

# Brian Schrag's Commentary on "The Painful Experience"

Commentary On  
The Painful Experience

The debate over the use of animals in scientific research, particularly when pain is inflicted, proceeds at both a general level and at the level of particular cases. (For discussions of some of the broader moral considerations in the use of animals in research see "The Gladiator Sparrow: Ethical Issues in Behavioral Research on Captive Populations of Wild Animals," pp 32-44; "Counting Sheep: Ethical Problems in Animal Research" pp. 82-96, and "Changing the Subject," pp. 97-106, in *Research Ethics: Cases and Commentaries*, Volume 2 [1998]).

Even if all were to agree that research on animals is sometimes justified, that would not settle the question of whether it would be justified in this case. We all recognize that there is no moral ground for gratuitously inflicting pain on animals. Thus in research experiments that involve inflicting pain on animals, the burden of proof must be on those proposing the experiment to show that the animals' suffering is somehow outweighed by the benefits of the experiment. A written scientific justification for any painful or distressing procedure to animals that cannot be relieved or minimized must be included in the Animal Study Protocol submitted to the Institutional Animal Care and Use Committee (IACUC).

## Issues

In these comments, I will focus on this particular case, which raises a number of ethical issues. 1) Should the experiments have been done at all? What are the relative merits of the researcher's viewpoint and that of someone from the nonscientific community? 2) Even if the experiment is initially justified, is there a point at which it ought to be terminated, and if so, at what point? Related to this question is the issue of whether standards of certainty should be lowered when the cost of achieving involves infliction of pain on animals. 3) Should the protocol approved by the IACUC include points that trigger an evaluation of the decision to

continue the experiment?

Aside from the experiment itself, the case raises issues about the researcher's interaction with his graduate student. 5) Is there adequate dialogue about experimentation on the animals and an atmosphere that encourages open dialogue? Should a lab that routinely experiments on animals have substantive introductory discussions with all entering graduate students on the ethical issues of research on animals in order to create an environment of ongoing dialogue in which students are free to raise issues?

## **The case**

Should the IACUC have approved this experiment? Eric wants to test a drug that might have potential therapeutic efficacy for humans, for example, to relieve pain in inflammatory bowel disease. Thus, the research appears to be on a topic of significance to human welfare. What is at issue is whether that significance outweighs the suffering of the animals in the experiment.

However significant the problem being investigated, one issue that is always relevant in research that inflicts pain on animals is whether or not a particular experiment is likely to yield useful information. It is troubling in this case that, after the experiment is approved, Eric's graduate student Michael does further research and finds data (of which Eric is apparently unaware) that suggest this drug "would not be an effective therapeutic agent against visceral pain and inflammation using the rodent model." Did Eric do an adequate literature search before proposing this experiment? Would the IACUC have approved this proposal had they been aware of Michael's findings? It is possible that the data Michael found were inconclusive and that in Eric's considered opinion, the data were not sufficient to discount the value of the investigation. Nevertheless, it appears that Eric was unaware of the data going into the experiment, and he ought to have a reason for discounting the data. Absent that, it does seem to weaken the case for doing the experiment.

It is also troubling that Michael finds an "alternate model of visceral no inception that is much less painful to the animal" (which again is something of which Eric is unaware or at least did not consider in developing his original protocol). Eric contemplates using the new model, but he decides to use the original model since the alternate is not widely accepted. Eric's judgment may be right, but it does raise

questions about how thoroughly he researched the issue before designing the experiment and presenting his protocol to the IACUC.

Finally, the protocol specifies an intra-animal study where the same animals are used repeatedly as opposed to a between-animal study, which uses each animal only once, hence minimizing pain to any one animal but using more animals. One advantage of the former design is a reduction in the amount of variability in results since fewer animals are used. It may be that Eric is justified in using a model that gives results less subject to variability. This model may increase the certainty of the results, but at the cost of more pain to individual animals.

Suppose one grants that Eric's original design was justified. As the testing progresses, Michael gets inconclusive results. Eric assumes there is a procedural error in the experiment and asks for a repeat of the experiment. Michael again finds inconclusive results. Eric asks for the experiment to be repeated again.

Eric seems to be in denial about the findings of the experiment. One wonders how long he will continue to repeat the experiment if the results continue to be inconclusive. All science must deal with levels of certainty of results. In principle, the more one repeats an experiment, the more confidence one can have in the results. But at what cost should that certainty be purchased? There is a difference between the cost of increasing levels of certainty gained by repeating an experiment in inorganic chemistry, for example, and the cost of increasing levels of certainty when the experiment involves causing considerable pain to animals. The burden of proof is higher for justifying the value of incremental increases in levels of certainty of results when pain to animals is involved.

It is important to realize that the justification for a protocol of an experiment involving pain to animals at the beginning of an experiment may weaken as the results of the experiment come in. When one combines the literature results, which suggest this drug may not be efficacious, with the results of the first two trials, the justification for continuing the experiment may be weaker than the initial justification for the experiment. In an experiment involving infliction of pain on animals, it would be preferable to have some guidelines to indicate when it is no longer appropriate to continue the experiment.

## **Researcher-graduate student**

# interaction

Michael's obvious discomfort with the experiment and Eric's interaction with him suggests other concerns. If Eric is requesting a repeat of the experiment because he suspects Michael is not correctly performing the experiment, then, in light of the animal suffering involved, he has a responsibility to review procedures with Michael and to monitor Michael's work to ensure yet a third trial is not required because of errors on Michael's part. If there is nothing wrong with Michael's execution, then Eric's request for repeated work appears to be inappropriate pressure on Michael to get positive results. Michael may need some vehicle to raise the issue with Eric, and, if that fails, access to someone else to discuss the issue.

If this is a lab that routinely engages in experimentation with animals, it may be desirable to have initial faculty-graduate student discussions as graduate students join the laboratory, regarding the moral issues involved in research on animals as well as reporting new research on models for animal research and guidelines for research on animals. This setting would be appropriate for informing students of the proper procedures to follow if they have questions about the justification of particular experiments or experimental procedures involving animals. This forum would allow issues to be raised in a setting conducive to open discussion and not in the more threatening context of a professor's particular experiment. In this case, Michael would have had an opportunity to understand and evaluate the justification of various animal models before engaging in this specific research. Such a practice may also open lines of communication when students have a particular concern with a professor's experiment; in this case, that may have made it more comfortable for Michael to raise the issues with Eric. It may also open lines of communication when students have a particular concern with a professor's experiment.