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One very fundamental question of immense contemporary importance concerns the ethics of mixing human and animal parts. The most likely scenarios consist of starting with a human individual (embryo or more mature instantiation of a human genome) and adding animal bits (genes, cells, tissue, organs etc) or starting with animal and adding human bits. In either case the ethics of doing such a thing turn on two main issues. Again assuming that we are not planning on arresting development at the embryonic stage but allowing the resulting creature to develop into a mature individual, the main ethical issues seem to be the following:

1. Will the admixture of elements from another species be likely to prove beneficial or harmful to the individual? Would it, on the balance or probability, be a cruelty or a kindness to allow a creature like this (or as we expect a creature modified in this way to be) to grow to maturity? And are the expected benefits sufficient to compensate for the risks?
2. Are we prepared to accept the consequences? That is are we as a society prepared to accept that if we “enhance” animals to the point at which they might count as persons, we should be prepared to accord them the rights and protections of interests, dignity and status that go with personhood?

We should bear in mind that enhancement of animals to a condition (and hence a moral and political status) comparable to that of human persons is something that happens to (almost all) human animals. Human individuals start (and remain at all stages up to and including that of neonate and probably beyond) as human non-persons comparable in all essentials, save only that of their potentiality and genetic constitution, to animal non-persons. Thereafter, through a combination of socialization, language acquisition and education, they become enhanced to the point where they become “persons” properly so called. We do not usually balk at this form of animal enhancement, indeed we would regard it as criminally negligent to fail to enhance such human animals to the point of personhood and beyond. If we reach a point at which we can be confident that animal enhancement, whether by human admixture or by other means, is as safe and reliable as the normal development of human children, the potentiality of both humans and animals for personhood will be comparable in all relevant respects .

If we could meet the objections encapsulated in ethical issue “1” above and satisfy ourselves that we could avoid both cruelty to the resulting creatures, and that to enhance them in these ways would be beneficial then, provided we could satisfy “2” above, it is

not only arguable that we should do so but surely it would be difficult to find moral objections to doing so in any particular case. Doing so comprehensively however, that is doing it on a large scale, would have economic, population and many other further ramifications that would have to be carefully thought through and would be unlikely to prove attractive. But we should also bear in mind that the present, almost unbridled, expansion of the human population is almost equally unattractive from many perspectives.

Finally we should note that the rare instances of apparently authentically reported so called "wolf children", children brought up in isolation from other humans by animals and who have as a result neither been socialised nor acquired language, give us further reasons to reflect on the moral reasons we have to provide those ingredients which might turn animals into persons when we find them lacking. Ludwig Wittgenstein provides an analogous case. At section 342 of his *Philosophical Investigations* he takes up an example given by William James and speculates about whether it would be possible for a human deaf mute to have abstract thoughts before he had acquired a language which might provide the medium for such thoughts. Wittgenstein seems sceptical about this, asking (at section 344) "would it be imaginable that people should never speak an audible language, but should still say things to themselves in the imagination?". In both these sorts of cases language acquisition functions as an enhancement tool that apparently makes possible a step change in development.

An important concern in the case of enhancing animals or creating "humanimals," then, is the ethics of increasing the likelihood for some creatures that they may qualify as persons. Provided this process is clearly in their interests and that once they do qualify, we are prepared to recognise them as such, there should be no moral objections to doing so.

Many seem to think that the addition of mechanisms for articulating sounds – speech is important. But if animals acquire speech it would have to be *language*, not simply word like noises and that would mean they were self-conscious.

And of course, as I argue, in the paper I submitted to the Deutscher Ethikrat, we humans are "humanimals" with animal bits inherited in our genes and metabolised in our diet etc.

From my perspective one of the main things we have to understand is how problematic the separation of the categories animal/human are at the levels which will interest science for the foreseeable future. I believe it is also important to convey an understanding that we current humans are human/animal combinations of a sort not dissimilar to those that might be created for science research or even for real, and that therefore the worries about human animal mixing come, in one important sense, millions of years too late. That of course does not mean it is irrational to resist further deliberate mixing, but rather shows that objections to or even caution about such mixing will have to be on the usual moral grounds (safety, welfare, flourishing, harm and benefit etc) and not based on a prejudice akin to racism.

## ADDITIONAL ISSUES

We need to think always about the difference between what WILL cause ethical concern (or rather concern that people will label, perhaps unjustifiably, ethical concern”) and what SHOULD cause ethical concern. Not all judgments about issues of ethical importance are ethical judgments.

It is difficult to see why humans should be denied beneficial changes (enhancements) solely on the grounds that they involve animal bits and difficult to see why the research that might lead to these beneficial changes should not be undertaken.

More generally some perennial questions:

All human animal mixes will cause concern but none need/should cause concern that either involve:

1. human embryos that will not survive beyond 14 days or
2. Animals that have human admixtures that have no chance of making the animal self-conscious as opposed to merely conscious, that is have no chance of making it a person and which of course do not suffer.
3. If suffering to such animals will be involved it must (as in straightforward animal experimentation or in agriculture) be proportionate to the expected benefits for other animals or for humans.

### **Cannibalism.**

It is sometimes said that, for example, if we allow human animal mixes this might inadvertently lead to cannibalism. Many sheep already carry human clotting factor/liver cells, would eating them constitute cannibalism? It would, but that raises the more fundamental question of what is wrong with cannibalism? Any answer to this question would have to be mindful of currently widely accepted (if not acceptable) human practices of breast feeding, kissing and indeed other sexual practices not to mention blood transfusions and organ transplants.

The Academy of Medical Sciences said in its report “Inter-species embryos”<sup>1</sup>, viz:

#### *8.3.1 Subversion of the animal-human species distinction*

Some have argued that the creation of embryos combining human and non-human animal material is unacceptable because it subverts the animal-human species distinction and undermines human dignity and human rights.

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<sup>1</sup> *Inter-species embryos. A report by The Academy of Medical Sciences* June 2007. ISBN No: 1-903401-15- 1. The present author acknowledges his co-authorship of this report and thanks fellow members of the Academy Working Group for many useful insights.

It is important to distinguish the creation of a human-animal embryo that will not exist beyond the 14 day limit from the more speculative possibility of bringing such an embryo to term. Let us begin with the first case. Here the proposed research involves the creation of cells that will only be maintained *in vitro*, and will never be permitted to become human-animal hybrid or chimeric creatures. Implanting such an embryo into a woman is illegal in the UK, and we do not want to see this changed. We do not consider the creation of such cells *per se* to pose any threat to human dignity. We have previously described the long history of laboratory work involving the mixing of human and non-human cells, and the value of such work in generating knowledge and tackling human disease. *In our judgement, no moral (nor any other) harm has derived from the many inter-specific hybrid cell lines that have been created.*

But what if the creation of hybrid or chimeric creatures is eventually contemplated for some specific and substantial medical or scientific reason? Such a situation is considerably more morally charged than the creation of embryos only within the 14 day rule. Several other examples of 'mixing' human and animal material can also be identified, the most obvious being xenotransplantation. The use of pig tissue in operations to repair damaged heart valves in human patients is now in widespread practice. Few have argued (and none cogently) that transplanting a pig heart valve into a human compromises the humanity or dignity of the recipient.

On a more fundamental level we judge it unlikely that 'human dignity', a phrase used to emphasise special moral status and importance of human beings, derives simply from species membership. If the concept of 'human dignity' has content, it is because there are factors of form, function or behaviour that confer such dignity or command respect. Either hybrid creatures would also possess these factors or they would not. If they do possess these factors, they would also have a specific type of dignity analogous or identical to human dignity that other creatures lack; if not, they would not. Either way, the distinction between creatures that possess dignity and those that do not remains as it is now.

The hypothetical possibility of allowing mixed-origin embryos to come to term might be thought to threaten dignity in two distinct ways: either the dignity of the hybrid or chimeric creatures would suffer because they are not fully human, or human dignity would suffer because of the creation of creatures that are close to, but not quite, human. Regarding the first possibility, we again emphasise that dignity arises from the qualities possessed by a creature, rather than species membership *per se*. This focus on the possession of qualities also applies to the second possibility. Our dignity does not depend on our distance from all other creatures, but on the intrinsic nature of our endowments.<sup>2</sup>

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<sup>2</sup> To give a non-human analogy, the existence of mules does not decrease or compromise the dignity of horses.