

Linacre Centre Submission to the Science and Technology Committee Inquiry into Government Proposals for the Regulation of Hybrid and Chimera Embryos

1. The Linacre Centre for Healthcare Ethics is a bioethics research institute under the trusteeship of the Catholic Trust for England and Wales. We publish material, run conferences and provide speakers on a range of bioethical issues, and also offer advice and information to individual scientists, health professionals and patients. This Submission has been prepared on behalf of the Centre by Dr Helen Watt, the Director of the Centre, and Anthony McCarthy, its Research Fellow.

2. We welcome the opportunity to respond to the Science and Technology Committee's Inquiry into Government Proposals for the Regulation of Hybrid and Chimera Embryos. Our concerns in this area relate not only to respect for the lives of human embryos who may be created (in some cases, by destroying other human embryos), but to respect for the value and meaning of human procreation. Such respect can, we believe, be violated by substantial human contributions to the production even of embryos - or embryo-like entities - which are clearly non-human. However, it is more seriously violated by contributions to an embryo who is - or may well be - human, and who is deprived of human parents, for whom is substituted an animal progenitor.

3. The destruction of embryos is our most serious concern: we are opposed to all research involving a lethal attack on a human moral subject, of any age or stage of development. In the words of the Declaration of Helsinki, 'In research on man, the interest of science and society should never take precedence over considerations related to the wellbeing of the subject' (III.4). A human subject is nothing more or less than a living human organism (which is not to say that this organism is reducible to its various physical parts). The human subject has objective rights and interests in his or her wellbeing and survival: rights and interests which relate to the special nature of the rational human kind. Such rights and interests are present in young children, and indeed embryos and fetuses, who have a moral stake (albeit an unconscious stake) in their own wellbeing as members of the human kind, no less than older human subjects.

4. Human beings can be created in other ways than fertilization: for example, by embryo splitting or cell nuclear transfer – including, perhaps, cell nuclear transfer using a non-human ovum. Such new methods of creating embryos give rise to new ethical concerns. While we are opposed to all research on embryos, this is not to say that a ban on particular forms of embryo research is not also highly desirable: there are various levels at which the human (or possibly human) embryo can be harmed or degraded.

5. It is difficult to know whether some novel techniques will result in a genuine human embryo.¹ In view of this, it is a matter of basic moral prudence to avoid creating an embryo who may well be human – that is, whose moral status is ambiguous. This problem is in no way solved by destroying the embryo, whether at 14 days or at 5: abuse of human subjects is not cancelled by the greater abuse of ending the subject's life.

6. If the embryo is, indeed, human, there is a particular wrong that has been done to it, apart from the wrong of creating it for the sole purpose of research, or even the wrong of creating it deliberately disabled (as in the case of some cloned embryos²) so as to study the disease process and/or test the efficacy of certain drugs. Serious as these wrongs are, there is an additional wrong in the case of animal-human hybrids, in that the embryo's dignity is violated by the very structure of its creation.

7. Again, this is not simply because the embryo is the product of a manufacturing process – though this is itself a serious offence against the embryo's dignity. Embryos manufactured as if they were products are particularly likely to be viewed and treated as products; indeed, they are sometimes explicitly referred to as products, as in the Government's White Paper itself.³ However, the embryo made from animal components is still further alienated from any possibility of parental respect or protection, in that this embryo may have literally no human parents.

8. Take the case of an embryo who is conceived via transfer of an adult somatic cell nucleus to an animal ovum from which the nucleus has been removed. Like any clone, such an embryo has no true genetic parents;⁴ moreover it lacks even the fractional element of genetic motherhood found in a woman's provision of an enucleated ovum. The embryo's quasi-mother is not, in this case, a woman who donates a 'gutted' ovum to its formation, but is, instead, a non-human animal. The hybrid embryo would be even more isolated from the human community than other clone embryos (this is not, however, to ignore the serious ethical problems inherent in ovum donation, both in terms of risks to women's health and in terms of lack of respect for the parental role such donation embodies).

9. An embryo may be created in other ways – for example, by fusing existing human embryos or embryonic cell lines with non-human cells. Again, resulting embryos will

¹ For reflection on what would identify an embryo as human, see H.Watt, 'Embryos and Pseudoembryos: Parthenotes, Reprogrammed Oocytes and Headless Clones', forthcoming in the *Journal of Medical Ethics* (available online at <http://jme.bmj.com/preprint/watt.pdf>).

² We are referring here to cloned human embryos created precisely in order to have a genetic disability which can then be studied in their cells. Of course, cloning itself creates serious genetic abnormalities, which again poses questions about the usefulness for treatment or research of cells derived from clones – even those with no animal components.

³ Thus the White Paper on Review of the Human Fertilisation and Embryology Act refers at 9.31 to '[o]ther human-animal cell fusion products' (the implication being that hybrid or chimera embryos are themselves products, despite their putative humanity).

⁴ The nucleus provider is likely to feel a sense of ownership, not parental responsibility, over the cloned embryo, who may be perceived as a mere product of his or her cells.

have no human parents, even in the fractional sense of the woman who provides the mitochondrial DNA and other parts of an enucleated human ovum. It is easy to see how a human chimera may be treated with less respect than embryos who have human parents, given the low status attributed – in our view wrongly – to its embryonic progenitor (this progenitor may itself be seen as having barely more status than the animal embryo with which its cells are combined). More importantly, the chimera's creation will require the destruction of a pre-existing embryo, whether in the course of the experiment itself, or in the production of the embryonic cell-line from which the new embryo is created. To be deliberately formed from the bodily remains of another human embryo is, again, an offense to the dignity of the embryo created, as well as that of the earlier embryo in whose death the scientist is already complicit.

10. It is true that many chimera or hybrid embryos may not, in fact, be human embryos, even if human embryonic cells are used to create them.⁵ Leaving aside the risk of creating human embryos, and assuming that such embryos would not be created, we believe the production of hybrids and chimeras can still offend against human dignity. Such production seems at once too close to, and too far removed from, normal human procreation – as can be seen from the intuitions of many members of the public when considering the morality of trans-species fertilization, even where no human embryo will result.

11. It should be remembered that animal-human hybrids and chimeras are in any case likely to be of limited scientific value, due to the abnormal nature of their cells. They are unlikely to provide any treatments for patients, in view of the medical risks which they carry: risks not limited to the transmission of animal viruses to humans. It should be remembered that mitochondrial problems are a key factor in many neurodegenerative diseases; there would also be particular risks if hybrid cells were used to treat heart or liver complaints, for which cloning has been proposed as a solution.⁶ Rather than pursue such a clinical dead-end, there should be further investment in adult stem cell research, which is morally acceptable to the vast majority of patients and clinicians worldwide, and has already produced treatments for 72 conditions to date.⁷

12. We would urge that the creation of animal-human hybrids and chimeras be prohibited not merely for the time being (as the Government's White Paper proposes) but

⁵ We are not objecting to the addition of insignificant amounts of human genetic material to some non-human organism. In such a case – unlike a case where human sperm or a human nucleus is used to 'fertilise' an animal ovum – it cannot be said that the human material is substituting for animal gametes. Such interventions therefore seem sufficiently removed from human procreation to be ethically acceptable - always assuming the human genetic material comes from an ethical (in practice, non-embryonic) source, and will make only a minor contribution to the animal to which it is transferred.

⁶ Scottish Council on Human Bioethics, 'Embryonic, Fetal and Postnatal Animal-Human Mixtures: An Ethical Discussion', 7.2.

⁷ For constantly-updated information on existing adult stem cell treatments, see www.stemcellresearch.org

for the foreseeable future. The importation of hybrids and chimeras from abroad should also be prohibited, as should any commercialization of these or other human (or potentially human) embryos. Such prohibitions are well within the proper scope of law, given the importance of the values – respect for human life and human parenthood – which they would acknowledge and protect. Any scientific or commercial gains from hybrids or chimeras are likely to be of small importance; not so the massive offence to human dignity any such research would display.

