

# **Author's Commentary on "Beyond Expertise: One Person's Science, Another Person's Policy"**

Commentary On

Beyond Expertise: One Person's Science, Another Person's Policy

Reams is faced with the decision of whether or not to participate in a regulatory decision-making process. In Part 1, she is invited to participate but refuses to move beyond her role as researcher. However, she is drawn into the controversy because 1) the regulatory decisions are justified based on her research and 2) she is dissatisfied with the final outcome of the decision and feels that the new regulations do not accurately represent her experimental results.

It is important to ask why Reams is wary of stepping outside of her role as researcher. This question attempts to probe ideas about the perceived role of a scientist. She claims that her knowledge is limited and insufficient for the nature of the decision required. Yet, her knowledge of the chemistry of jeckylhydium is likely to be greater than that of any of the EPA's decision makers. Perhaps she is reacting to the idea that it is unprofessional or even unethical to be both a provider of knowledge and an advocate of how to apply it, especially in a situation where one cannot predict with certainty the outcome of various hypothetical scenarios. While science is fundamentally descriptive and necessary in order to define the ethical issues, ethics is prescriptive (Brown, 1987). To engage politically is to exert power, while the objective of scientific research is to pursue knowledge or truth. As a provider of descriptive knowledge, Reams has met her responsibilities as well as may be expected in her role as researcher.

Does Reams have a responsibility to represent her experimental work as it applies to regulatory problems? Her wariness about participation in drafting regulations may stem from the idea that the strength of scientific inquiry comes from its objectivity and a "value-free" context. As a scientist, Reams is trained to apply strict standards for drawing inferences from facts. However, regulatory and public policy decisions

often require decision making without the luxury of complete or conclusive data. If a researcher takes a political stand on a scientifically based issue, there may be the appearance of compromised objectivity. And for a scientist, objectivity is closely related to integrity. Yet Reams is studying the fundamental behavior of a metal that has economic and environmental impacts. In fact, the importance of jeckylhydium may be the reason for the availability of funding for the research. Her interest in this metal is not entirely distinct from its significance.

Who is Reams working for? If her research is funded by governmental agencies then perhaps she does have responsibility to participate in solving the broader regulatory problem. She has succeeded in obtaining research support by suggesting that results from her research may be used to address problems of jeckylhydium pollution and remediation strategies. Her experimental work is implicitly applied research even if it is not explicitly defined as such. In a sense, her discovery of jeckylhydium transformations pushed her basic research efforts into the context of applied research because of the urgency for application. Reams may have to step back and ask a more philosophical question, i.e., who is this science for? If she does scientific research with the hope and intent of making some kind of social contribution, then perhaps she should honor that desire and make a commitment to contributing at the policy level.

In Part 2, Reams agrees to participate in the regulatory decision-making process, but despite her input in the process, she is not satisfied with the results. She is not happy with the final decision to regulate total jeckylhydium in an all or nothing fashion. Dotterer (1929) drew a distinction between a "world-view" and a "life-view," which makes a nice analogy for the use of scientific information in making regulatory policy for jeckylhydium. He defined "world-view" as a description of the facts of a situation and "life-view" or "life-plan" as a blueprint or a plan of action. He argued that the best chance for an effective or successful life-plan comes from adherence to the most accurate world-view. These ideas are metaphors for science and for the application of science to policy. Reams is dissatisfied with the life-plan or regulatory policy for jeckylhydium because the world-view or scientific foundation is based on simplistic assumptions and incomplete knowledge. In the realm of scientific research, generalizations and simplifications are inaccuracies that weaken the foundations of understanding. However, is that also true when science is incorporated into policy? Is simplification necessarily a form of error? And since the regulations are motivated by the need to reduce risk to innocent people, is a less

stringent standard appropriate?

According to Brown (1987), research analysts tend to look at problems from within their own discipline. For example, those who study nuclear power look at risk of failure, not at issues of proliferation, theft, sabotage, routine emission, etc. It is important to ask whether Reams is limited by thinking solely from within the confines of her discipline. She may not be seeing the other factors that press into the decision calculus. On the other hand, Reams may be witnessing a compromise of scientific integrity that will ultimately weaken the life-plan of the regulatory policy itself.

Reams has shared her knowledge as a participant in the policy forum, but she remains dissatisfied with the outcome. She is a jeckylhydium expert, a citizen, and a scientist upholding the values of "good science." And now she decide whether to take further action to promote what she sees as more accurate and appropriate use of her research. Reams's motives would be questionable if insisting on rigorous standards of "good science" resulted in policy that did not serve to protect innocent people from risk. However, it appears that she is trying to optimize both good science and good policy -- not one or the other. Perhaps this situation is drawing her into a new role as "applied scientist." That is a significant departure from basic research and probably more akin to engineering.

## References

- Brown, D. A. "Ethics, Science, and Environmental Regulation." *Environmental Ethics* 9 (1987): 331-350.
- Dotterer, R. H. *Philosophy By Way of the Sciences*. New York: MacMillan, 1929.