Introduction

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Diversity in animal experimentation assumes a number of different meanings depending on the life experiences of laboratory animal veterinarians and the justifications offered by scientists for doing any single experiment. One commonly thinks of technical differences between studies as confounders. Although behavioral and physiological disparities and the humane outcome for the animal(s) have been documented (e.g., Davis 2002), (1) they are much less commonly identified as confounders; and (2) they often depend on phenomena that cannot be easily controlled in the laboratory or, even more problematic, outside the laboratory.

Indeed, one of the greatest difficulties in prospective humane study design is coping with the assumptions that all experiments involving animals can be easily controlled. Indeed, a popular and robust justification offered for the study of drugs, vaccines, and science in living systems is the ability to study processes that occur in or among variable conditions within beings. Konrad Lorenz, one of history's modern animal biologists, addressed such issues in the context of scientific and biological multiplicity as "New Light on Animal Ways" in his book *King Solomon's Ring*. Lorenz was neither a classical zoologist nor a hardened scientist; however, in modern Darwinian fashion, he observed important things about animals and people who work with animals, which we discuss in this issue of *ILAR Journal*.

Herein, Russow and Theran begin by outlining basic ethical and moral theories associated with the use of nontraditional animal species (Russow and Theran 2003). They also explore ways by which the institutional animal care and use committee (IACUC[1]) might better address the impact that research has on animal social structures, as well as those surrounding the sensitivities that humans who work with animals almost inevitably have.

Next, we invite you to step into companion animal hospitals, homes, and research laboratories for a better understanding of work with dogs and cats in nontraditional biomedical research settings. Hampshire introduces readers to the myriad of jurisdictional authority surrounding the use of companion animals in nontraditional settings as well as the procedures that institutions currently follow for coping with ethical and humane care of such animal populations (Hampshire 2003).

In the next article, Hansen describes an example of clinical research studies in dogs (Hansen 2003). He discusses the utility of ethograms or behavioral composites associated with pain management and also highlights his experiences using these composites in evaluating the success of pain management for hospitalized female dogs recovering from ovariohysterectomy (spay) procedures.

Now that our profession has designed strategies for dealing with animal care in the era of genetic manipulation, we have entered a time when phenotypic evaluation of a great many chimers, clones, and models are produced by targeted mutation. More than ever, some programs have issues of competing needs between agricultural production and agricultural research. Field and agricultural veterinary personnel can encounter challenging scenarios while working in nonconventional programs that are more research oriented, especially in studies with genetically altered livestock. Such research may involve returning phenotypically altered animals to an animal society, but one in which hierarchies are changed from what the animal(s) would have typically experienced. Granstrom methodically addresses key recommendations and guidelines that may enable readers to evaluate programmatic compliance with these dueling needs more effectively (Granstrom 2003). His discussion may lend those managers who are presently coping with approval of invasive and critical care procedures in farm animals a greater level of appreciation for consolidation and collaboration measures that might be achieved across programs and/or institutions to provide more comprehensive care to a relatively select population of animals.

In her article, King provides readers and IACUCs with complementary tools for decision-making related to study design and support in agricultural programs (King 2003). She lends valuable research perspective on the relatively simple but important observations of Lorenz some 30 yr earlier. Taking Granstrom's outline one step farther, King addresses behavioral concepts and approaches to the study of farm animal welfare. We hope the thorough discussion of extrinsic and intrinsic behaviors, the overview of neurophysiological mechanisms underlying animal emotions, and the discussion of animal priorities and lifestyle "costs" (or perhaps value-based decisions) will influence readers to consider very carefully how IACUCs might better approach the design of sociological and environmental provisions within animal care programs as much as they consider the behavioral experiment itself.

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[1]Abbreviation used in this Introduction: IACUC, institutional animal care and use committee.

We hope that readers find this issue useful for gathering different perspectives and guidelines regarding the care and use of animals outside the customary laboratory setting.

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