemical residues, notice that the consumers of fish would not be exposed to a health risk during that debate. It is also worth noting that the interests of farmers in using pesticides would become very much like the debates over the siting of hazardous waste facilities. In these latter debates, it is the producer of such wastes who must address the disposal of unwanted residues. The transaction costs fall on the producer whose dominant incentive is to induce reluctant communities to accept the wastes. While the search goes on, those opposed to such dumping are protected from unwanted disposal of hazardous wastes. These individuals stand protected by the presumptive rights in the status quo.

A more fundamental difference must also be noted. We saw, previously, that if farmers were suddenly to be prevented from allowing pesticide residues to wash into the river, the situation would most likely be characterized as one of government "interference" with the farmers. Those who accepted this description might also be tempted to suggest that the farmers had a "right" to allow residues to wash into the river and that the new policy represented an interference with that "right." As noted, such assertions represent a fundamental confusion over the concept of a right. Until such confusions are addressed, it will be impossible to develop a coherent approach to the problem of environmental policy. I have addressed this issue in more detail elsewhere [Bromley and Hodge]. For now, it is sufficient to consider how the presumed entitlement structure of the status quo leads to a particular idiom of regulation in which the language and concepts of economic analysis carry unwarranted weight.

## The Language of Loss

In a recent issue of *Science* magazine, David Zilberman and his co-authors reviewed a number of studies addressing the alleged “losses” from the banning of agricultural chemicals grouped under the general heading of “pesticides.” This article is of interest precisely because of the framing of the issues before us. As with all discussions of environmental policy, economists are encouraged to assess the costs and benefits of a change in the status quo. In the present instance, California’s proposition 128 provided a convenient vehicle for this assessment, but the article also concerned the United States as a whole. In discussing the probable impacts of various regulatory actions, the authors noted that consumers will face a “loss” of \$18 million. Elsewhere it was claimed that consumers rather than producers would face the “largest total loss.” Finally, there were repeated references to the “costs,” the “impacts” and the “losses” that would emanate from a variety of restrictions on pesticides in American agriculture.

I refer to this approach as highlighting the *language of loss*—a regulatory idiom, as it were. Discussing pesticide use in agriculture in this manner *frames the debate* about chemicals in a way that distorts the choices we face, and therefore, about the decisions likely to be taken. This particular framing of the issues rests solely on a particular concept of the base against which change is to be evaluated, and it is that base that allows the analyst to talk of the “losses” from a ban on agricultural chemicals. To be sure, all policy discussions must be evaluated against some reference point, and in the regulatory business that reference point always seems to be the status quo. Unfortunately, the status quo has a dubious claim on our analytical attention. To illustrate this point, let me digress a moment on technical change.

Technical change brings myriad opportunities to the modern economy, most profound among those opportunities is the prospect for the adopting entrepreneur to save money—thereby enhancing one’s competitive position. It is well understood that early adopters reap the bulk of the economic windfall from technical change. If markets work reasonably well, and if others also adopt the new technique, aggregate production will increase leading to price declines. Eventually, the *extra-normal* profit is squeezed out of the sector as consumers benefit through lower prices. Consumers—not producers—are the real winners when technical change occurs.

Pesticides represent a classic example of technical innovation; farmers can control pests more effectively (that is, at a lower cost) than with other methods. The only proviso, and the key here, is that the full costs of pesticide use are incorporated into the price farmers pay for pesticides. Environmental policy is precisely concerned with the reality that not all of the relevant costs of pesticide use are reflected in the price that a farmer pays for a unit of the compound.

When this fact is brought to the attention of policy makers by those forced to bear the unwanted costs of pesticide use, new rules on pesticide use are the obvious result. Those new rules may encompass taxes to make the per-unit cost of chemicals more expensive to the user, thereby creating an incentive to reduce their total use. Or, there may be a ban on certain compounds. Note that a ban on chemical compounds is analytically equivalent to a price so high that no producer would find it feasible to use that particular input. Regardless, the effort is directed toward getting the price of chemicals "right" through getting the rules "right."

In a very important sense then, a new constellation of rules regarding pesticide use in agriculture must be understood as rectifying the temporary circumstances under which some producers and consumers have managed to reap ill-gotten gains. Put somewhat differently, farmers will have to revert to *the prior technique* for controlling pests. Of course the world does not stand still, and we would not expect to see thousands of farm laborers out in the fields with hoes dead set against weeds. Some alternative to the banned pesticides will be found and agricultural production will certainly continue.

The essential point here is that pronouncements about consumer and producer *losses* must be considered with some care. These are "losses" as measured against a status quo in which agricultural producers had been free to impose external costs on society at large. The former economic gains that Zilberman, et al. choose to call "losses" have come at the expense of those forced to bear the unwanted costs of their use. We have here a simple case of the shifting of economic advantage among members of the populace. Producers and consumers of the affected products had a temporary windfall, and now it is being taken away. Are we so certain that "loss" is the correct word to describe this new situation, particularly when that language forms an essential part of the arsenal used to oppose any new regulations? Put in its most stark terms, the economic gains realized by producers and consumers since the introduction of the particular pesticides now considered for restriction constitute theft. Given the intense interest in recovering natural resource damages from chemical spills and accidents, it is interesting that few notice the extent to which past use of certain chemicals has imposed its own form of damages. Cast in this light, the alleged "losses" to consumers of lettuce, almonds, grapes, oranges and strawberries (or whatever) takes on new meaning. Indeed, truth be told, the consumers (and producers) of those products have reaped a nice windfall at the expense of others. Now that the windfall is recognized as having come at the expense of those forced to bear unwanted costs, taking it away somehow gets characterized as a "loss."

The idiom of regulation is a function of how the policy issue is framed. If the status quo is regarded as the legitimate norm against which change is to be assessed, then one tries to estimate the costs

of alternative regulatory scenarios. These costs are labeled “losses” or “impacts” and the magnitude of this is then weighed versus the alleged benefits of the regulation. In environmental policy many of the benefits are of an uncertain kind, or they will appear in the future. Those who must bear the “cost” of a change in the status quo will mobilize to resist change, using the reality of nebulous benefits as against the claimed known “costs” of change.

The language of losses must be seen for what it is, and that is a false and misleading picture of the choices we face. Zilberman, et al. do mention the need to model long-run changes in supply and demand. That is indeed essential. But the policy issue still turns on the notion of the status quo against which change is to be evaluated. As long as the idiom of regulation insists on labelling any change in the status quo as a “loss” we are prevented from reaching correct decisions.

### **Roles and Positions**

In my reaction to Commissioner McGuire I chided him for his extremism in defense of agricultural production regardless of the environmental implications. I noted that while his salary was paid by all of the citizens of New York, his approach seemed to suggest that the interests of farmers were all that mattered. If consumers were poisoned by chemical residues on fruits and vegetables, it was some other agency's problem. To a certain extent, I fear that those of us employed by colleges of agriculture risk being thought advocates for increased agricultural production at all cost.

We have here a story about the intense interplay between technical change, university research and public perceptions of the good life. I will make three interrelated points. First, one major function of universities is to be concerned with technological change broadly defined. That is, technology—and technological change—are policy choices in a society with universities being at the core of that process. We think of ourselves as being involved in teaching and research when, in fact, we are defining (and redefining) the technological domain of society. Because new knowledge is the central component of technology, it is entirely consistent to regard the knowledge industry as the essence of technology and technological change. If we fail to understand this simple fact, and if we do not understand technological change, then we are bound to make serious mistakes in educational policy.

The second point is that those of us involved in agriculture and natural resources at the university level have important clientele problems. By this I mean that many educational programs and policies, and the sequence of events that logically follow from those programs and policies, are often at odds with the larger interests of the citizenry—even that segment of it which we regard as our natural



clientele. Unless we grasp this fact there will be unhappy consequences in the intermediate run, and serious problems in the longer run.

My final point is that science and scientific “progress” have finally been demystified among the populace and we will never again return to an era in which scientists carry extraordinary legitimacy. Scientism is a declining religion, even among scientists. These three issues are central to the development of educational policies that will affect agricultural and natural resource programs.

In my *Choices* article [Bromley, 1991b] I discussed the role of technology and technical change in the context of bovine somatotropin (BST). I argued there that the agricultural research enterprise as we know it will surely die unless there is more public accountability. Richard McGuire argued in a companion piece that “environmentalists” were to blame for all manner of undesirable trends in modern life—including the eventual urban diet of seaweed, soybeans and brown rice. He noted that environmentalists and farmers were allies in the good old days, but that somehow that divine partnership had dissolved in recent times as environmentalists became more strident—and ridiculous—in their rhetoric.

I believe that times have changed for two reasons. First, the stakes are now higher than previously. That is, the costs of a mistake are potentially higher when it is a matter of toxins getting into groundwater. Secondly, we are now in the midst of a general process in which science is being challenged. I call this the demystification of science and the general devaluation of experts. It should be clear that the citizenry, rightly or wrongly, no longer trusts scientists to make choices that are in the long-run interest of society. From an era in which white-smocked doctors declared the virtues of Camel cigarettes, it is now obvious that someone appearing with a white smock is *a priori* reason to marshal one’s defenses against the “experts.” Cigarettes, thalidomide and the recreational observation of nuclear tests in Nevada and Utah are but three obvious instances in which the experts were wrong. There are many more examples that one could cite. We have, in the past decade, seen the complete demystification of science, and therefore its delegitimization, in the eyes of many.

The citizenry is now much better educated, better informed, and more concerned with the world around them. For that happy result we have the universities to thank. Those who now plead for an environment of unaccountable science are sadly mistaken if they hold out hope for that result. The demystification of science reflects back on the colleges of agriculture at which most of us find employment. There are two reasons why colleges of agriculture cannot continue to be justified on the grounds that they are helping farmers. First, it is not true by the fallacy of composition. Second, it is not politically acceptable because the interests of farmers will often be at odds

with the interests of the general citizenry. Pesticide use, soil erosion, groundwater pollution and government programs to redistribute wealth to agriculture are but a few examples.

Colleges of agriculture can extract themselves from part of the dilemma only by gradually giving up responsibility for the well-being of farmers. Perhaps it is time to become, instead, more like business schools, engineering schools and other professional schools—none of whom get blamed when businesses fail. Those schools exist to create new knowledge pertinent to a particular class of economic activity, and to work with industry on problems. But never have they assumed they were responsible for the health of a particular sector. When the machine tool industry in Wisconsin was having difficulty surviving, of course the College of Engineering rushed to help out. And that is the very essence of our land grant university. But that help was in the form of new technology that displaced a few workers and probably disadvantaged a few firms that could not afford to invest in the new equipment. Did those firms who failed then blame the College of Engineering? I doubt it. They failed because they could not compete in a world economy—just as lots of farmers fail for the same reason.

As the number and influence of rural legislators has fallen in the state there is less of a rural voice in state politics. Those few “voices of agriculture” who remain are without many allies and they seem to believe we should fill that role. Hence, we get brought in as rural advocates on many issues that we probably should not. It is possible that our lobbying and cultivation of farm groups has brought on some of our trouble. There is no way we can satisfy all of them since they represent such disparate visions of what agriculture is and should be.

As we become concerned with the broader implications of agricultural research, we automatically cultivate a new clientele. We can show that, while we continue our commitment to productive efficiency on international competitiveness grounds, we also have a commitment to research on the problems that arise from that process. Each research project carries implications for which groups in society will be differentially advantaged and disadvantaged, and it helps us if we admit this at the beginning—and pledge to study that issue too. The larger society has a legitimate right to know how its tax dollars are being expended in the research arena. I think we show ourselves to be responsible if we recognize that larger interest and show that we, too, are concerned.

## **Conclusion**

I have tried here to emphasize the importance of language and concepts in thinking about the “balance” between environmental concerns and economic development. Central here are notions of

the status quo legal position of parties to a dispute and the language economists use when assessing policy options. To label certain impacts as "losses" not only distorts the choice problem, but also implies some legitimacy of the status quo. Our public policy education will be coherent only if we are conscious of how language and concepts dominate the policy dialogue.

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