

# **Deborah Johnson's Commentary on "The Federal Scientist: Multiple Roles and Moral Issues"**

Commentary On

The Federal Scientist: Multiple Roles and Moral Issues

This case presents three distinct situations, all having to do with research on and administration of the disposal of toxic wastes. The situations are separable in the sense that any one could arise (and would be difficult to resolve) independent of any other. Comparable situations arise in dealing with other kinds of research and decision making, but in this case the dilemmas are made all that more difficult because of the risks posed by toxic wastes and because of the degree of uncertainty about risks of this kind. I will analyze two of the situations by describing the core issue and then identify reasonable interpretations of the responsibilities of Alice, the central decision maker in this case.

The first situation presents Alice's dilemma in reviewing technical reports and recommending action based on this review. The task involves making judgments about the promise of lines of research or the potential reliability of new methodologies. This is a daunting challenge in itself because it implicitly involves uncertainty; that is, judgments have to be made to create evidence and experience before they exist (or exist to a high degree). The task is all that more difficult in this case because it involves determining the risks of toxic waste sites, where errors in judgment can have catastrophic effects. So, Alice has a tough job.

Dr. von Wegner has come up with a new methodology, and he presents it to Alice as an extremely viable methodology. Alice later finds, however, that the validity of the methodology is contested. The question is raised as to whether von Wegner had a responsibility to tell Alice about the controversy over his methodology.

Two major issues are apparent here. One is the question of how Alice, or anyone in a situation like hers, should proceed when faced with controversy as well as uncertainty about new research and research techniques. The second question has

to do with practices in science when it comes to research evaluation: How should researchers' responsibilities in reporting on their research be defined? Should they be expected to present their research in the best possible light? Or should they be expected to disclose any controversy or uncertainty surrounding their research?

I will make some suggestions on how to think about these questions. On the first question, it seems clear that Alice ultimately will have to use her judgment. Because of the uncertainty involved, a clear right answer is not going to emerge. Her best strategy is to gather as much information as she can, from von Wegner, as well as his critics. In the end, she will just have to make a tough call. Perhaps what is most important here is that she be able to explain to others why she has made the judgment she makes. Good reasons will help her defend her judgment whether she recommends funding for further development of the methodology and it turns out to be unusable or she does not fund the research and it turns out to be the best methodology produced - by other funding agencies.

On the second question, it seems most important that a policy be adopted so that all parties know what to expect and can determine when standards have been violated. My hunch is that it is better (for science and the public) to set a standard of scientists representing their research in the best possible light and not expecting them to disclose controversy. Scientists are less likely than others to do a good job of explaining controversy over their work.

Moreover, it seems better to have the expectation that someone in Alice's position should seek the advice of others before embracing a methodology presented by its originator. This issue is precisely why journals and funding agencies use a system of peer review when making decisions about what to publish or fund. To be sure, the process may eliminate some research that would have been beneficial, but in the long run more good will come.

I am not going to comment on the second situation described in this case. The occurrence of a tremor and publication of new estimations of the risks of a potential site exacerbate the difficulty of the situation. They make Alice's decision more difficult, but they do not add a new element.

The third part of the case seems to pose a complex conflict of interest. Alice has two roles. Her job as an employee of the federal government requires her to review research and methodologies for toxic waste disposal. Implicitly this responsibility

entails making judgments that are in the best interest of the United States. As a graduate student enrolled in a university, Alice has another role. In her role as a student, she is expected to seek the best education she can get, to seek the good opinion of her teachers and to seek good grades. While the federal government may benefit from Alice getting a graduate education, when she goes to school she acts for herself. Her role as a student and her role as an employee have distinct responsibilities and values.

Initially the two roles do not conflict, and Alice can continue to keep them separate. However, if Alice decides to work with Dr. Sharpo on her dissertation, then Alice should not evaluate Sharpo's proposal for funding from her agency. Similarly, if she decides to evaluate Sharpo's proposal for funding, then she should not choose him for a dissertation adviser. Either way, she will appear to be acting/judging with a conflict of interest. If Sharpo is Alice's dissertation adviser, then he is expected to make judgments about Alice on the basis of her work as a graduate student. However, if he knows that she has recommended his grant, he may feel grateful to her and he may be reluctant to evaluate her harshly for fear of jeopardizing future funding. Similarly, if Alice chooses Sharpo as her adviser, her judgment about funding of his proposal may appear to be tainted. She is supposed to make such judgments with an eye to the best interests of her agency (and ultimately the United States), but in her role as student, she will want to please Sharpo. Indeed, as his graduate student, she could even be offered an assistantship under the grant.

I admit this conclusion is disturbing because Alice's desire to work with Sharpo and her desire to fund his proposal may arise from the same fair appraisal of the potential of his research. Because she thinks the research is so promising, she wants to work with him and fund his research. The problem is that she has two roles and there is no way to be sure that the circumstances of one role will not inappropriately influence her judgment in the other role.

Alice should either remove herself from the decision about Sharpo's proposal or she should stop working with him at the university.