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Policies & Perspectives

CONSENSUS ON A DEFINITION OF DISTRESS

In July 2000 the U.S. Department of Agriculture (USDA) sought public comments on its initiative to define distress in the Animal Welfare Act regulations. After reviewing the comments received, the USDA decided not to follow through on its initiative, citing lack of consensus among the scientific community on a suitable definition. To explore this rationale, The Humane Society of the United States (HSUS) examined all of the comments submitted by the research community (approximately 2,144) (*Federal Register*, Docket # 00-005-1). Not surprisingly, most of these respondents opposed the adoption of a definition of distress, which was perceived as an expansion of the USDA's oversight over research facilities. However, nearly all comments from the research community (97%) expressed support for a definition developed by the National Research Council (NRC), should the USDA decide to adopt a definition. The NRC definition is as follows: "an aversive state in which an animal is unable to adapt completely to stressors and the resulting stress and shows maladaptive behaviors."

Although The HSUS believes that the NRC definition has serious limitations, it urges the USDA to solicit comments on this definition as a step forward in adopting a regulatory definition of distress and ultimately providing greater oversight of

research animal distress, particularly non-pain-induced distress, which is often overlooked.

COMPASSION FOR ANIMALS AS A REFINEMENT

Compassion for animals in the laboratory is beginning to be recognized as an important refinement technique, resulting in decreased animal stress (Reinhardt, 2003, *Journal of Applied Animal Welfare Science*, 6(2): 123-130). Historically, kindness toward animals in the laboratory was feared to negatively affect research results, but it is now being recognized that lack of compassion can negatively affect research results. A European Council Directive in the 1980s advocated affection toward laboratory animals. As Reinhardt points out, there is increased support of this concept in the United States. For example, the *Institute for Laboratory Animal Research (ILAR) Journal* devoted an issue to this topic, and statements in support of compassion have been made by organizations that promote animal research and testing, such as the American Association for Laboratory Animal Science.

Reinhardt discusses benefits of human-animal bonds—for example, frequent, gentle handling has a protective effect on induction of stomach ulcers and decreases fear response during stressful situations in rats and has been found to increase resistance to atherosclerosis in rabbits.

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Reinhardt refers to an Internet discussion on this issue and points out that there was consensus that human emotional attachment provides assurance that the animals will be provided with optimal care, which leads to improved research results. "Rather than compromising research, these human-animal bonds should be considered the very foundation of scientifically sound research methodology," he stated.

Resources & Services

INTERNATIONAL ANIMAL PAIN EXPERT FEATURED ON WEBCAST

Paul Flecknell, Ph.D., an international expert on research animal pain, gave a keynote lecture entitled "Pain Assessment and Alleviation: Telling It Like It Is" at the 2003 conference of the American Association for Laboratory Animal Science (AALAS) in Seattle. The lecture was broadcast simultaneously on the Internet (a first for AALAS), reaching 298 sites in 15 countries. Dr. Flecknell, of the University of Newcastle upon Tyne, discussed the history of attention to animal pain, public opinion, the importance of recognizing and alleviating pain, evidence of insufficient analgesic use, typical reasons given for withholding relief, pain control solutions, how to assess and score pain, and lack of information on pain in research publications. The video can be viewed at www.aalas.org.

AALAS is to be congratulated for featuring such an important talk at its conference and on the Web.

TRAINING NONHUMAN PRIMATES USING POSITIVE REINFORCEMENT TECHNIQUES

The *Journal of Applied Animal Welfare Science* (JAAWS) has devoted a special issue to the training of nonhuman primates using positive reinforcement techniques (2003, 6(3)). The special issue's

nine articles address the use of training for enhancing care, management, and welfare of primates in laboratories; blood collection; and scientific and routine laboratory procedures. Training programs at Disney's Animal Kingdom Theme Park and the Bronx Zoo are discussed, as well. The theme echoed throughout the special issue is that positive reinforcement training significantly reduces the adverse effects associated with certain procedures, thereby benefiting animal welfare and quality of science. Ordering information can be found at www.psyeta.org/jaaws.

LAB RATS WILD AT HEART

An award-winning documentary depicts how quickly "lab" rats return to their wild ways once given the opportunity, despite 200 generations of domestication. Filmmaker and Oxford University zoologist Manuel Berdoy released 50 lab rats into a fenced farmyard and followed their lives for six months. Berdoy discovered that the rats promptly formed hierarchical social groups and found food and water, despite being fed a laboratory diet for their entire lives. Other behavior caught on film includes antipredation, mate and habitat selection, birth, and infanticide. In spite of Berdoy's shoestring budget and previous lack of experience as a filmmaker, the documentary won awards at the Jackson Hole Wildlife Film Festival and the Living Europe film festival. According to Berdoy, *The Laboratory Rat: A Natural History* reviews "the range of behaviours and needs which, despite generations of domestication, remain innate and ready to be expressed when given the opportunity." Additional information, including how to order the film, can be found at www.ratlife.org.

The HSUS believes the film has obvious relevance to arguments about what constitutes appropriate housing for rats and other domesticated animals used in research. Domestication, per se, may not be as potent a neutralizer of species-typical behavior as some might have guessed.

DUTCH GRADUATE SCHOOL FOR THE REPLACEMENT OF ANIMAL EXPERIMENTS

Utrecht University has opened a graduate school for the replacement of animal experiments, a joint initiative with a Dutch antivivisection group and the Netherlands Centre for Alternatives to Animal Use. The program will educate students on how to design and validate alternative methods for animal research

Upcoming Conferences

Assessment and Treatment of Pain and Distress in Animals

- ▶ Sponsored by The AWEN Group, Inc., and the Ohio Scientific Education and Research Association
- ▶ May 12, 2004
- ▶ Columbus, Ohio
- ▶ For more information, go to www.theawengroup.com

Balancing Animal Welfare and Regulatory Compliance in Preclinical Studies

- ▶ Sponsored by the Office of Laboratory Animal Welfare (OLAW) and Michigan State University
- ▶ June 29–30, 2004
- ▶ Detroit, Michigan
- ▶ For more information, go to http://grants.nih.gov/grants/olaw/hvestin_062904.doc

American College of Veterinary Anesthesiologists (ACVA)/International Veterinary Academy of Pain Management (IVAPM) Annual Meeting

- ▶ Sponsored by ACVA and IVAPM
- ▶ October 19–25, 2004
- ▶ Phoenix, Arizona
- ▶ For more information, go to www.acva.org

in order to reduce the number of animals used *without* affecting the quality of research. For more information, visit <http://mailman.greenmet.org.uk/public/interniche-1/Week-of-Mon-20030324/000260.html>.

From the Technical Literature

REFINEMENTS IN TOXICOLOGY STUDIES

Toxicology studies can present special challenges to the refinement of animal use, given explicit regulatory requirements and perceptions of what is and is not acceptable practice. Turner et al. (2003, *Contemporary Topics in Laboratory Animal Science*, 42(6): 8–15) address the relevant issues. They point out that validation studies are necessary in some cases due to regulatory requirements and concerns about potential physiological effects. Publication of validation studies is preferable, and once a refinement becomes standard practice at an institution, scientific justification should be required if the refinement is not utilized. Some validated refinements in toxicology include: providing chew toys and “nestlets” to rodents, applying environmental enrichment programs for macaques, housing dogs in social groups, and using telemetry to monitor physiology. Existing industry guidelines recommend social contact with conspecifics, enrichment, solid-bottom caging for rodents, and human interactions. Despite these recommendations, an informal survey of U.S. and Canadian veterinarians working for pharmaceutical or contract research facilities indicates that only 33% of facilities socially house some large animals on some regulated studies and that most rodents are housed in wire-bottom cages. The authors suggest the following areas for future toxicology-

oriented refinement work: social housing; humane endpoints; validation of biomarkers and clinical observations; alternative dosing and restraint systems; use of minimally invasive monitoring equipment; training of animals for routine procedures; and monitoring of animals for veterinary intervention.

The HSUS encourages institutions to seek guidance from regulatory authorities as to what refinements are acceptable under Good Laboratory Practices and similar mandates. A session recorded at the 2003 AALAS conference entitled “Closing the Gap: How to Balance Humane Endpoints, Toxicology Data Points, and Appropriate Veterinary Interventions” features a presentation encouraging refinement by a representative from the U.S. Food and Drug Administration (see www.aalas.org).

Statistics on Animal Use Pain & Distress

RESEARCH ANIMAL USE DECLINES IN NEW ZEALAND

The National Animal Ethics Advisory Committee of New Zealand recently published its 2002 report on animal use in research, testing, and education. A total of 318,583 animals were used during 2002, a 17% drop from 2001. Fish use decreased substantially since 2001. Mice, rats, and fish were the most commonly used species. Seventy-eight percent of animals experienced little or no suffering (a 6% decrease since 2001), 16% experienced moderate suffering (a 6% increase), and 6% experienced severe or very severe suffering (a 0.5% increase). Mice accounted for 93% of the animals in the very severe suffering category. Commercial work and basic biological research accounted for 52% of animal use. Most animal use occurred in commercial

organizations (35%), Crown Research Institutes (31%), universities (30%), and government departments (4%).

Special Feature

HSUS CELEBRATES 50TH ANNIVERSARY

The HSUS is celebrating its fiftieth anniversary this year. Since its founding in 1954, The HSUS’s advocacy work in the animal research arena has

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Recent Publications

Albarellos, G. A., et al. (2003). A non-surgical jugular catheterization technique for multiple blood sampling in cats. *Laboratory Animals*, 37(3): 188–192.

Bardelmeijer, H. A., et al. (2003). Cannulation of the jugular vein in mice: A method for serial withdrawal of blood samples. *Laboratory Animals*, 37(3): 181–187.

Committee on Guidelines for the Use of Animals in Neuroscience and Behavioral Research (2003). *Guidelines for the care and use of mammals in neuroscience and behavioral research*. Washington, DC: National Academies Press.

Späni, D., Arras, M., König, B., & Rüllicke, T. (2003). Higher heart rate of laboratory mice housed individually *vs* in pairs. *Laboratory Animals*, 37(1): 54–62.

Vrinten, D. H., & Hamers, F. F. T. (2003). Cat walk automated quantitative gait analysis as a novel method to assess mechanical allodynia in the rat: A comparison with von Frey testing. *Pain*, 102(1–2): 203–209.

Pain & Distress Report

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focused on eliminating animal pain and distress through investigating conditions in laboratories, encouraging the regulation of animal care and handling, and promoting the Three Rs of Russell and Burch. The HSUS is a cosponsor and coorganizer of the triennial World Congress on Alternatives and Animal Use in the Life Sciences, the largest international conference on the Three Rs. While some animal protection organizations have historically eschewed the regulation of animal research as misguided, HSUS cofounder Fred Meyers believed that, as long as animals are being used in research, experimentation should be regulated to protect them from preventable suffering. Beginning in the late 1970s, The HSUS began hiring scientists to work on behalf of research animals, initially under the banner of The HSUS Institute for the Study of Animal Problems (ISAP).

The following illustrate The HSUS's focus on research animal pain and distress throughout its 50-year history. In 1961 The HSUS published *Animals in a Research Laboratory*, which contains undercover investigative documentation and depositions related to a court case between The HSUS and a California research institution. In 1966 The HSUS and Maryland State Police raided a dog dealer and the conditions were documented in *Life* magazine. These and other efforts contributed to the passage

of the Laboratory Animal Welfare Act—now known as the Animal Welfare Act (AWA)—of 1966. The HSUS's involvement in the AWA continued in the early 1980s when an HSUS board member was an active participant in crafting proposals that ultimately became part of the 1985 AWA amendments.

In 1979 ISAP held one of the first workshops to address pain, distress, and suffering. The HSUS also filed a petition in 1982 requesting that the U.S. Department of Agriculture (USDA) define the terms “pain,” “distress,” and “routine procedure” and that institutions be required to provide *meaningful* explanations for the withholding of pain-relieving drugs. The USDA failed to act. In 1992 The HSUS filed a second petition for an overhaul of the USDA pain and distress reporting system and proposed a new severity scale; again the USDA failed to act. In 2000 the USDA did propose to define distress and change the pain and distress reporting system; comments were solicited, but no official action has yet been taken. The HSUS will continue work on this effort (see “Consensus on a Definition of Distress” on page 1).

In 1998 The HSUS published a comprehensive profile of “column E” procedures, i.e., those reported as causing unrelieved pain and distress. The analysis demonstrated that animal testing, particularly vaccine potency

Helpful Websites

The seventh edition of the *Annotated Bibliography on Refinement and Environmental Enrichment for Primates Kept in Laboratories* is now available online at www.awionline.org/lab_animals/bibliolindex.html. The bibliography contains articles on a range of issues including space, social housing, ethical considerations, weaning, positive reinforcement training, stimulation of normal behavior, and much more.

A website developed by the University of Edinburgh and sponsored by various agencies and organizations provides guidelines for the recognition and assessment of animal pain at www.vet.ed.ac.uk/animalpain.

testing, accounted for the bulk of reported unrelieved pain and distress in research animals. The HSUS continues to address research animal pain and distress through its Pain & Distress Initiative, launched publicly in 2000 with a formal challenge to the scientific community to join in the effort to eliminate all significant pain and distress in research animals. As part of this initiative, The HSUS held a workshop in February 2004 in which invited experts from around the world addressed the relatively neglected area of research animal distress—its definition, recognition, assessment, and alleviation.

Pain & Distress Report

provides IACUCs and others with up-to-date information on issues regarding pain and distress in laboratory animals.

Also available online at www.hsus.org/lace/11401 or contact ari@hsus.org to request copies by e-mail.

Please share this report with your colleagues and IACUC members.

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