Life Science Ethics

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Overview

- Introductions
- Review syllabus
- Ethical theory
- Ethics of commercial cat cloning

Philosophical ethics

- Philosophical ethics emphasizes critical thinking and ethical arguments in identifying and resolving ethical issues
- Other disciplines, including sociology, psychology, and religious studies, study morality from different perspectives

What Is Ethics?

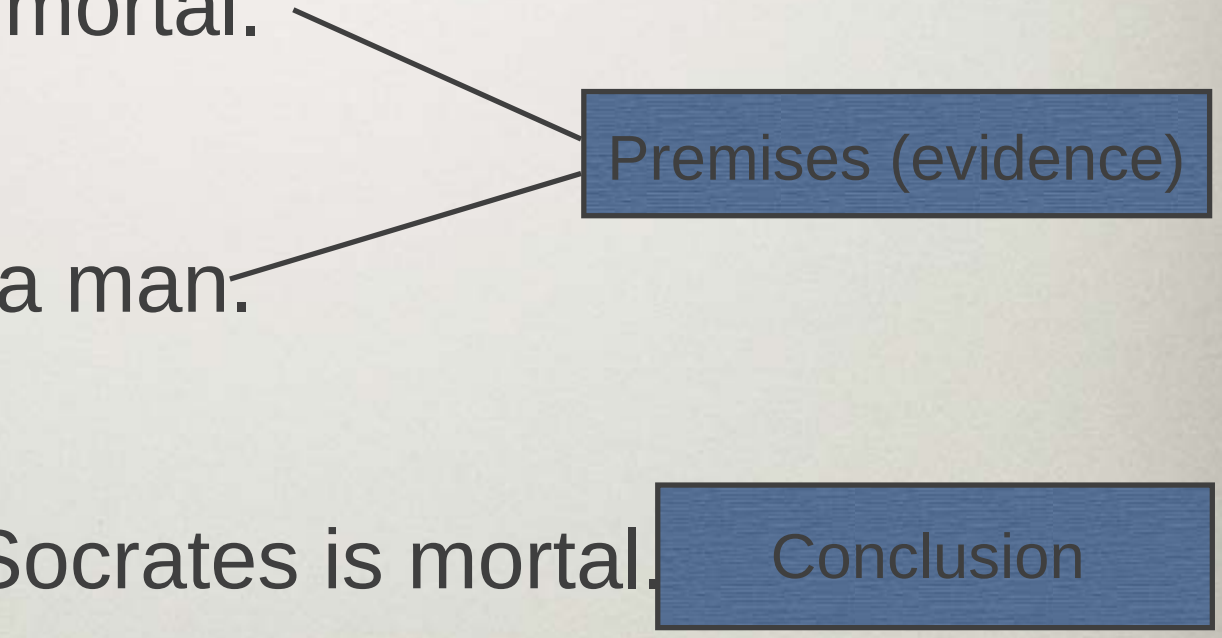
- Ethics is the careful study of values to help us decide what we ought to do.
- Ethics is critical thinking about right and wrong action.

Arguments

- An argument is a group of statements, some of which (the premises) are intended to help convince us that one of the statements (the conclusion) is true.
- Contrast emotional appeals, hunches or intuitions, or threats.

An argument

- All men are mortal.
- Socrates is a man.
- Therefore, Socrates is mortal.



Evaluating arguments

All men are mortal.

Socrates is a man.

Therefore, Socrates is mortal.

- Do the premises provide good reason to accept the conclusion?
- Are the premises true, or at least justifiable?

More arguments

- All cats are black and white.
- Sylvester is a cat.
- Therefore, Sylvester is black and white

- All bachelors are male.
- Bill Clinton is not a bachelor.
- Therefore, Bill Clinton is not male.

Validity

- All bachelors are male.
- Bill Clinton is not a bachelor.
- Therefore, Bill Clinton is not male.

-This argument is invalid. An invalid argument contains a mistake in reasoning: the premises do not conclusively or strongly support the truth of the conclusion.

Soundness

- All cats are black and white.
- Sylvester is a cat.
- Therefore, Sylvester is black and white.

-This argument is unsound.
An unsound argument has one or more false premises.

Ethical Argument

- Empirical claims
  - plus
- Ethical claims
  - equals
- Ethical conclusion

Ethical Argument – Example

- Human cloning produces exact physical replicas of adults.
- It is ethically wrong to produce exact physical replicas of adults.
- Therefore, human cloning is morally wrong.

Evaluating Ethical Arguments

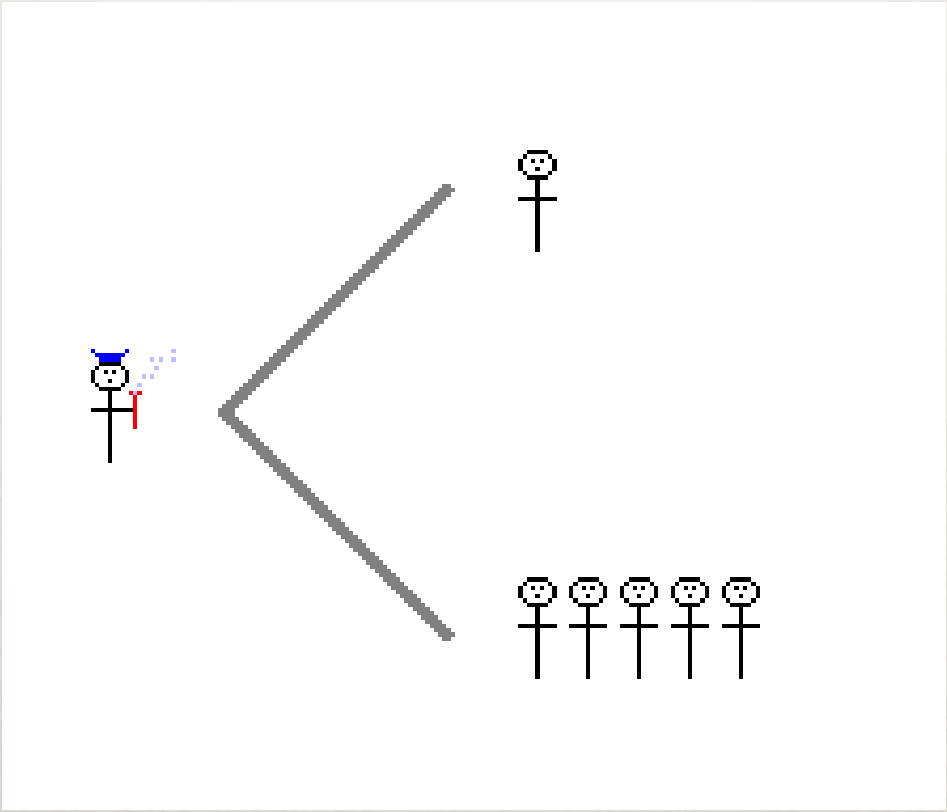
- Human cloning produces exact physical replicas of adults.
- It is ethically wrong to produce exact physical replicas of adults.
- Therefore, human cloning is morally wrong.

1. Do the premises provide good reason to believe the conclusion?

2. Are the premises true, or at least justifiable? What evidence is offered for controversial premises?

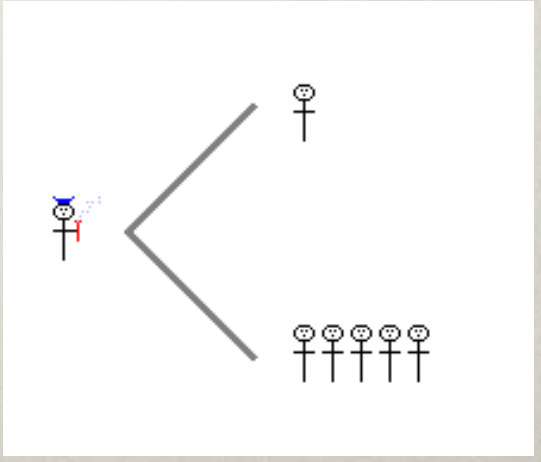
3. Are there other ethical principles or empirical claims that should be considered?

Bloggs Case #1

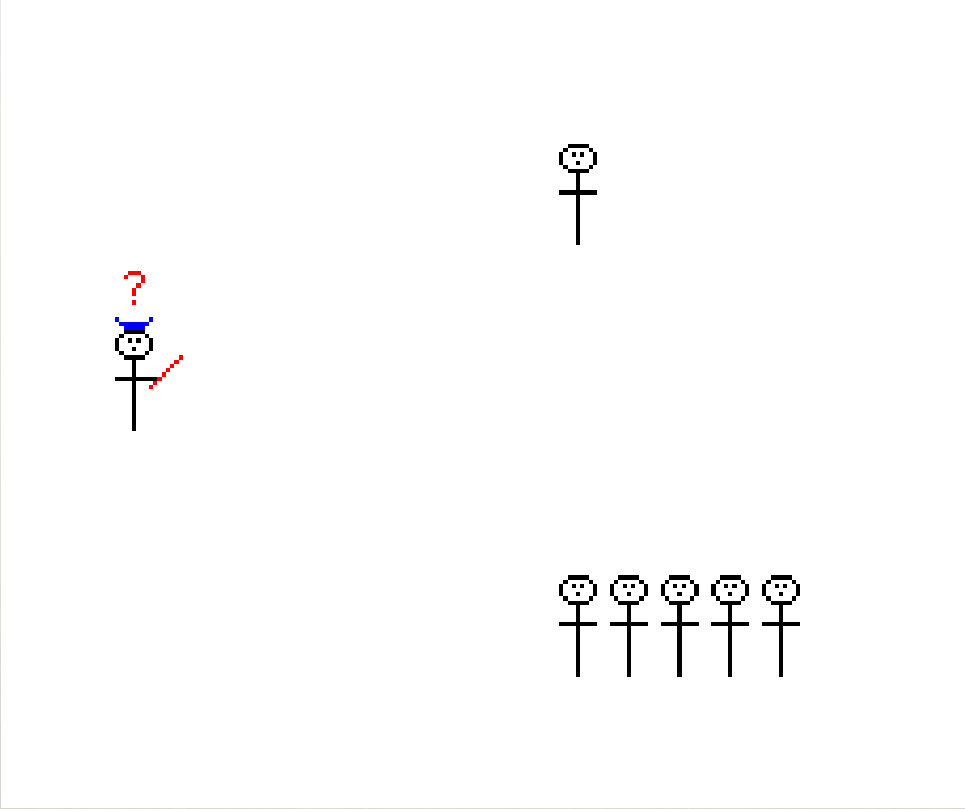


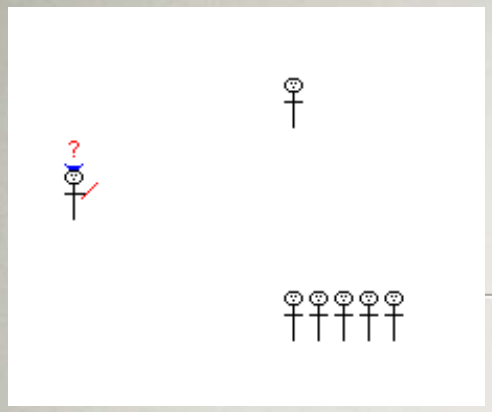
Bloggs Case #1

- “Utilitarianism”: The ethical thing to do is that which maximizes aggregate benefit for everyone.
- “The common good”



Bloggs Case #2

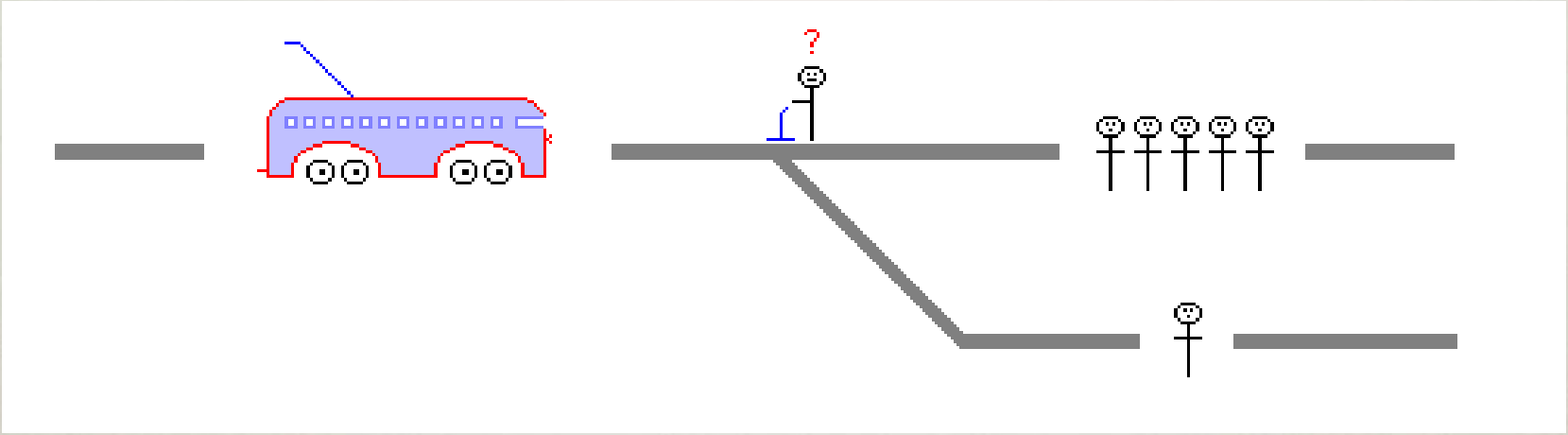




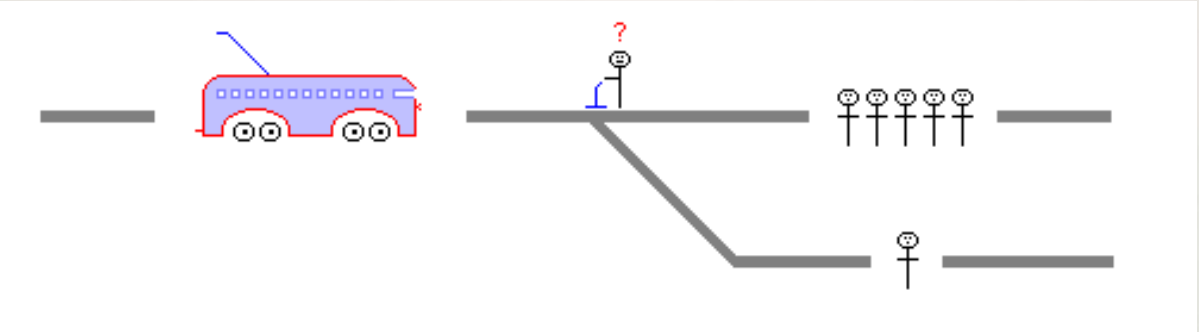
Bloggs Case #2

- A moral right is a justified claim that an individual (or group) may make to certain objects or certain treatment by others.
- Bloggs's right to X may take the form of:
  - A claim that Bloggs may make to a particular object (e.g., his kidneys)
  - A constraint on how Bloggs should be treated (e.g., he shouldn't be killed for his organs)
  - An obligation on others not to interfere with Bloggs's doing X (e.g., his continuing to live)

Bloggs Case #3



Bloggs Case #3



- The ethics of acts vs. omissions
- The greater good vs. “clean hands”

Ethical issues arise …

- …in cases of conflict between individual rights and the common good (e.g., quarantines)
- …in cases of conflict of interests between two people or groups (e.g., waiting transplant recipients)
- …in cases where the moral status of certain entities is in dispute (e.g., the environment, blastocysts)
- …in cases where scarce goods have to be allocated (e.g., high-tech medical devices)

Components of moral theory

- Value theory: What makes something good (valuable) or bad? What has intrinsic value?
- Theory of right action: Which actions are morally permitted, which are morally required, and which are morally prohibited?
- Virtue theory: What character traits make a person a virtuous person?

Ethics and Biotechnology

What's in a definition?

- Biotechnology: The commercial use of living organisms or their components to improve animal and human health, agriculture, and the environment.

  •*Barnum,* Biotechnology: An Introduction *(Wadsworth 1998): 214.*

- Transgenic technology bypasses conventional breeding by using artificially constructed parasitic genetic elements as vectors to multiply copies of genes, and in many cases, to carry and smuggle genes into cells which would normally exclude them.

  •*Ho, M.W. and Tappeser, B. (1997). Potential contributions of horizontal gene transfer to the transboundary movement of living modified organisms resulting from modern biotechnology. In K.J. Mulongoy, ed.,* Transboundary Movement of Living Modified Organisms Resulting from Modern Biotechnology *(International Academy of the Environment,Switzerland):171-193.*

Evaluating genetic engineering

- “Intrinsic ethical arguments” are arguments about whether GE has some intrinsic value or disvalue
- “Extrinsic ethical arguments” are arguments about the ethical status of GE’s applications or consequences.

Intrinsic / Extrinsic

- Neither I, nor my organization, the Union of Concerned Scientists, is opposed to genetic engineering per se. We have no fundamental or moral objection to the technology, based, for example, on the fact that it is unnatural or transgresses important boundaries. Instead, our approach is utilitarian. We want to look at the benefits, risks, and the alternatives.

Margaret Mellon, Director, Union of Concerned Scientists Program on Food and Environment

Intrinsic ethical arguments

- "Intrinsic ethical arguments" are arguments about whether GE has some intrinsic value or disvalue
  - Playing God
  - Evolutionary arguments
  - Species integrity arguments
  - Unnaturalness

} Naturalness Arguments

GE as “Playing God”

- “We are sometimes invited to play God, and we are sometimes warned against it, but before we decide whether to accept the invitation or to heed the warning, it would be good to know what it means to ‘play God.’”

Allen Verhey, “Playing God and Invoking a Perspective”

Evolutionary Arguments

- “Will fish mate with tomatoes or soybeans crossbreed with petunias? Will pigs mate with humans or rabbits with mice? Of course not, but some scientists are combining the genes of these diverse creatures against the laws of natural selection. This unsacred liaison invented by chemical corporate giants is called genetic engineering.”

“Genetic Trespassing and Environmental Ethics,” Mira Foung, in Sherlock and Morrey, Ethical Issues in Biotechnology *(Rowman and Littlefield 2002): 89.*

Natural Boundaries

- "Short of a theological argument, it is hard to see why anyone would hold the view that breaching natural barriers or creating new organisms is *intrinsically* wrong. For if a person were to advocate such a principle, he would have to condemn the creation of new bacterial strains capable of, say, synthesizing human clotting factor or insulin, *even if* creating the new organism generated *no unwelcome side effects*."

Stephen Stich, "The Recombinant DNA Debate." Philosophy and Public Affairs *Vol. 7 No. 3 (1978).*

Unnaturalness

- Many arguments that GE has intrinsic disvalue appeal to a normative sense of nature that GE is said to violate.
- “Genetic engineering changes the fundamental physical nature of the organism, sometimes in ways that would never occur in nature. Genes from one organism are inserted in another organism, most often across natural species boundaries.”

Ron Epstein, “Redesigning the World: Ethical Questions about Genetic Engineering,” in Sherlock and Morrey (2002), Ethical Issues in Biotechnology.

Unnaturalness

- Is GE unnatural?
- If so, is that an ethical problem?

Extrinsic arguments

- “Extrinsic ethical arguments” are arguments about the ethical status of GE’s applications or consequences.

Extrinsic consequentialist arguments

- GE is good/bad because of its expected consequences.
- Three ways to evaluate consequences:
  - Do no harm (avoid bad consequences).
  - Maximize good consequences and minimize bad ones for all affected.
  - Justice: Fair distribution of good and bad consequences among all affected.

Extrinsic Deontological Arguments

- GE is good/bad because its applications will predictably respect/violate moral rules or moral rights.

Extrinsic Deontological Arguments

- "Unless we are ready to accept starvation, or place parks and the Amazon Basin under the plough, there really is only one good alternative: discover ways to increase food production from existing resources."

•*Martina McGloughlin, "Ten Reasons Why Biotechnology Will Be Important in the Developing World,"* AgBioforum *Fall 1999: 9-21.*

Extrinsic Deontological Arguments

- "To me, biotechnology is another weapon in the war to destroy all remaining enclaves of self-reliance, so that everyone in the world will be dependent on transnational corporations and their allies for food, one of the necessities of life."

  - *Martha Crouch, "Biotechnology is Not Compatible With Sustainable Agriculture,"* Journal of Agricultural and Environmental Ethics *8:2 (1995): 99.*

Extrinsic arguments

- Extrinsic arguments may support very different recommendations:
  - Requirement: GE is ethically mandatory.
  - Hypothetical approval: GE is always an ethically permissible means to good ends.
  - Contingent: Different applications of GE have to be evaluated on their merits and drawbacks.
  - Prohibition: GE is never ethically permissible.

Risk vs. Uncertainty

- Decisions under risk: Consequences of actions can be assigned probability numbers
- Decisions under uncertainty: Consequences of actions cannot be assigned probability numbers

- At this point in time, many decisions about using genetically engineered crops and animals are decisions under uncertainty

The Precautionary Principle

- "When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."

  •*Wingspread Statement on the Precautionary Principle, Jan. 1998*

- "Lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

  •*Rio Declaration 1992*

The Precautionary Principle

- What does the PP instruct?
  - Avoid all risk of harm?
  - Avoid all risk of irreversible harm?
  - Minimize expected risks of irreversible harm?
  - Assure that risks are borne by those who stand to benefit?
  - Assure that expected benefits justify incurring known risks?

The Precautionary Principle

- Is the PP a good (partial) guide to right action?
- What does the PP instruct regarding the application of GE to agriculture?

Components of moral theory

- Value theory: What makes something good (valuable) or bad? What has intrinsic value?
- Theory of right action: Which actions are morally permitted, which are morally required, and which are morally prohibited?
- Virtue theory: What character traits make a person a virtuous person?

Ethics & Genetic Engineering

- Value theory:
  - What entities in the GE debate have intrinsic value? What makes a particular technology good or bad?
- Theories of right action:
  - What actions that might be taken by farmers/researchers/industry/activists/consumers are permitted, required, or prohibited?
- Virtue theory
  - Are farmers /researchers /industry /activists /consumers acting virtuously or not?

Meta-Debate: Virtue arguments

- Friends of the Earth: “Golden rice may never help poor farmers, but it could give the beleaguered European biotech industry a new grasp on life.”
- Florence Wambugu: “These critics [of biotech], who have never experienced hunger and death on the scale we sadly witness in Africa, are content to keep Africans dependent on food aid from industrialized nations while mass starvation occurs.”

Beyond for or against

- Under what circumstances does genetic engineering raise important moral considerations?
- Are there specific conditions under which genetic engineering may yield particularly good or bad consequences?
- Are there ways in which the potential bad consequences of genetic engineering could be mitigated?

Ethics of Commercial Cat Cloning

Cat cloning: ethical issues

- Do you have any ethical concerns about cat cloning?
  - If so, what are your concerns?
  - If not, why not?

Cat cloning: ethical issues

- From the GSC website discussion forum:
  - I don't understand this!! I just saw this website for the first time and it has actually made me cry! I am terrified, TERRIFIED for our future.
  - Everything in this website is so twisted. It reads like cloning is the most natural and normal thing in the world. Smiling people holding cloned cats, ignoring the fact that they know in their hearts that this is not meant to be. Do most of you not think this is just WRONG!!
  - But cloning DOES NOT HAPPEN IN NATURE!! THIS IS NOT SUPPOSED TO BE, NEVER WILL BE!!
  - Don't the advocates realize they will clone humans??? But this is probably okay with them.

Cat cloning: ethical issues

- Cat cloning from GSC currently costs the client $32,000 per cat.
- In the First Nine Lives Extravaganza of 2004, cat cloning cost $50,000 per cat.
- Why is it so expensive, and why did the price come down?

Cat cloning: ethical issues

- Why would anyone want to clone their cat?

Cat cloning: ethical issues

- Client testimony from the GSC website:

  •“Over the course of our lives we have adopted many animals from animal shelters, and they’ve all been wonderful. The fact is, Smokey is one in a million.

  •He accompanies us when we go to our neighbors and waits outside for us. He walks us home. All these things show that there’s a bond there beyond the normal cat relationships that we’ve had with our other cats.”

CC and Rainbow

CC

Rainbow (Genetic Donor)

CC and Rainbow

CC and ... ?

Cat cloning: ethical issues

- How many cats does it take to guarantee a clone in 6 months?
  - Genetic donor
  - Egg donor: harvest from live donor, or use ovaries from spay clinic
  - Surrogates: 20 pregnancies to guarantee a clone after six months?
  - Cloned kittens brought to term

Cat cloning: ethical issues

Cat cloning: ethical issues

Cat Cloning: For or against

- Is it ethically permissible to have one’s cat cloned?

Beyond for or against

- Is it ethically permissible to have one's cat cloned?
- Would a virtuous person clone her cat?
- Is it ethically permissible for a society to allow the existence of cat cloning companies?
- Are there ways to mitigate the potentially negative consequences of commercial cat cloning?

Cat cloning: ethical issues

•GSC Code of Bioethics, Pet Division (2000)

•5P) GSC shall guarantee that its activities reduce the national population of unwanted dogs and cats by a greater degree than its cloning activities add to the problem. Methods for accomplishing this may include development of canine/feline pharmacological contraceptives and/or sterilants, use of shelter dogs as surrogates (subsequently adopted), and/or donation of funds to shelter systems sufficient to place a greater number of cats or dogs than GSC produces by cloning.

• 7P) The psychological welfare, happiness and socialization of all animals in the GSC Pet Division shall be considered at all times. All Pet Division animals shall be guaranteed a daily minimum of two hours of playtime - outdoors weather permitting, indoors otherwise - with people hired specifically for this task.

Cat cloning: ethical issues

•GSC Code of Bioethics, Pet Division (2000)

• 8P) All animals associated with the Pet Division of GSC, whether egg donors, surrogates, etc., shall at the completion of their association with GSC be placed in loving homes. When procuring animals, GSC shall seek to obtain adoptable animals scheduled for destruction by laboratories and animal shelters, versus animals produced by breeders. No funds shall be expended for animals raised under inhumane conditions, such as in "puppy mills." GSC shall provide state-of-the-art training for all GSC dogs, using only positive reinforcement, in order to increase their adoptability.

10P) In the unlikely event that an animal is born with deformities or other problems, it shall only be euthanized if it is suffering, and shall otherwise be placed in a loving home at GSC expense.