

BIOE 555: Chimeras and Frankenpets: Ethical Issues in Animal Biotechnology
Summer 2006

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The issue of human reproductive cloning has received a great deal of attention in public discourse. Bioethicists, policymakers, and the media have been quick to identify the key ethical issues involved in human reproductive cloning and to argue, almost unanimously, for an international ban on such attempts. Meanwhile, scientists in labs across the globe have moved forward with extensive research agendas in the cloning and genetic modification of animals. What in 1997 was considered a remarkable feat – the cloning of Dolly the sheep – is today commonplace. To date, scientists have successfully cloned many other species including cats, rabbits, cows, mice, goats, pigs, mules, horses, and most recently, a dog. Scientists have also made extensive “progress” in transgenic science, in which genetic material from one species is introduced into a different species. This technique has long been used in rodents, but has in recent years been used to genetically alter rabbits, fish, and, most worrisome, non-human primates.

Despite all of this scientific research, there has been very little reflection on the profound ethical issues raised by animal biotechnology. In this course, we will examine the ethical issues that arise in various projects in animal biotechnology such as xenotransplantation, biopharming, pet cloning, cloning for conservation, recreational transgenesis (like “Alba the bunny” or the Glofish), disease modeling, and agricultural cloning and transgenesis.

Class will meet Wednesdays **OR** Thursdays, 4:30-6:30pm in the classroom on the third floor of 3401 Market St. (the Center for Bioethics).

Course Material: The readings can be found on UPenn’s Blackboard site.

Assignments: There will be one take-home exam due Monday, July 31. Please deliver in hard copy or via attachments to Ms. Patty James (DO NOT SEND ME ATTACHMENT FILES DIRECTLY): mbepaper@mail.med.upenn.edu

Introduction

May 17/18: Fiester, "Ethical Issues in Animal Cloning"

I. Theoretical Background & General Issues in Animal Biotech

May 24/25: Moral Status

Singer, "Preface to the 2002 Edition," "All Animals Are Equal," & "Some Objections"

May 31/June 1: Moral Status

Regan, "The Case for Animal Rights" & Cohen, "Reply to Tom Regan"

June 7/8: Moral Status

DeGrazia, "Equal Consideration and Unequal Status" & "The Ethics of Animal Research: What Are the Prospects for Agreement?"

June 14/15: Common Concepts: "Species" and "Integrity"

Robert and Baylis, "Crossing Species Boundaries"

Streiffer, "In Defense of the Moral Relevance of Species Boundaries"

Bovenkerk, et al., "Brave New Birds"

June 21/22: NO CLASS

June 28/29: Other Approaches

Midgley, "Biotechnology and Monstrosity"

Rollin, "On Telos and Genetic Engineering"

Fiester, "Chimeras and Frankenpets: Justifying a Principle of Restraint in Animal Biotechnology"

II. Ethical Concerns with Specific Technologies & Applications

July 5/6: Pet Cloning

Fiester, "Creating Fido's Twin"

Bok, "Cloning Animals Is Wrong"

July 12/13: Agricultural Biotech

Mason and Finelli, "Brave New Farm"

Thompson, "Ethics and Genetic Engineering of Animals"

Fiester, "How the Biotech Pig is Wagging the Dog" (and rebuttals)

Audio, NPR's On Point, "Playing God with Nature"

July 19/20: Agricultural Biotech

Rollin, "How Genetic Engineering Could Help Animals"

Thompson, "Biotechnology and the Blind Chicken Problem"

July 26/27: Xenotransplantation

Francione, "Xenografts and Animal Rights"

Frey, "Organs for Transplant: Animals, Moral Standing, and One View of the Ethics of Xenotransplantation"

Aug 2/3: Xenotransplantation vs. Biopharming

Fiester, "Casuistry, Biopharming, and the Moral Continuum"