Perspective on... Public Information, Science, and the Regulatory Process

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Questions of public understanding and public information or education in regulatory matters have been prominent in recent months. A number of key questions are rasised and answers to some of these seem to be emerging. What are the opportunities for public education and information on specific regulatory matters dealing with health and the environment? How can public information complement the process of regulation? How can the factors which compose the balancing process in decision-making be reflected in public information? How can highly technical material which may be at the root of a regulatory decision be appropriately conveyed to the public informational media and to the public?

At this writing, many environmental problems are viewed by the public with a combination of fear and skepticism. For many, announcements of environmental insults or hazards are interpreted with exceptional fear. Yet, there is reluctance at times to accept fully the explanations and the details offered as background for regulatory responses. There has been, admittedly, a tendency of some parts of the press to favor dramatic news and those portions of environmental incidents which evoke particular attention. A balanced view is not always the result. Generally, there has been less than a systematic attempt to reflect the scientific details of either the environmental hazard or of the response to it. What often stands out is a reflection of a recently performed piece of experimental work, unconfirmed and without critical interpretation by any of the rest of the scientific community. Both the press and scientists appear to own responsibilities here. The former, in its zeal to seek a newsworthy or even sensational story, seeks out or readily accepts tentative scientific information. The latter, on occasion, make available to the press the results of their work, however tentative, creating the impression as they do, of an implied threat to human health and well-being.

There are additional problems and responsibilities as well. There are many responsible science writers who perform a valuable service of full but critical examination of the scientific aspects of environmental questions. These generally have been the result of a particular initiative and an extraordinary effort on the part of individual writers. There has not, however, been a systematic effort to make available to the public information services the scientific background of the action proposals and decisions of the environmental and consumer-related agencies. In many instances, the scientific and technological issues are complicated and full appreciation requires exceptional effort. Since many of these regulatory judgements have been reached only after laborious deliberation by

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scientists who are thoroughly and critically familiar with the technical aspects, one might well argue that there is a special responsibility to assure that this scientific reasoning is not lost or compromised in the translation contained in the public presentation.

What Are the Special Opportunities for Information and Education?

The conviction underlying much of the discussion of this subject is that there are opportunities or even obligations to educate and to inform and that the public press has an enormous role to play. Yet, to take advantage of any of these opportunities requires a much more systematic effort to engage the public press itself in an educational and informative process than has been traditionally the case.

There appear to be some major areas of public re-education which are needed. For example, a general pattern of evaluation of the hazard to human health of an environmental agent or a commercial product has been thought of popularly as leading to a sort of certification of proof of safety. Except when understood in the narrow sense of scientific proof (tentative demonstration of a scientific phenomenon) this idea of proof is a misnomer. Assurance of safety cannot be guaranteed by the process of scientific fact-finding and interpretation. If experimentation and review have been exercised appropriately, if science has been squeezed for understanding and evaluation to the extent that it can be on any particular question, then it can be said that according to the present level of understanding, the probability of hazard is low. There are two important implications of this type of interpretation. First of all, it recognizes that the assignment of low probability or risk is based on an area of uncertainty as well as on scientific understanding. The problem, of course, is that it is not possible to be certain of the precise extent of this uncertainty. Secondly, the temporal nature of the finding of safety or hazard should be stressed. Often, although improperly, a statement to the public about a particular hazard is interpreted as immutable. Demonstration or "proof" of safety is viewed as proof for all times. Likewise, implication of a hazard is seen not as an interpretation but as a permanent one. Science is a dynamic affair and continually tends to raise new questions and offer new interpretations. New scientific information should be expected to alter our regulatory minds from time to time. We should neither be surprised nor frightened by the advent of new and unexpected findings. Rather, a more accurate public view would include an element of tentativeness. It has been suggested that there is loose analogy here to weather forecasting. Weather prediction, like scientific interpretation, is always subject to uncertainty, is increased in accuracy the more information one collects, but is always subject to change. We are used to errors in weather prediction yet we appreciate that such predictions are a reflection of the limits of that science. A corresponding view toward environmental hazard may have merit.

There is an additional, and special task of public interpretation and information which should be mentioned. It was noted above, that the scientific information which is reflected in environmental decisions often comes both from the established body of science and from recently completed investigations. In recent years, this latter category has often been the data around which an environmental decision has been taken.

Data such as these are unconfirmed, are not always fully explained or interpreted as to meaning, and may or may not be consistent with previous observations in the same area. In brief, they may point toward an *implied* hazard but not a *demonstrated* one. Yet such tentative data are exceedingly common in environmental decision-making and require exceptional care in public interpretation.

What Can Be Done?

There seems to be three parties to this question, the Government agencies, the

press, and members of the scientific community. All three have opportunities for contributions. There seem to be very sound reasons for bringing science writers and other spokesmen for public information into the discussions and meetings of the scientific aspects of environmental and health decisions. Further, not only should they be invited to participate passively, but special efforts should be made to engage them in active if informal discussion in order to assure their understanding of scientific interpretation and judgement.

Scientific meetings on subjects of some importance which may be reflected in regulation are to be strongly encouraged. A recent scientific meeting in NIH on polychlorinated biphenyls is a good example. Not only do these meetings serve to take stock of the then current level of scientific understanding, they also provide a forum for some critical review of recently gathered data. With members of the responsible press in attendance, they offer an opportunity for perspective and background information needed for interpretation of scientific material.

Periodic briefings of science writers in the intervals between crises would seem to have merit. Special briefings should be held when critical issues are foreseen. All of these should serve to provide a fuller scientific background for those to whom public information is a responsibility.

Thus, the press can play a vital role in public education on certain important issues of environmental standards. Educating in some instances, may require a different focus and style than simply informing. The point is that there are a number of opportunities for public education and the press is potentially able to make sizeable contributions. One is the dynamic nature of science and of the changing character of scientific understanding. This will foster public expectation of re-evaluation of past decisions.

Finally, it is important to obtain balanced views and to avoid fanning the fires of sensationalism by the initial publication in the lay press of tentative, unreviewed scientific findings.