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Scientific Autonomy and the 3Rs

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In order to appreciate fully the great impact of Osborne and colleagues' (2009) article, one must recall the logic of professional ethics. Society in essence tasks professionals, including scientists, with the following directive: "You comport yourselves ethically the way we would expect you to if we fully understood what you do, which we don't, but we will know if you fail to do so, and regulate you in a draconian way, our lack of comprehension notwithstanding". Examples of this logic abound. When Congress first became concerned about excessive use of antibiotics as growth promotants in animal feeds, it discovered veterinarians to be a major source of these drugs, and seriously considered suspending veterinarians' ability to prescribe drugs in an extra-label fashion. Since most veterinary drugs are in fact human drugs used off-label, such a policy would have paralyzed veterinary medicine. Similarly, one may recall the strict regulation and correlative loss of autonomy for the accounting profession in the wake of the Enron scandal. Failure on the part of a profession to adhere to socioethical expectations results in loss of freedom, a very undesirable consequence.

Few areas of scientific activity were as historically violative of social trust as the use of animals in research. The original Animal Welfare Act of 1966 emerged as a response to reports of companion animals being stolen by unscrupulous dealers and sold to research, and by appalling treatment of these animals when in the hands of these dealers. The law was enacted to regulate dealers and reassure the public that their pets were safe (Rollin 2006a).

By the 1970s and early 1980s, much more serious social suspicions regarding animal research were emerging, as reports of improper animal care proliferated. The infamous Taub case of 1982, wherein deafferented monkeys were revealed to be deprived of veterinary care after self-mutilating following deafferentation, led to a cruelty prosecution of the researcher and loss of his research funding. This was followed by the release of researcher-generated videotapes in another case documenting abusive treatment of baboons at the University of Pennsylvania Head Trauma Research Center (Philadelphia, PA), stolen by activists and released to the media. Still other scandals, such as documentation of animal abuse at the City of Hope (Duarte, CA), followed.

Beginning in 1976, at Colorado State University, a group of veterinarians expert in animal research, an attorney, and I, a philosopher, began to draft legislation regulating animal research at Colorado State University (Fort Collins, CO). With more than 50 years of research animal experience in three countries between us, we were convinced that only legislation could rectify the cavalier and heedless treatment of research animals that not only grossly violated public expectations of good animal care and control of pain and suffering, but actually jeopardized results of research by introducing unnecessary variables deforming animal data. From my perspective, legislation was essential to explode certain ideological impediments so ubiquitous in the scientific community that I described them as constituting the 'common sense of science', for they were to scientific practice what common sense was to daily life (Rollin 1989; 2006b; 2006c; 2007).

The major components of this ideology relevant to the ethics of animal research are twofold. First is the claim that science is 'value-free' in general and 'ethics-free' in particular. This is based in the belief that all

scientific concepts must be cashed out empirically—that is the criterion of demarcation between science and non-science. Since, as Wittgenstein (1929) remarked, one can take an inventory of all the facts in the universe, and not find it a fact that 'killing is wrong', ethics is alleged to be irrelevant to science. Second is the claim that, for similar reasons, one needed to be agnostic about consciousness and all mental states in animals, including those relevant to pain and suffering.

In the latter regard, when I testified before Congress on behalf of what became the 1985 amendments to the Animal Welfare Act, and the National Institutes of Health (NIH) Reauthorization Act, both mandating protocol review by Institutional Animal Care and Use Committees and control of pain and distress in research, Congress asked me to prove my claim that pain control for animals was not practiced by the research community. To do so, I contacted a colleague at the Library of Congress and asked him to do a search on "laboratory animal analgesia". The result turned up no published papers. When I expanded the search to "animal analgesia", two papers were found, one of which affirmed that there ought to be papers, and the other that knowledge was very limited.

There were then basically three areas where the animal research community failed to meet social-ethical expectations (Rollin, 2007). First was the failure to recognize animal research as an ethically problematic pursuit and thus to acknowledge the ethical issues inherent in animal research. Once again, a search of the scientific literature for "ethical issues in animal research" yielded no results. Second was the failure to address or even acknowledge felt pain and distress (as opposed to the mechanisms of nociception, fear, anxiety, boredom, loneliness, and other noxious states in animals) in the scientific literature, even in textbooks of veterinary anesthesia. Even a book produced in large part to placate societal concerns about animal pain by the American Physiological Society (Bethesda, MD), Kitchell and Erickson's *Animal Pain—Perception and Alleviation*, dealt overwhelmingly with the "plumbing" of pain, and virtually not at all with the fact that pain hurt.

The third ethically problematic area was the research community's neglect of alternatives to animal use. To a scientifically naïve and often-hostile public unashamed of scientific illiteracy, it was difficult to understand why scientists did not develop alternatives to animal use. The concept of alternatives to animals in science was first articulated in 1959 by Russell and Burch in their classic *Principles of Humane Experimental Technique*, and defined as *reduction* of animal numbers, *refinement* of techniques making research less invasive, and *replacement* of animals by such non-animal modalities as computers, tissue and cell culture, and models. (Russell and Burch 1959) It is the latter that the scientifically naive public most thoroughly equates with 'alternatives'.

Our legislation, passed in 1985, has had a salubrious result in assuaging some of the public ethical concerns about animal research. Probably most effective has been the advent of the understanding and use of pain control regarding animals used in experimentation. From the two papers I found, we have gone to what one of my anesthesiologist colleagues estimates as 5 to 10,000 papers, and a correlative rise in the use of analgesia. Distress control, too, while not nearly so far advanced, is at least a presence in research.

Ethical discussion, too, is now more marked; it is in fact impossible to avoid in protocol review. And there are increasing numbers of science and ethics courses, some mandated by NIH, but as this article evidences, journals have lagged behind in highlighting animal welfare.

Alternatives construed as reduction and refinement have also made headway, largely in the context of protocol review by Institutional Animal Care and Use Committees (IACUCs). But the advent of replacement alternatives has seen little movement, except in toxicology. The current article under discussion strikingly delineates the degree to which journal editors, whom Dr. Albert Koltveit, former editor

of *Journal of the American Veterinary Medical Association*, once called the “guardians of the gates for animal welfare” (Personal Communication), have abrogated their responsibility in stimulating the use of alternatives: “What journals demand, scientists do” (Personal Communication), said Koltveit. And judging from the data presented in this article, the journals are not demanding real evidence of attempts to find alternatives or focusing attention on animal welfare. (The United States Department of Agriculture demands for alternative searches under the Animal Welfare Act are also ineffective, since what is audited is the process of searching, not the finding of alternatives.)

It is mostly forgotten today that there was a viable, well-supported bill, rivaling the current law, being proposed in the early 1980s—the Research Modernization Act—aimed largely at creating replacement alternatives. The bill would have cut the NIH research budget by up to 60% and directed the money into funding “alternatives to animals.” When I attended the initial drafting session for that bill in 1977, I asked the author what she meant by an “alternative”. She responded by saying, “Oh, you know, a plastic dog that howls when you cut it and bleeds ketchup so they can do their experiments.” The bill, although well supported, did not pass.

Probably nothing illustrates as eloquently the price for research of failure to respond to social ethical concerns. While it is difficult for the conservatism inherent in science to replace ‘tried and true’ methods, it is essential to press for alternatives in all senses. If the journal editors and readers who, by definition, know a field best, do not monitor and demand the search for alternatives, who will do so? With animal activists constantly looking for evidence of malfeasance and inaction by the research community, it could well happen that impracticable legislation serving neither the interests of animals nor of research could be created, as indicated above. Thus, if the research community, as represented by journals, do not press for alternatives and stress animal welfare out of a sense of moral obligation, they should at least do so out of prudence and self-preservation.

References

- Kitchell, R., and H. Erickson. 1983. *Animal Pain—Perception and Alleviation*. Bethesda, MD: American Physiological Society.
- Osborne, N. J., D. Payne, and M. L. Newman. 2009. Journal editorial policies, animal welfare, and the 3Rs. *American Journal of Bioethics* 9(12): 55–59.
- Rollin, B. E. 1989. *The Unheeded Cry: Animal Consciousness, Animal Pain and Science*. Oxford, UK: Oxford University Press.
- Rollin, B. E. 2006a. *Animal Rights and Human Morality*, 3rd ed. Buffalo, NY: Prometheus Books.
- Rollin, B. E. 2006b. Regulation of animal research and the emergence of animal ethics: A conceptual history. *Theoretical Medicine* 27(4): 285–304.
- Rollin, B. E. 2006c. *Science and Ethics*. New York, NY: Cambridge University Press.
- Rollin, B. E. 2007. Animal research: A moral science. *EMBO Reports* 8: 6.
- Russell, W. M. S., and R. Burch. 1959. *Principles of Humane Experimental Technique*. London, UK: Methuen.
- Wittgenstein, L. 1929 [1968]. Lecture on ethics. *Philosophical Review*. 74: 13–14.