

# BioethicsBytes Extended Commentary

## Making “creatures that work for us” - Animal Farm (3)

### Introduction to this resource

Welcome to this *BioethicsBytes Extended Commentary*. These are intended to provide all readers - teachers, learners and members of the public alike – with a more in-depth discussion of issues raised by media presentations of developments in biology and biomedicine. They are supplementary to the posts on the *BioethicsBytes* website, and elaborate themes identified in the main commentaries.

In general, they deal with one or more very specific bioethical issues raised by featured programmes. They focus on specific quotes, or exchanges, in the source material that illustrate moral concerns or ethical concepts that have application beyond the context of the programme. The extended commentaries draw on a wider range of media and academic texts than can be presented on the main website, and, as such, can provide readers with additional resources on specific topics.

**Bonnie Green**  
University of Leicester, UK

[bg62@le.ac.uk](mailto:bg62@le.ac.uk)

[www.bioethicsbytes.wordpress.com](http://www.bioethicsbytes.wordpress.com)

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## Introduction to Making “creatures that work for us”<sup>1</sup> – Animal Farm (3)

This extended commentary attempts to unpack some of the ethical issues implicit in [☞ Animal Farm, Episode 3](#)<sup>2</sup>, specifically in the statement that “we can take a gene from one species and put it into another, creating extraordinary new creatures that work for us in ways we have never seen before” (00:03:17). That is, the ethical implications of humans ‘using’ transgenic animals for their own purposes – i.e. as means to ends. Here, I shall consider the use of animals for purposes considered in *Animal Farm*, episode 2:

- for the medical benefit of humans;
- for our personal pleasure;
- and, to militate against environmental problems caused by human activity.

Finally, this extended commentary will also deal briefly with whether the use of animals as means to ends is ethically justifiable, whatever the situation.

### 1. The use of animals for medical benefit

The basic question here is: is it ethically justified to use animals – including transgenic animals - for the medical benefit of humans? Given the footage, animals, and interviews shown in *Animal Farm*, it seems that both presenters would answer a resounding ‘yes’ to this question. In ethical terms, however, this ‘yes’ is a utilitarian answer (see the BioethicsBytes extended commentary [☞ The “Pharmaceutical Farm”](#) for a further discussion of utilitarianism, or this entry on [☞ consequentialism, Stanford Encyclopaedia of Philosophy](#)). It is arrived at by balancing harms against benefits. Where the net benefits are greater, the action is ethically justified. This is considered to be a relatively ‘objective’ way of arriving at such a conclusion, since utilitarianism does not intentionally distinguish between humans and animals in assessing harms and benefits. This type of reasoning can be illustrated by considering Olivia Judson’s reaction to the “spider-goat” (00:03:30) she meets in this episode.

As outlined in the main commentary to this episode (see [☞ Making “creatures that work for us” - Animal Farm \(3\)](#)), the “spider-goat” is a transgenic goat, engineered to produce the proteins that make up spiders silk in its milk. Judson is apparently highly supportive of this, particularly given the potential contribution mass produced spiders silk could make in the area of artificial ligaments, joints and limbs. These would represent a significant medical benefit for a large number of people. The lives of all those with artificial legs, arms, even hip joints, could be substantially improved by the lightweight, durable alternatives that could be made with the spiders silk proteins produced by these goats. Further - and bringing together two issues discussed in [☞ The “Pharmaceutical Farm”](#) - the transgene inserted into the goat does not appear to harm it in any way: it does not cause it pain, nor alter its identity as a goat. Thus, on a utilitarian analysis, this application of transgenic technology seems to be ethically justified: the potential benefits are large, while the harms appear minimal.

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<sup>1</sup> Animal Farm, Episode 3. 2007. [TV]. Channel 4, 26th March, time in 00:03:18.

<sup>2</sup> Originally broadcast on Channel 4 on 26th March 2007; [☞ TRILT](#) identifier 0062CC6E

However, utilitarian analysis does rely – at least to some extent – on there being a consensus on what constitutes ‘harm’ and ‘benefit’. For some the introduction of a transgene into the goat may itself be a form of harm: it can be considered a fundamental alteration of the goat’s nature, and in that sense a violation of some kind. Further, in terms of the utilitarian cost-benefit analysis, it also seems important that the benefits promised are in fact realised, otherwise they cease to be benefits. In the case of the spider-goat it would seem that the benefits may not be realised (see [☞ \*After the GE goat flop - spider silk from GE plants? – Associated Press, January 5th 2004\*](#)). This alternative interpretation of harm, and the suggestion that benefits might not be realised, may alter the conclusion reached above.

## 2. The use of animals for pleasure

Here again a utilitarian analysis is possible. The question in this context is: is human pleasure a sufficient benefit to justify the creation of a transgenic organism, particularly if the insertion of a transgene is taken to be a harm in itself. While Giles Coren’s reservations about all applications of transgenics are clear throughout this series, his assessment of the GloFish (see [☞ \[www.glofish.com\]\(http://www.glofish.com\)](#)) is distinctly negative.

These fish, which contain a transgene from sea coral that makes them fluoresce, were originally intended to help detect pollutants in water. In terms of weighing up benefits and harms, though the introduction of the transgene and the potentially fatal consequences of dropping the fish into polluted water represent significant harms to the fish, the benefits for humans – and indeed other fish – could be huge. Such transgenic fish might allow contamination of rivers and streams to be detected earlier, and, if the technology were available in the Third World, save numerous people the harms associated with drinking contaminated water. However, as is described in *Animal Farm*, episode 3, the GloFish are not currently being used for this purpose. They have become the first GMO’s to be made commercially available as pets designed for pleasure and relaxation.

As outlined in [☞ \[The “Pharmaceutical Farm”\]\(#\)](#), one of the fundamental principles of animal ethics is the equal consideration of interests. This principle stipulates that where animal and human interests are comparable, they should be given equal consideration – including in utilitarian calculations. For most animal ethicists (for example, Peter Singer), the most basic common interest for humans and animals is for a relatively pleasurable, pain free life. While this definition suggests a conflict of interests in the case of the GloFish (i.e. harm to the fish through the insertion of the transgene v. human pleasure), for Giles Coren at least, the harms seem to clearly outweigh the benefits, and he implicitly concludes that the creation and use of the GloFish for human pleasure is ethically dubious at best.

## 3. The use of animal to militate against environmental problems caused by human activity

A final way in which transgenic animals are depicted as being made to “work for us” in *Animal Farm* is in the mitigation of environmental problems caused by human activity. In ethical terms this is a complex area, as it concerns the moral status of

humans, animals and the environment (which both humans and animals rely on and can be considered a part).

The [☞ Enviropig](#) is an excellent example of how the moral statuses we assign to humans, animals and the environment can come into conflict. This transgenic pig has had a man-made transgene inserted into its genome such that it is able to break down organic phosphorous in its food – something no ‘normal’ pig can do. This is cited as an example of how we can now produce “animals to our exact specifications” (00:28:12). As far as the analysis above is concerned, the creation of the Enviropig could be considered unethical on the grounds that genetic alteration constitutes a type of harm – unless it can be balanced by a greater benefit. Here the *direct* benefit is to the environment: the Enviropig’s manure has a much lower phosphorous content than the ‘normal’ pig’s, hence the polluting impact of intensive pig farming is reduced. Thus, in this case it appears that when assessing whether or not the creation of the Enviropig is or is not ethically justified, we must balance the harm to the pig against the benefits to the environment. We must consider our responsibilities towards animals and those concerning the environment: which of these do we have a greater duty towards, and why?

While the above utilitarian calculus does incorporate human interests to the extent that a less polluted environment might be considered a benefit to us, there is also a clearer *indirect* benefit to humans that should be considered: this is highlighted by Judson’s reference to the importance of pig farming in terms of human health. She states, “pork consumption plays a vital role in maintaining human health across the globe, but as long as we keep eating pigs at this rate, we’re causing problems for the environment” (00:23:09). Here Judson implies that the real benefit to humans of the Enviropig is the ability for us to keep on eating pork at much the same rate as today – or even to increase consumption. Insofar as this impacts upon human health globally, this indirect benefit may enter utilitarian calculus concerning the Enviropig in much the same way as a direct medical benefit.

Another issue relating to the interaction between human, animal and environmental ethics is the possibility for resurrecting extinct species using the technique of [☞ somatic cell nuclear transfer \(SCNT\)](#). The example shown on *Animal Farm* is the “resurrection of 25 year old Banteng” (00:40:15) from cells stored in a “frozen ark” (00:43:09), though this would also be possible with plants, insects, etc. This raises the question of whether or not it is right to “bring back” (00:41:54) long dead animals – either individuals or whole species. In her commentary on the ‘resurrected Banteng’, Judson goes even further: she implies that it may be our moral duty to both, bank the DNA of, and clone, such animals where extinction is the result of human activity (e.g. hunting, deforestation, etc). She suggests that this is one way we might preserve and maintain biodiversity since “because of human activity, 50% of all life forms may become extinct in the next 100 years” (00:36:36).

[☞ Environmental ethics](#), for example, suggest that we do have a moral responsibility towards the environment (of which all non-human species are a part). This may be phrased in terms of either intrinsic, or instrumental, value, however, in both cases this branch of ethics seems to lend support to the protection of biodiversity through the use of biotechnology – particularly in cases like that of the Banteng where one individual is ‘resurrected’ in order to reintroduce variation into the species gene-

pool. But what of recreating whole species whose natural habitats no longer exist, either because they are long past, or have been destroyed by human activity?

The woolly mammoth is just one possible target for this use of the technology (see [🔗 Woolly Mammoth Resurrection, "Jurassic Park" Planned – National Geographic, 8th April 2005](#)), however *Animal Farm* questions both the ethics, and utility, of such an endeavour, though not on the grounds of environmental ethics. The Banteng’s creator, Oliver Ryder, states “if bringing it back is something for our own amusement then I think that is the wrong reason” (00:42:20). With this he brings the question of whether it is right or wrong to ‘resurrect’ animals back to a utilitarian calculus of benefits and harms, and – as in the case of the GloFish – where benefits are couched in terms of human pleasure, this is apparently insufficient to justify the creation of such transgenic animals.

#### 4. Animals as means to ends

While the discussion above has illustrated how a utilitarian framework might be used in analysis and decision-making about some of the transgenic animals presented in *Animal Farm*, episode 3, it is also worth noting deontological arguments raised by some Judson and Corens’ statements in this programme. For example, we might ask:

- Is it ever right to produce “creatures that work for us” (00:03:17)?
- Is the production of “animals to our exact specifications” (00:28:12) ever ethically justifiable? (00:03:17)
- Is “putting animals to work” (00:47:36) by modifying their genes acceptable under any circumstances?

Underlying all these references to producing or creating animals to do things for us is a basic question: independent of any benefits that might accrue to humankind (directly or indirectly), is it ever acceptable to use animals as ‘means to ends’<sup>3</sup>?

The discussion of animals as ‘means to ends’ is often associated with Kantian ethics, which distinguishes between humans as ‘ends in themselves’ and animals ‘means to ends’. Here humans and animals are distinguished on the basis of their capacity for rationality. Kant argues that it is the capacity for rationality that marks humans out from animals and gives them the status of ‘ends in themselves’. Animals are part of the non-rational world and, as such, are not worthy of moral consideration. They may be seen and treated merely as ‘means to ends’. Thus, on this analysis it would seem that all the uses of animals shown in *Animal Farm*, including the GloFish Corens finds so problematic, are ethically acceptable – with our only moral responsibility being not to offend human sensibilities by our (mis)treatment of animals.

However, the Kantian position can and has been disputed in a number of ways. For example, there is the argument from what Garner (2005) calls ‘marginal cases’. This refers to whether or not we would view non-rational humans (for example young babies, people with advanced dementia, or those in persistent vegetative states) as ‘means to ends’ in the same way as animals. Conversely, it could also be asked, that where animals do display the capacity for rationality, should we then be obliged to treat them as ‘ends in themselves’? Further, is the capacity for rationality the only, or

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<sup>3</sup> For example: to create transgenic animals (means) to effect improvements in human health (ends).

most, relevant criteria for separating humans and animals? Might there be other criteria that recommend animals as ‘ends in themselves’, rather than merely things that can be created, produced and used by humans for their own benefit<sup>4</sup>?

## References

DeGrazia, David. (2006). “On the Question of Personhood Beyond *Homo sapiens*”, In Singer, Peter (Ed). *In Defense of Animals: The Second Wave*. Blackwell: Oxford. pp. 40-53.

Garner, Robert. (2005). *Animal Ethics*. Polity Press: Cambridge, UK.

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<sup>4</sup> For a discussion of the possibility for ‘animal personhood’ see DeGrazia (2006).