

Ethics and the Use of Animals in Research

SNFBA 2019

Jeffrey Kahn, PhD, MPH

Andreas C. Dracopoulos Director

Johns Hopkins Berman Institute of Bioethics

Why Animal Research Raises Ethical Issues

- Use of animals for human purposes
 - As in human subject research, challenge of distribution of risks and potential benefits
 - Actual harms to animals
- Research often performed on animals because it would be unethical to perform on human subjects
 - Why is it acceptable to perform on animals?
- Seems to be predicated on a hierarchical view of species
 - Acceptable to use non-human animals because humans are more important
 - But what makes humans special?
 - What distinguishes species on which research is acceptable from those that are not?

Can a Hierarchical Approach be Defended?

- All animals share important aspects
 - Ability to feel pain
 - What else?
- Some subset have other attributes in common with humans
 - Sentience
 - Sense of others
 - Self-recognition
 - Mirror test: <https://www.youtube.com/watch?v=VR4-fvjyMtY>
 - An autobiography
 - Intelligence
- Is line-drawing possible, and does it make sense as an approach?
- What uses of animals are justifiable, and on what grounds?

Policies Related to Animal Research Oversight

- Usually a two-part approach
 - Policy on humane care and use of laboratory animals
 - Parallel to protection of research subjects
 - Animal welfare
 - Care and housing of animal subjects
- Institutional Animal Care and Use Committees (IACUCs)
 - Parallel to IRBs/RECs in research on human subjects
 - Prospective review of use of animals in research
 - Appropriate species
 - Appropriate number of animal subjects
 - Appropriate analgesia/anesthesia
 - Appropriate euthanasia

The Three Rs

- Replace
 - “Higher” animals with lower
 - In vivo with in vitro or computer modeling
- Reduce
 - Numbers of animals used
- Refine
 - Analgesia/anesthesia to minimize pain and distress, and improve welfare of animal research subjects
- All should be driven by using animals only when necessary
- But how to assess necessity?



One technician quickly shaved Simba. On the skin of his right groin, a tattoo number x019. The other technicians

"IT IS UNETHICAL NOT TO USE THE CHIMP MODEL FOR CERTAIN INDICATIONS."

his electrical heart rhythm 143/87 mm for him, drawn from rectal temperature, at 37 minute; he

Hassel kidneys a one of the

cages at the NIRC when he was 17. He e of chimpanzee research, when Carleton Nobel Prize in discovering disorders such as tted by infectious research, Gaj-n brain tissue

"STOP USING THE EXCUSE THAT CHIMPS ARE ESSENTIAL TO THIS RESEARCH."

rk rubbed off s so exciting orking at the

catheterizing Simba to collect a urine

Louisiana are some of very few remaining worldwide

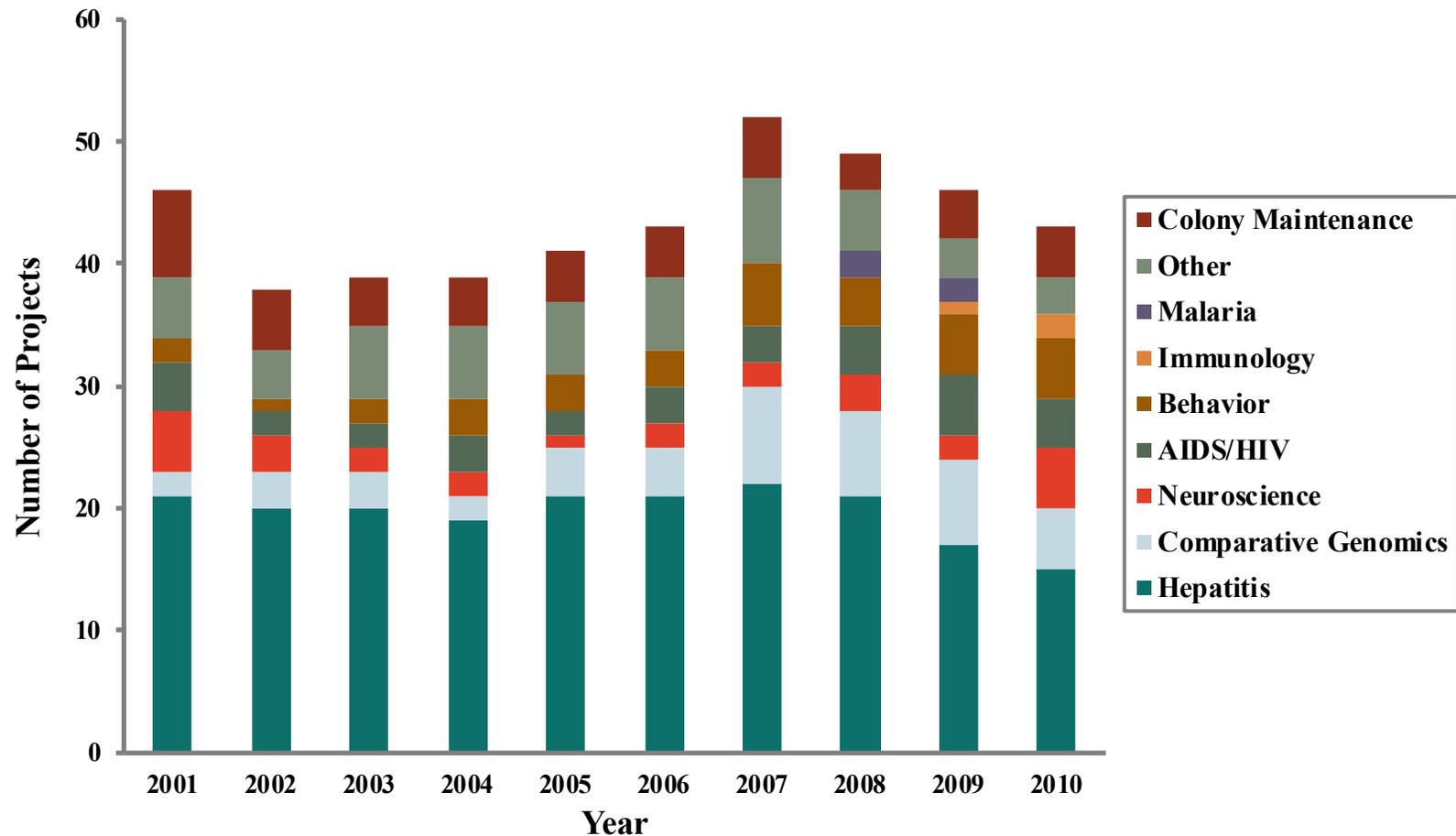
involved with something so huge." Rowell

CHIMPANZEE RESEARCH ON TRIAL

As pressure from activists builds, the United States is considering whether it should end invasive experiments in chimpanzees.

BY MEREDITH WADMAN

Chimpanzee research supported by the NIH



Why Have Chimpanzees Been Used?

- Similarity to humans
 - Genetic
 - Immunological
 - Physiological/morphological
 - Behavior
- No other applicable animal model
 - Infectious disease
 - Studies of specific behavior
- Unethical to perform proposed research on humans
- Long-lived (up to 70 yrs)
- No euthanasia policy
- Available resource
- Some of these are different from because they are *necessary*

Ethical Considerations

- “The committee felt ethics was at the core of any discussion about the necessity of continued use of chimpanzees in research. While the committee was not sufficiently constituted to take on the ethics of research on chimpanzees, its considerations were suffused with an awareness of the moral cost of such research. These concerns were manifest in the very high level of justification the committee required to support the necessity of chimpanzee research in the specific areas of research it examined and assessed.”
- The scientific reasons for using chimpanzees are what creates ethical concerns;
 - They are close to us
 - Genetically, cognitively, behaviorally
- And their availability allows us to do research on them rather than humans
- Presumption that research on at least some animals is acceptable

Principles

- The committee was guided by the following three principles:
 1. The knowledge gained must be necessary to advance the public's health,
 2. There must be no other research model by which the knowledge could be obtained, and the research cannot be ethically performed on human subjects,
 3. The animals used in the proposed research must (a) acquiesce to research, and (b) be maintained in either ethologically appropriate physical and social environments or in natural habitats.
- ***Three key features:***
 - *Use of humans first*
 - *Acquiescent animals*
 - *Ethologically appropriate environments*

Conclusions

- Research involving chimpanzees has changed in significant ways
 - Much higher bar for **justification**
 - Presumption is to avoid using chimpanzees unless criteria are met
- Approach to the issue by the IOM committee was directed to only chimpanzees, but the principles identified and applied are not specific or exclusive to chimpanzees
- Wide endorsement by range of stakeholders indicates a potential path forward for oversight of research on other animals
 - NIH; research community; animal welfare and animal rights groups
- Implementation
 - NIH Director's Working group released its report and recommendations in Jan. 2013
 - Reduce to 50 total in research population; revisit every 3-5 yrs
 - No breeding
 - Ethologically appropriate housing
 - Allow "autonomous choice to participate" [acquiescence]

Thinking About Justification More Broadly

- Can we move to a new framework for research on animals?
- What would the implications be?
- How would necessity be measured?
 - For non-human primates
 - For dogs, rodents, and so on