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Ned D. Bayley

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MEMOIRS OF A FOX

*By Ned D. Bayley**

The curtain has come down on one production of "The Foxes Guarding the Chicken-house." I was a member of the cast. In fact, for two and a half years I played the leading role among the characters considered by many as the Foxes.

The plot centered around the actions of the U.S. Department of Agriculture in regulating the use of pesticides. Since farmers are the major users of pesticides and since agribusiness companies produce them, the USDA regulatory responsibilities and actions regarding pesticide use and safety have often been described as the "foxes guarding the chicken-house."

The pesticide regulatory activities in the USDA are not the only ones which have been so described, for the actions of the Federal Aviation Administration, the Food and Drug Administration, the Federal Communications Commission and the Federal Maritime Commission and others have also been similarly portrayed. However, the establishment of the Environmental Protection Agency in December 1970 removed the pesticide regulatory unit from USDA and provides an opportunity for retrospective observations.

My experience in trying to make the USDA actions fully responsive to public need has convinced me that pinning the difficulties involved on a "fox-guarding-the-chicken-house" concept is dangerously simplistic. Unless other problems, some of them more important than any agricultural bias of the USDA, are also openly recognized and corrected, this country's confidence in pesticide regulation as well as many other regulatory activities of the Federal Government will not be restored.

What are these other factors? There are five which I find of major importance: one, the conditioning of civil servants over long periods of time to one or two interest groups; two, the manner in which a conditioned bureaucracy responds when a sudden onslaught

of criticism comes from a new source; three, the administrative attitude of a regulatory agency when its activities are dominated by a scientific point of view; four, the division of regulatory responsibilities among several agencies of the Federal Government; and five, the change that has taken place in public attitudes toward the traditional posture of agencies that exist to protect the public and toward the responsibility of the user of products in avoiding misuse.

The regulation of pesticides began in 1910¹ with a law designed to protect buyers, mostly farmers, from possible misrepresentation of what the chemicals could do. The USDA was given the responsibility of protecting the farmers. The pesticide chemical industry geared up to protect themselves against any excessive regulatory action.

During this early period, the personnel administering the regulations were conditioned to responding to criticism in certain ways. Conditioned responses of civil servants to outside criticism is as normal as the conditioned reflexes of the human body to external nervous stimuli. Such responses are not an indication that civil servants are inferior citizens or that they, any more than other people, are corruptible. To the contrary, the people administering the pesticide regulations have a long history of dedication to purpose and pride in their contribution to pesticide effectiveness and safety.

Interestingly enough it is that very dedication which makes them susceptible to conditioning by criticism. All dedicated people, and particularly organizations, seek feedback or reinforcement as a measure of their effectiveness. For regulatory people, these measures may be expressed within the organization in terms of numbers of applications processed, modified, or rejected, or the number of products sampled and tested or the number of products seized.

But in regulatory work, external feedback on effectiveness is not to be found in applause from the public (there usually isn't any) but rather in the low level, or absence, of criticism received. Regulation is a thankless job. The civil servants involved hear only from those parts of the public which are displeased with their actions. Letter writing is one form the public uses to express displeasure and the mail directed to regulatory agencies is often voluminous.

Various interest groups know that in addition to obtaining Congressional assistance, the most effective impact on bureaucratic

decisions can be made by personal visits to the government offices for the presentation of oral arguments.

To reduce the time demanded by such groups, the regulatory agencies have, within the limit of law, often assembled such interest groups collectively in formal or informal advisory committees. Such action allows the critics still more opportunity to criticize because advisory committees often discuss the development of policy as well as the consequences of action.

The objective of the critics is to minimize action adverse to their interests, and one of the objectives of the regulatory civil servants is to minimize the amount of criticism. A Pareto Optimum—the point where further arrangements cannot be made without injuring the interests of either of the negotiating parties—is reached when the interest groups and the civil servants describe their relations as “cooperative.”

It should be a wonder to no one, then, that the civil servants administering pesticide regulations were more conditioned to farmer and chemical company criticism than to public health and environment criticism at the time, immediately following World War II, when the flood of new pesticide chemicals poured onto the market. The facts are that prior to that time, the civil servants had been exposed to relatively little criticism other than that from farmers and chemical company sources.

The tremendous success of new pesticides in saving lives during World War II resulted in a marked buildup in the production of these chemicals. As the war came to an end, these products were made available to the civilian market. Since 1946, the civilian use of pesticides has more than tripled. In addition to agricultural use, most urban and suburban dwellers in the country have been using a great variety of chemicals in a large number of forms, packaged for convenient push-button use.

The growing promiscuousness with which pesticides were being used soon raised cries of alarm, particularly regarding contamination of foods. The bureaucracy responded to some extent. USDA and the pesticide industry worked with Congress in enacting a new law in 1947² and modifying it in 1959.³ The Food and Drug Administration's powers over pesticide residues in foods were strengthened in 1954.⁴

But a series of events occurred in the early 1960's that upset the success with which the pesticide regulators were able to deal with outside criticism. One of these events was the increasing refinement

of analytical technology to the point where pesticide residues on food and in the environment could be detected at levels many fold lower than previously considered possible. Various uses of pesticides that were allowed only if no residues occurred on foods were challenged because residues could now be detected with the newly improved analytical methods.

The impact of these new analytical methods became a public issue at Thanksgiving time in 1959 when the Secretary of Health, Education, and Welfare warned people about traces of pesticide residues on some cranberries. After considerable controversy, the cranberry issue was settled but the vulnerability of existing laws, regulations and policies on pesticides had been clearly exposed.

Another assault on pesticide regulatory procedures occurred as a result of the publication in the fall of 1962 of Rachel Carson's *Silent Spring*. The defensive reaction of the "conditioned" pesticide regulators to *Silent Spring* was to some extent what would be expected. USDA noted the book, justified their current regulatory activities, pointed to new steps towards interagency cooperation in the Federal Government, and requested more funds for research and education. Those who supported Rachel Carson's plea for action to protect the environment were heard but not taken too seriously. Acute concern for the environment was not represented in the long-standing advisory and cooperative arrangements between USDA, the farmers and the pesticide chemical companies.

An additional factor that contributed to defense of the status quo was the placement of the regulatory unit within the research agency of USDA. Because of this placement, the decisions and procedures for decisions were dominated by science-trained and science-oriented personnel. Although scientific data are essential to decision-making on pesticide regulations, I believe (as a scientist who has had to modify his thinking drastically as an administrator) that having a regulatory function operate under a science-dominated administration is a mistake.

Although there are several important differences between science and regulatory administration, the scientist's concept of reality was the most important one affecting the regulation of pesticides in USDA. Reality for a scientist is the validity or lack of validity in a technical hypothesis: what the scientific facts indicate is right is right, and what the facts fail to indicate is wrong.

Requests, demands and recommendations based on information not developed entirely within the framework of scientific disci-

plines are usually immediately suspect. Conclusions based even in part on exaggerations or over-generalizations are justification for outrageous indignation, and the integrity of the person who puts forth such conclusions is subject to question. These basic ethics are rigidly adhered to by nearly all scientists within their field of proficiency, even though they are as generally ignored by scientists as by other persons when drawing conclusions outside their own fields.

Regulatory civil servants have an obligation, as do scientists, to assemble and utilize all the facts available, but they cannot afford in the public interest to reject or condemn conclusions in the manner in which scientists are trained—i.e., because a part of the supporting evidence is wrong. They have an obligation to sort through the large amount of information which is submitted to them, reach beyond the emotional fervor with which it is often presented, and sift out those portions which are valid and which may require action. The training needed for this type of activity is much closer to that of a jurist and a public administrator than that usually provided to a scientist.

For these reasons when the public outcry over *Silent Spring* reached the science-oriented pesticide regulatory unit in USDA, the reaction was one of professional indignation and outrage. The book was written in emotional tones. Colorful, non-scientific adjectives had been substituted for detached and dispassionate scientific data. The author insulted the science-trained regulators by accusing them in terms outside the framework of their own disciplines.⁵

USDA pesticide regulators were not alone in this reaction. They had support from their scientific colleagues within the USDA research agency, from their colleagues in colleges and universities, and even from some medical scientists. One well-known public health authority stated that Rachel Carson “abandons scientific proof and truth and combats them with exaggeration and unscientific deductive reasoning based on axioms of her own making.” Still another medical researcher stated, “. . . in view of her scientific qualifications in contrast to those of our distinguished scientific leaders and statesmen, this book should be ignored.”

It is not surprising then that the science-oriented pesticide regulatory administrators in USDA, instead of sifting out the valid conclusions and warnings in *Silent Spring*, spent most of their efforts in justifying their current activities based on the “facts”

they had. They reacted to her portrait of total disaster instead of acknowledging that many of her accounts of localized damage had occurred and were occurring with increasing frequency. They were insulted by her attacks on bureaucratic obfuscation instead of acknowledging that she, too, recognized the need to control pests at the same time she was issuing a warning about the potential consequences of present control methods. They were appalled by the strength of her adjectives and her casual treatment of technical details instead of being gratified at the sharp manner in which she pointed out the shortcomings of available pest control methods.

Characteristic also of research-oriented personnel were the recommendations of the President's Science Advisory Committee in reaction to *Silent Spring*. Their report called for reviews and some mild changes in pesticide regulations and pest control programs; however, their recommendations were largely for data-gathering programs, expanded research and education efforts.

A second problem with the placement of the pesticides regulation unit within the Agricultural Research Service was the emphasis on research versus regulation in approaching pesticide problems. The agency, in responding to rising public concern, requested more than \$14 million additional support for research, but only slightly more than \$1 million to increase regulatory activities.

Furthermore, the pace of decision-making is drastically different in research and regulatory agencies. Research personnel take the long view—hoping to obtain results in 3, 5, even 10 or 20 years. Regulatory agencies must meet daily crises demanding immediate action. These two concepts of administrative action simply do not mix.

It is true that a number of steps were taken within the Agricultural Research Service of USDA to improve its pesticide regulatory activities during the 1960's. The regulatory unit which had been under the supervision of a larger division was given separate, equal status. In 1964, an amendment to the Federal law⁶ eliminated the right of manufacturers to have a pesticide registered under "protest" against USDA objections. Interagency agreements were developed to increase communication among Federal departments on pest control and pesticide activities. New procedures were adopted to speed up the processing of registration applications.

Nevertheless, these improvements made almost no impact on the major reason for rising public concern—the danger to the total environment. The emphasis in pesticide regulation continued to

be focused on chemicals "safe for users, safe for people living in the area where it is used, safe for crops and livestock, and safe in respect to residues in foods."

A major effort continued on research and education. The researchers' objective: "To find a highly selective pesticide that would be completely safe. A pesticide that is effective, selective and safe would eliminate need for regulation." Only late in the 1960's did the agency change its position to recognize that *all* pesticides, by their nature, would have to be considered economic poisons and would need regulation.

The difficulties in regulating pesticides were also aggravated by the distribution of responsibilities among several agencies of the Federal government, primarily the Agricultural Research Service of Agriculture and the Food and Drug Administration of Health, Education, and Welfare. All applications for registration of chemicals that could leave residues in food were referred to FDA for establishment of a tolerance—either at zero or at some acceptable level. A later interdepartmental agreement provided that applications also be sent to the Department of the Interior. Review comments were to include environmental safety as well as human safety and food residues. The final decision on registration, however, remained in USDA.

Much has been written about the large number of objections to registration of various chemicals which were raised by the other two departments (particularly HEW) and which were subsequently overruled by USDA. This has often been attributed to USDA's bias towards the use of chemical pesticides and its lack of regard for human health and the environment. This bias of the conditioned regulatory unit in USDA may have been a factor but it was not the controlling one. The major deficiency was the failure of the bureaucratic machinery in all three departments.

The interdepartmental agreement, for example, included a provision that a disagreement could be brought before the Secretary of Agriculture by any of the participating departments. Such disagreements could be sent by the operating units of HEW or the Department of Interior directly to the Secretary of Agriculture or brought to his attention by higher echelons, including the other Secretaries themselves. In no single instance did this ever happen despite the large number of recorded disagreements over a long period of time. Under the pressure of Congressional hearings, it was learned that regulatory officials in the lower echelons of all

three departments had kept these issues to themselves, and did not force the disagreements to the level of the Secretary's office. USDA officials bear the major burden of the failure of the interdepartmental agreement since the final decision-making responsibility was theirs, but HEW and the Department of Interior are not free from criticism. Either HEW and Interior did not have sufficient interest in the disagreements to force them, or they felt the price of involving political appointees in such decisions was too great. Whatever the motivation, none of the departments used the administrative means that were available to them to settle their disagreements prior to 1969.

Even in the best of circumstances, interdepartmental arrangements for making routine decisions are difficult to execute. Secretary Hardin, Secretary Finch, and Secretary Hickel were fully and sincerely committed to work together on pesticide problems. The interdepartmental agreement was revised by them to improve the channels for bringing disagreements to the Secretaries' offices for settlement. The Subcabinet officers in all three departments were committed to making the arrangement work.

Yet, I constantly found myself reaching deep into the organization in order to make sure that the disagreements would surface. In addition, where there might be a willingness on the part of some HEW personnel to agree verbally with USDA positions on health aspects of registrations, there was an unwillingness to so state in writing. In one instance the solution was to send a letter across at Subcabinet level stating that the letter confirmed USDA's understanding of HEW's position.

USDA was committed to making the agreement work despite the difficulties involved in the split responsibilities. Nevertheless, the expectation of continued difficulties with interdepartmental decision-making was one of the reasons that USDA supported the consolidation of pesticide regulation in the new Environmental Protection Agency.

In combination with the foregoing factors there was still another which contributed to the decline of public confidence in the regulation of pesticides. It was the change the public demanded in the amount and kind of information it expected from regulatory agencies. USDA had had a long tradition of providing its services and executing its regulations with a minimum of fanfare.

This concept worked for many years. Public confidence in new technology was high. Success stories pouring out from research and

pest control agencies assured the public of better things yet to come. In recent years, the attitude of the public changed. The utopian promises of technology turned into disillusionment as atomic energy threatened worldwide destruction and the multitude of products we thought were necessary for living, including pesticides, polluted our lands and streams and air. These events raised serious doubts about the assurances so lavishly proclaimed by the public administrator regulating that technology.

The public wanted to be told what was wrong and what needed to be done before any corrective action was taken. And with frequently more than one choice of action available, the public wanted to know what these choices were and on what basis administrators would make the selection. The public wanted a stronger role in making these selections.

The day of professional authoritarianism was over and the regulatory, research and extension education agencies in Agriculture did not know it. They found it impossible to modify their traditionally quiet way of doing the public's business either fast enough or far enough to retain the public's confidence in their actions. Even today, many state, university and federal agricultural agencies as well as others are having difficulty adjusting to the "noisy" way of doing the public's business.

A longstanding philosophy regarding the responsibility of product users for their own safety had considerable influence on the way pesticides were regulated. The laws, regulations and the enforcement actions were based almost entirely on the premise that if instructions for use and warnings of hazard were adequately stated on the product labels, the responsibility of the public agency to the user was fulfilled. If the user injured himself, his family, his plants or animals because he did not follow instructions on the label, he had only himself to blame.

Accepting responsibility for self-injury from use of hazardous materials, both man-made and living, has been and still is taken for granted by most farmers as risks that go with their way of life. Farming has always been a hazardous occupation. Tractors, all kinds of other power equipment, horses, cattle, pitchforks, axes, storms, floods, diseases and pests kill and injure farmers and their crops and livestock every day of the year. People who farm for themselves consider the use of poisonous chemicals as only another hazard to be reckoned with. From their point of view, the injuries to them and accidents to their crops and livestock resulting from the use of

pesticides are much less than the injuries from other hazards of farming.

Not so with the homeowners and urban consumers. They expect that the products they purchase are useable with a minimum of skills, detailed procedures or cautions. They demand that the safety and effectiveness of a product be beyond doubt or that its hazards be so dramatically displayed that they cannot be ignored or overlooked. If these needs cannot be met, then they do not believe the product should be available for them to buy.

The farm worker's thinking is somewhere in between that of the urban consumer and the independent farmer. In addition, the uncertainties of their income and the often transient nature of their living tend to limit their acceptance of training or precautions in the use of hazardous substances.

Thus, the rapidly growing use of pesticides by homeowners and urban consumers, the increasingly widespread use by farmers and public agencies, the involvement of large numbers of farm employees either directly or indirectly in the use of these chemicals made labelling laws ineffective as the sole means for regulating pesticides.

The farm-operator-oriented Department of Agriculture was slow to recognize this changing need. This bias did not occur because of an interest in protecting farmers or agribusiness from regulation but because of a philosophical heritage from farmers regarding user responsibility.

No appraisal of past mistakes is really useful unless recommendations can also be offered for the future. Hindsight is effective only when it is used to avoid, or at least reduce, the future probability of failures.

Regulatory agencies *can* be responsive to changing public needs. But major changes will need to be made in many of the organizational, staffing and operational patterns now in existence.

The actual staffing of an agency itself can help create the potential for introducing new ideas. In the past, more often than not, replacement personnel have been recommended because of their acquaintance with the *existing* operations of the organization and not because they might bring in new insights and ideas for change.

And while scientists can and must play an important role in regulatory decision-making, their technical expertise should complement the sensitivity to public needs and legal procedures that concerned citizens, lawyers, administrators, political scientists and

others from a wide range of professions and interests can also contribute.

Within the staff groups that are charged with review and evaluation of specific regulatory responsibilities, there should be at least one group that is continually obtaining and evaluating information useful in anticipating the need for future changes. This is a group that is missing in most regulatory agencies. The agencies become so involved in meeting daily crises that they can seldom get sufficiently on top of their work to take a look at trends and their implications for the future. In those agencies where such activity does go on, it is usually accomplished by ad hoc groups or consultants who do not have the time or responsibility to do a thorough and comprehensive evaluation.

The use of external groups such as advisory committees must be more than just an accommodation to the organized critics of the agency. Advisory groups need to represent all segments of society that may be affected by the agency's actions. In agriculture, they would include consumers, conservationists, public health personnel, urban industry representatives, manufacturers and farmers—the small as well as the large. People representing some of these interests are not organized and are difficult to select. Nevertheless, they must be brought into the system so they can contribute to the attitudes and positions of the agency.

Those invited to participate on advisory groups must have assurance that the establishment of the group is more than window-dressing to legitimize decisions made by the agency. They must not be made a captive of the agency and thereby inhibited from disowning the agency's decisions. The wariness of being used—of being co-opted—prevents some people from accepting representation on advisory groups. Often, they are the very people most needed with the most to contribute to needed change.

In some cases, different advisory groups for each point of view may be necessary to obtain constructive advice. In any event, the advisory structure developed must provide for the most active injection of ideas from people who represent those affected by the agency's actions, and not just those groups being regulated. Some form of staggered rotation of advisory group membership is also essential to provide for change of ideas along with continuity of understanding.

Such "opening-up" of the regulatory agency would make it more responsive to changing public needs. Another highly important

opening-up procedure is that which deals directly with public information. The agency must take the public into its confidence and tell it like it is. The administrator of a regulatory agency must learn to be comfortable and to find his challenges and satisfactions in the debate and sometimes acrimonious controversy that will follow when the public knows what the problems are and what the choices for solutions are. Administrators and information personnel must be dedicated to objectivity, to being open and frank with the public and unafraid to admit fallibility.

The placement of regulatory responsibilities in the Federal Government ought also to be organized so that such responsibilities are as undivided as possible. Responsibilities that are diffused through a number of agencies and administrators not only frustrate the public and regulated parties who must deal with the regulations but also provide a fertile soil for bureaucratic disagreement, misunderstanding, infighting and ineffectiveness.

For pesticides the consolidation of responsibilities has essentially been accomplished by the establishment of the Environmental Protection Agency. For other regulatory responsibilities, the principle of establishing agencies and departments along the lines of National goals provides the basis for consolidating operations having common objectives.

As long as there are chickens to be guarded, there will be foxes to worry about. But because they are an easily recognized threat they are also among the easiest to deal with. More difficult are those dangers not so highly visible: The design of the chicken house may be hopelessly out of date; new threats to the chickens' safety may have developed; geese and turkeys may have been added to the flock with no corresponding adjustment in management practices; the reasons for wanting to protect the chickens in the first place may have changed.

Along with keeping a sharp eye out for fox-like characteristics among ourselves, we who are charged with the administration of regulatory functions must be ever-mindful of the needs and wishes of those who actually own the chickens. We must provide for a constant infusion of ideas and insights and evaluation of changing public needs if we are to be truly responsible—and responsive—servants of the people.



FOOTNOTES

* Director, Science and Education, U.S. Department of Agriculture.

¹ Act of April 26, 1910, ch. 191, 36 Stat. 335 (repealed, Act of June 25, 1947, ch. 125, §16, 61 Stat. 172).

² 61 Stat. 163, 7 U.S.C. §135-135(k).

³ 73 Stat. 286, 7 U.S.C. §135-135(k).

⁴ 68 Stat. 511, 21 U.S.C. §342.

⁵ I was an active researcher in those days and reacted just as indignantly as all the rest of my colleagues to the exaggerations and emotional appeal of *Silent Spring*.

⁶ 78 Stat. 190, 7 U.S.C. §135-135(k).