TOWER OF BABEL: VARIATION IN ETHICAL APPROACHES, CONCEPTS OF WELFARE AND ATTITUDES TO GENETIC MANIPULATION

M C Appleby

Institute of Ecology and Resource Management, University of Edinburgh, West Mains Road, Edinburgh EH9 3JG, UK

Abstract   *Animal Welfare 1999, 8: 381-390*

Attitudes to animal biotechnology are diverse, partly because people have different viewpoints and often do not recognize or acknowledge this to be so. First, people adopt different ethical approaches. If an opponent of genetic manipulation says 'I don't like the idea of altering animals' biology' and a proponent replies '...but it is useful', they are failing to communicate, because one is asking whether the action is right or wrong, whereas the other emphasizes the consequences. Another approach focuses on the person carrying out the action. Many people have hybrid views combining elements of these different approaches. Second, people's concepts of welfare vary, emphasizing animal minds, bodies or natures – or a combination of these. A proponent who argues that a particular genetic change will not cause suffering is unlikely to reassure an opponent who puts more emphasis on naturalness than on feelings or health. An improved dialogue, in which people attempt to understand one another's viewpoints, may enable common principles to be established and practical measures to be taken that enable more cooperation in attempts to improve both human and animal welfare.

Introduction

Attitudes to animal biotechnology, including the diverse applications of genetics, are notoriously diverse. They are so diverse that there often seems to be little communication: people might almost be speaking different languages. For example, in a recent issue of the *Bulletin of Medical Ethics* there were two articles back to back. The first (Bulfield 1997), was by the Director of Roslin Institute where Dolly the sheep was cloned (Wilmut *et al* 1997). Bulfield gave an overview of biotechnology in farm animals, including cloning, and, not surprisingly, was generally positive about its use. For instance, he wrote that 'cloning from adult cells (as with Dolly) would permit the replication of ... a proven high yielding and productive dairy cow' (p 15). He concluded (p 17) that:

> The new technologies present enormous benefits to us but also some dangers from misuse. I believe, in the main, in the UK, the regulatory framework is adequate for guarding against abuse of ethical or animal welfare standards. It is, however, important that the scientific

community continues to publicise scientific advances in ways that the public and governments can understand, so that the uses can continue to be regulated in an informed manner.

The second article (Linzey 1997), was by Andrew Linzey who holds a Fellowship at Oxford sponsored by the International Fund for Animal Welfare. It opposed cloning on the following five grounds.

Cloning represents an ethically regressive view of animals.
Cloning renders animals liable to harm.
Cloning intensifies a morally reductionist view of animals.
Cloning involves the commercial degradation of animal life.
Cloning represents a spiritually impoverished view of animals.

The two articles came to very different conclusions: for and against cloning. It is conceivable that they could have reached those conclusions while both using the same approach. Linzey might have weighed the benefits and dangers, as Bulfield did, and formed a different opinion about the balance. Or Bulfield might have considered the ethical and theological arguments that Linzey used to support his five statements, but rejected them. Instead, they used very different approaches in coming to their conclusions, as we shall see below. This means that it is difficult to decide which is the more persuasive. Indeed, readers may find both persuasive. They may find themselves no closer to a clear opinion on biotechnology after reading both articles (and possibly others on the subject) than before.

Many problems in communication stem from the fact that people addressing this subject hold different viewpoints, without necessarily recognizing or acknowledging this to be so. These viewpoints do not just concern facts about genetics. More importantly and fundamentally, they concern approaches to ethical analysis and concepts of key issues involved such as animal welfare. Given this diversity, the discussion has often resembled the cacophony reputed to have arisen at the Tower of Babel rather than a reasoned debate. Communication would be improved if the participants made more effort to understand one another's languages. Improved communication will not itself lead to agreement between the participants – but it does raise the further possibility of some convergence of attitudes and some increase in the degree of consensus achievable on future applications of genetics.

Ethical approaches

The fact that there are different approaches to ethics is emphasized in an increasing number of articles on the applications of ethics, such as that by Peter Sandøe and colleagues (Sandøe *et al* 1997) on ethics in relation to animal welfare. Three major approaches will be briefly outlined here; a broader background could be obtained from general texts on ethics (Williams 1972), including bioethics (Beauchamp & Childress 1994). Some moral philosophers argue or imply that people should adopt one approach in full, so as to be consistent in their ethical decisions and judgements. However, others reject the idea that a single approach is appropriate. In everyday life, people tend to have hybrid views, accepting elements from two or more approaches.

One major approach in ethics, called consequentialism (Blackburn 1980), concentrates mostly or wholly on the consequences of our actions. The best-known form of this approach

is utilitarianism: the idea that we should act so as to produce the greatest good (or utility) for the greatest number of individuals. Peter Singer (1975) is a utilitarian. His particular contribution was to stress that when we reckon up the good and bad consequences of our actions, consequences for animals must be given equal weight to those for humans unless there are impartial grounds for doing otherwise.

Singer's argument was consistent, but few people are wholly utilitarian in their approach. For example, most feel that the pleasure of 20 000 people in an amphitheatre did not justify causing the suffering of a gladiator in Roman times, and many feel that it does not justify causing the suffering of a bull today either. There are other difficulties in applying utilitarianism. Its most famous proponent, Jeremy Bentham, added the condition that achieving 'the greatest good for the greatest number' requires that 'causing least harm' should also be an aim (Bentham 1789). This is relevant to the treatment of animals because it suggests that no avoidable suffering should be caused. However, the definition of 'avoidable' is problematic, because attempting to achieve the greatest good while causing the least harm may sometimes lead to irreconcilable contradictions. Furthermore, predicting the consequences of our actions is frequently difficult or impossible.

A second ethical approach, then, is that there are some things we should do, and some things we should not do, regardless of good or bad consequences. This is called deontology (from the Greek 'deon', a participle of the verb 'to be necessary' [Schwartz *et al* 1990]). This approach may suggest that causing severe suffering to a monkey is wrong, even if it results in production of a new medicine with considerable benefits. Deontology leads to the dual concepts of duties and rights. Regan (1983) is the best-known advocate for these to include both human duties to animals, and animal rights.

Many other aspects of ethics come under this second, broad heading, including some religious views. Many religious people hold the view that we have a duty to care for God's kingdom, including his animals, although religions differ in both their broad and detailed conclusions about this. Much of modern applied ethics attempts to be religiously and culturally neutral, but similar attitudes also arise in other contexts. Thus, many people take a similar position in relation to nature or to the environment: they feel that we ought to care for the environment, including animals.

Theories of duties and rights sound convincing, but they leave us with many difficult decisions. Does a mouse in the kitchen have the right not to be killed? If we have the right to kill that mouse, why not another in a medical experiment?

There is a source of confusion here that needs to be dispelled. The term 'animal rights' is sometimes used in a loose sense to refer to the whole issue of animal protection, rather than in the formal way proposed by Regan. Singer himself is sometimes associated with 'animal rights' in this sense, in phrases like 'Father of the Animal Rights Movement', adding to the confusion. Singer supports animal protection but not animal rights (Singer 1987).

A third major approach suggests that the main focus for ethics should be neither the actions under consideration, nor their consequences, but the person or agent involved. This is because the personal situation of the agent must always be relevant to the rightness or wrongness of their actions. This approach may be called agent-centred ethics (Blackburn 1980).

Within all these approaches, there is a diversity of opinion about what is considered a harm or a benefit and about what can be harmed or benefited. For example, some consequentialists consider only harms and benefits to individuals as relevant, whereas others include consequences for, say, biodiversity. Some deontologists with an ecological perspective argue that we have duties to protect animal species, as well as the individual members of those species. One area related to agent-centred ethics is virtue ethics, in which views on the nature of virtue in general and of specific virtues are developed. Various traditions may contribute to such views, for example the Christian tradition espoused by Linzey (Linzey 1986). These diverse opinions about harms and benefits include the various concepts of animal welfare that will be discussed in the next section.

Different approaches may produce conclusions in common. For example, all these approaches are frequently used to argue that we should do more for animal welfare. However, some conclusions differ. Thus, utilitarians and proponents of animal rights disagree on whether using animals for human benefit is generally permissible. Utilitarians say that it is, if the benefits outweigh the harms. Arguments for animal rights suggest that it isn't, and that animals have the right not to be harmed, regardless of the potential benefit to humans. People who don't realize the difference between Singer's and Regan's approaches must find it difficult to understand these contrasting conclusions.

However, most people do not follow Singer or Regan in attempting complete consistency in their ethical approach. In this they have the support of philosophers such as Mary Midgley. Midgley (1986) describes the argument between utilitarians and animal rightists as a 'football match' and says (p 195): 'The idea that morality could be reduced to a single basic form is a foolish one.' Most people are concerned with both the consequences of their actions and the actions as such – with what are also called 'extrinsic' and 'intrinsic' issues respectively (Reiss & Straughan 1996). Sandøe et al (1997; p 15) recognize this tendency:

> [A] hybrid view which is attractive to many people combines elements from utilitarianism and the animal rights view. One version of this would say that there are certain things that one may not do to animals, no matter how beneficial the consequences, for example causing the animals to experience intense suffering. As long as we abstain from these things we can, on this view, reason as a utilitarian would do. For example, killing of animals or causing them mild distress or inconvenience may be allowed if sufficiently good consequences follow.

We can now see that Bulfield's and Linzey's divergent arguments were based on different ethical approaches. In emphasizing the potential benefits and dangers of biotechnology, Bulfield was primarily adopting a utilitarian approach. By contrast, only one of Linzey's five statements concerned consequences: that 'Cloning renders animals liable to harm'. The other four concerned views about humans and their attitudes towards animals that combine elements of both deontological and agent-centred approaches. Furthermore, Bulfield and Linzey were taking different harms and benefits into account in their assessments. Bulfield was considering only utility: a relatively straightforward conception of human and animal welfare. Much of Linzey's writing, in the sources quoted and elsewhere, concerns values other than welfare.

In not recognizing or acknowledging alternative approaches, Bulfield and Linzey failed entirely to communicate with each other. It will be suggested below that proponents and opponents of genetic manipulation, such as these two, could find common ground if they wish to do so and if communication is improved.

Concepts of welfare

For those who are concerned about the consequences of genetic manipulation on animal welfare – including both utilitarians and those who use a mixture of utilitarian and other approaches – the question arises: what is animal welfare?

It is increasingly recognized that people do not all have the same concept of welfare. Three concepts are common, and people may believe one of these or a mixture of two or three (Duncan & Fraser 1997; Fraser *et al* 1997). First, animal welfare may concern feelings such as pleasure and suffering. Second, it may concern health and fitness, so that problems such as disease and injury are the most important challenges to welfare. Third, welfare may concern the ability of animals to express their 'nature', for example by living in natural conditions. These concepts can be summarized as emphasizing animal minds, bodies and natures respectively (Appleby 1999).

Bulfield (1997) is explicit both in his concern for welfare and his view of what welfare is. In the following quotation (p 16) he argues that one example of genetic engineering – altering sheep to produce a medicine in their milk – causes no suffering or physical problems to the animals (at least once the genetic change has been achieved). The study to which he refers was by Hughes *et al* (1996).

> I consider that animal welfare is about the physical or psychological state of the animal rather than the way it is bred. For example, if an animal is seriously lame either because of poor treatment, housing, diet, breeding techniques or transgenesis then that is not acceptable. It is not the technique which is crucial but the resultant effect on the animal. In fact, a detailed study of the behaviour of transgenic sheep at Roslin could find no differences between them and control animals in eight measurements in three husbandry conditions.

Nevertheless, Bulfield will not persuade opponents that the procedure in question is acceptable, if their view of welfare puts more emphasis on animal natures than on animal minds or bodies. For example, Michael Fox of the Humane Society of the United States writes as follows (Fox 1990; p 32):

> The *telos* or 'beingness' of an animal is its intrinsic nature coupled with the environment in which it is able to develop and experience life. We can harm the *telos* in many ways, for example through environmental, genetic, surgical and pharmacological manipulation. To contend that we can enhance the natural *telos* of an animal – and thus by extension believe that we can improve upon nature – is *hubris*. Genetic engineering makes it possible to breach the genetic boundaries that normally separate the genetic material of totally unrelated species. This means that the *telos*, or inherent nature, of animals can be so drastically modified (for example by inserting elephant growth hormone genes into cattle) as to radically change the entire direction of evolution, and primarily toward human ends at that. Is that aspect of the animal's *telos* we refer to as the genome and the gene pool of each species not to be respected and not worthy of moral consideration?

Fox is partly concerned here with effects on whole animal species: what Sandøe *et al* (1997) refer to as the 'species integrity view'. However, he is also concerned with the welfare of individual animals, and it is apparent that he would not accept Bulfield's assurances about the welfare of transgenic sheep.

Similarly, the pressure group Compassion in World Farming (CIWF) campaign vigorously for a complete ban on genetic engineering of farm animals, largely because of its

effects or potential effects on welfare. Their view of welfare is broad, as indicated by this comment on the idea of using pigs to provide organs for transplantation to humans (CIWF 1994):

> Pigs are woodland-loving animals, who live naturally in family groups and spend half their time rooting in the soil for food. CIWF is appalled that vast numbers of pigs may end up as organ providers, living out lives which will lack all quality or joy.

Again, this broad view means that CIWF would be unlikely to accept assurances from those working towards xenotransplantation that the welfare of the pigs concerned is satisfactory, even if the housing conditions of the pigs were excellent.

So this is another area where, for dialogue to occur, the different parties need to be more aware of one another's viewpoints, whether their aim is compromise, consensus or persuasion.

Variation in three dimensions

The picture is further complicated by the fact that the authors of any two articles on genetic procedures may, of course, differ in both their ethical approaches and their concepts of welfare. This is true for the following pair of quotations, which both address the justifiability of changing animals by genetic engineering and come to opposite conclusions. Michael Reiss and Roger Straughan – a biologist and a philosopher writing on the ethics of genetic engineering – comment on work intended to produce turkeys that do not become broody, so as to increase their egg production (Coghlan 1993). They suggest (Reiss & Straughn 1996; pp 183, 193) that this work is inappropriate:

> At present, farmers try to 'shock' female turkeys out of broody behaviour by exposing them to bright lights or by making them stand on wires, so that they are unable to settle down and brood. It could be argued that genetically engineering turkeys so that the females do not show broody behaviour will be to the benefit of the animals' welfare. Of course, this line of reasoning is open to disputation on the grounds that two wrongs don't make a right ...
>
> [This work involves]...an excessively instrumental view of living creatures... All poultry should be able to engage in nest building and at least some brooding behaviour.

By contrast Rollin (1995; p 172) believes that changing animals in this sort of way is acceptable. He illustrates this with a hypothetical example:

> Consider a case where one might be tempted to change the telos of an animal – chickens kept in battery cages for efficient, high-yield egg production. It is now recognised that such a production system frustrates numerous significant aspects of chicken behavior under natural conditions, including nesting behavior, and that frustration of this basic need or drive results in a mode of suffering for the animals. Let us suppose that we have identified the gene or genes that code for the drive to nest. In addition, suppose we can ablate that gene or substitute a gene that creates a new kind of chicken, one that achieves satisfaction by laying an egg in a cage ... Have we done something morally wrong?
>
> I would argue that we have not. A key feature of the new ethic for animals I have described is concern for preventing animal suffering and augmenting animal happiness, which I have argued involves satisfaction of telos ... If changing animals by genetic engineering is the only way to assure that they do not suffer, people will surely accept that strategy, though doubtless with some reluctance.

These passages differ in their depiction of the factors relevant to welfare. Reiss and Straughan mention the physical treatment of the animals (bright lights and standing on wires) and it seems that they consider the physical and mental effects of these important. Rollin, however, emphasizes animals' feelings (suffering and happiness) and their 'telos' or nature. If this was the only important difference, their conclusions might be the other way round, Reiss and Straughan supporting change and Rollin opposing it.

However, the passages also differ in ethical approach. Reiss and Straughan say that the consequences of the procedure for animal welfare are not the most important issue: their use of the phrase 'excessively instrumental' is a criticism of a utilitarian approach that regards animals as mere instruments for achieving human benefit. Their writing, therefore, conveys an implicit support for the rights of animals or for the duties of humans towards the animals in their care (Reiss and Straughan's views confirmed by M J Reiss, personal communication 1998).

Rollin also supports animal rights to some extent in other writing, including within the same book (Rollin 1995). However, in the passage quoted above he is applying a utilitarian approach. This is consistent with his proposal (p 175) for a Principle of Conservation of Welfare:

> Any animals that are genetically engineered for human use or even for environmental benefit should be no worse off, in terms of suffering, after the new traits are introduced into the genome than the parent stock was prior to the insertion of the new genetic material.

In this case, the conclusions of the authors are more affected by their ethical approaches than by their concepts of welfare. In other cases the reverse might be true.

It is possible that the association between people's ethical approach and their concept of welfare is non-random. For example, people concerned with rights and duties may tend to favour a concept of welfare that concerns respect for animal natures, considering that we shouldn't interfere with animals even if they are cold or diseased in their 'natural conditions'. Conversely, consequentialists may be more concerned with tangible effects on the feelings and functioning of the animals. However, no empirical evidence is available on such an association.

Speaking the same language

Reiss and Straughan could doubtless have a constructive discussion with Rollin. In fact, their end points are not as divergent as they initially appear. Reiss and Straughan conclude that the work on turkeys is ethically questionable – but point out that it may, in practice, improve welfare. Rollin suggests that the hypothetical work on hens would reduce suffering – but that the public would have reservations in accepting it. There are certainly other examples of genetic manipulation of animals on which these authors would agree, judging some to be acceptable and others to be unacceptable.

What about proponents of genetic techniques such as Bulfield and opponents such as Linzey and CIWF? What is the possibility of dialogue between them? Assuming that they want dialogue, how should they proceed? Four areas will be considered here: the current situation, the potential for improved communication and tentative suggestions for theoretical and practical progress that might arise from such improvement.

First, it should be pointed out that there is already some overlap in their opinions, because proponents do not suggest that *all* biotechnological procedures are admissible. As quoted above, Bulfield says explicitly that breeding techniques or transgenesis that cause serious welfare problems are not acceptable – and in the utilitarian approach procedures that cause minor problems are also unacceptable, unless those are outweighed by benefits to be gained.

Second, communication would be improved if people concerned about these issues could come to recognize their own and the other's viewpoints. If you and someone else are using different approaches or different concepts as bases for your arguments, it doesn't help for you to state your own opinion ever more forcefully in the hope that the other will eventually agree. Understanding the other's viewpoint (including their ethical approach and their concept of welfare) doesn't automatically mean accepting it. It does mean being willing to justify your own viewpoint, to decide whether you disagree with the other, and if so to explain why – which may be challenging or uncomfortable. It also raises the *possibility* that you may come to accept the other viewpoint, perhaps partially, and so increases the chance of a convergence in attitudes.

Third, given improved communication (with or without changes in attitude), it may be possible to identify principles in common. As an example, the Banner Committee, set up by the UK Government to consider the ethics of biotechnology applied to farm animals, outlined an ethical framework (Banner Committee 1995; p 1):

> The main element in this framework is a set of principles which properly govern the treatment of animals and which express the view that the use of animals is permissible providing that use is humane. The humane use of animals respects the following three principles.
> (a) Harms of a certain degree and kind ought under no circumstances to be inflicted on an animal.
> (b) Any harm to an animal, even if not absolutely impermissible, nonetheless requires justification and must be outweighed by the good which is realistically sought in so treating it.
> (c) Any harm which is justified by the second principle ought, however, to be minimized as far as is reasonably possible.

One major step taken by this framework is to reject a solely utilitarian approach: principle (a) indicates that it is not acceptable to inflict severe suffering even if enormous benefits are to be expected. These principles are, in fact, very similar to the position taken by Bulfield in the quotations given earlier – which is not surprising because Bulfield was a member of the Banner Committee. They are also similar to the 'hybrid ethical view' held by many people and outlined by Sandøe *et al* (1997).

Not everyone will agree with this particular formulation. Andrew Linzey will probably not agree that the main criteria for the use of animals to be permissible should be based on harm to animals (or avoidance of harm). Whether CIWF agree with these principles probably depends on whether they feel that 'harm' covers a range of meanings that match their broad view of animal welfare and welfare problems. However, this ethical framework could probably be supported in large part by many concerned people.

The fourth issue arising from the possibility of dialogue between proponents and opponents of genetic techniques, then, is practical. Communication and agreement of broad principles may lead to demonstrable outcomes.

Here are two tentative suggestions for practical steps that might result from dialogue. Many opponents of genetic engineering object particularly strongly to the production of

animals that are obviously unnatural, whether or not they obviously suffer. Thus, in 1997 *Agscene*, the CIWF magazine, showed photographs of 'The "geep" – a genetically engineered combination of a sheep and a goat' (CIWF 1997a) and of a fluorescent green mouse, carrying a jellyfish gene as a marker for other gene insertions (CIWF 1997b). Neither of these animals was produced at the Roslin Institute. It would be appropriate for the Roslin Institute and for other such institutes supportive of dialogue to announce a moratorium on work of this kind – to say that they acknowledge the concerns of groups like CIWF about animal natures and animal dignity and that they will seek to achieve their aims (such as finding markers for gene insertion) by means consistent with those concerns.

Correspondingly, opponents could acknowledge that the benefits to be gained from genetic techniques are at least a valid factor to be taken into account in their consideration, and that relatively little harm is caused by at least some of those techniques. As such, they could modify their campaigns that call for a complete ban on genetic manipulation and their campaigning material that implies all such manipulation is equally objectionable. CIWF have produced a report entitled *Animal Organs in Humans* (Langley & D'Silva 1998). It lists many 'uncalculated risks and unanswered questions', and their publicity (CIWF 1998) goes on to say that:

> The production of 'clean' source animals is far from simple and would involve extensive surgical procedures and confinement in barren, biosecure housing.

While their other criticisms may or may not be reasonable, these seem relatively mild welfare problems to justify condemnation by a group whose name indicates that welfare is their main concern. Surgery will only be necessary initially and neither surgery nor biosecure housing inevitably cause suffering, so the welfare problems of transgenic pigs are considerably less than those of many other groups of animals. Perhaps CIWF could acknowledge this in future. While not necessarily endorsing this work, they could at least enter sufficiently into dialogue with genetic practitioners to indicate that it is less objectionable than some, and to encourage moves from the practitioners such as the moratorium just suggested.

Implications for animal welfare

Proponents and opponents of genetic manipulation have more in common than might at first be realized, and could make considerable progress towards speaking a common language if they would acknowledge and seek to understand one another's viewpoints. Such dialogue *might* produce some convergence of attitudes, but whether or not it had this result, it would increase the chance of achieving a measure of consensus on some applications of genetics. By communicating in this way we could make more progress towards improving both human and animal welfare, rather than arguing destructively around the Tower of Babel.

Acknowledgements

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