

The Secretary  
House of Representatives Standing Committee on  
Legal and Constitutional Affairs  
Parliament House  
CANBERRA ACT 2600

20 March 2000

Dear Secretary,

On behalf of this Centre I am sending you our supplementary submission to the **House of Representatives Standing Committee on Legal and Constitutional Affairs Review of AHEC's Report on Scientific, Ethical and Regulatory Considerations Relevant to the Cloning of Human Beings** following the Inquiry Hearing in Melbourne on 1-3-2000.

Our Centre represents, and is funded by, the following Healthcare Institutions in Victoria:

Bethlehem Hospital, Caulfield  
Caritas Christi Hospice, Kew  
Mercy Hospice Care, Sunshine  
Mercy Hospital for Women, East Melbourne  
Mt Alvernia Mercy Hospital, Bendigo  
St John of God Hospital, Ballarat  
St John of God Hospital, Geelong  
St John of God Hospital, Warrnambool  
St Frances Xavier Cabrini Hospital, Malvern  
St Vincent's Hospital, Fitzroy  
St Vincent's and Mercy Private Hospital, Fitzroy  
Werribee Mercy Hospital

We trust our submission will be of some assistance to the Committee on this important topic.

With my best wishes,

Yours sincerely,

Rev Norman Ford SDB STL PhD  
Director

**SUPPLEMENTARY SUBMISSION after the INQUIRY HEARING 1.3.00,  
CAROLINE CHISHOLM CENTRE for HEALTH ETHICS, East Melbourne,  
to the HOUSE OF REPRESENTATIVES STANDING COMMITTEE on  
LEGAL and CONSTITUTIONAL AFFAIRS  
REVIEW of AHEC's REPORT on  
SCIENTIFIC, ETHICAL AND REGULATORY CONSIDERATIONS RELEVANT TO  
THE CLONING OF HUMAN BEINGS**

**Absolute Respect and Protection for Human Embryos**

Non-therapeutic, destructive or harmful research on human embryos, be they naturally conceived embryos, IVF embryos or cloned embryos, is absolutely unethical and should be legally banned. The same applies to a cell or group of cells which is probably an embryo, i.e. where there are reasonable grounds for believing, but not with certitude, that it is an embryo. This is the meaning of 'probability' in the Catholic moral theology tradition. There is no duty to protect what is possibly a human embryo if there are no reasonable grounds to support this view.

More specifically for moral respect to be due to ES cells it would suffice for there to be reasonable grounds to believe ES cells were already embryos, but not simply a remote possibility of this being the case.

**Definition of a Human Embryo**

In our Centre's first written submission I referred to my article "Is Every Isolated Embryonic Cell an Embryo" published in the *Chisholm Health Ethics Bulletin*, [5/2 (1999) 1-4] for a full explanation of my definition of an embryo and related matters. A copy of the article was attached as an integral part of the submission.

Before amending my definition of a human embryo a couple of notions need to be explored. An egg is not an embryo, but it has the potential to become an embryo. This happens when it is fertilised by a sperm or it is activated by an electric shock to become a parthenogenetic embryo. The fertilised human egg is an embryo and it has the *actual* capacity (potential) to continue human development in a suitable environment. An inactivated egg lacks this actual capacity. An adult body cell nucleus is not an embryo but it is a potential embryo because it has all the genetic information required to form an embryo. If a human adult nucleus were to be fused with an enucleated human egg with the assistance of an electric shock, a cloned human embryo might be formed. Because of the 'Dolly' experience, there would be reasonable grounds to believe such a cloned cell would be a human embryo and would have the actual capacity to continue development once it is placed in a suitable environment.

I now wish to amend my definition of a human embryo. A definition gives the reason why a cell(s) is a human embryo and deserves respect. It also enables us to tell what is to count as embryo and what should not. My amended definition, put simply, is as follows:

*A human embryo is a live cell, or group of cells, which has the inherent actual capacity to continue organised species specific human development, given a suitable environment.*

This definition includes a fertilised egg, a single cell isolated from a four-eight cell embryo, an entire blastocyst and each half of a split inner cell mass (ICM) which continues to develop as an identical twin within the blastocyst. The definition excludes instances of failed fertilisation, embryonic tumours, teratomas and generally any live isolated embryonic cell or group of cells which lack *the inherent actual capacity to continue organised typical human development, given a suitable environment* (e.g. a single cell from a 20-32 cell stage embryo).

### **Are Frozen Human Embryo still Embryos?**

When IVF human embryos are frozen their metabolic rate is almost reduced to zero and development ceases. They are not dead, but living in suspended animation. When successfully thawed and placed in a suitable environment, they continue their human development. This is because they retain their *inherent actual capacity to continue organised typical human development* whilst frozen. And this is done without the addition of any new genetic material. Clearly frozen embryos deserve the moral status of human embryos.

### **Are Human Embryonic Stem Cells Embryos?**

*I acknowledge this seems to be a key outstanding issue for the Committee to resolve.*

Once human ICM cells are removed from a blastocyst (embryo), the blastocyst is destroyed and both the ICM cells and the outer or trophoblast cells soon perish because they lose their *inherent actual capacity to continue organised typical human development, given a suitable environment*. After an ICM cell is removed from the blastocyst, it is called an embryonic stem (ES) cell. ES cells are treated for culture and placed on a feeder layer of cells where they survive and multiply indefinitely without developing any further. A human ES cell is not an embryo but a clump of human ES cells could become an embryo if the clump of ES cells were to be aggregated with human trophoblast cells in a suitable environment. I say this because a clump of mouse ES cells have been aggregated with mouse trophoblast cells to form an embryo which produced a viable mouse genetically derived from the ES cells. If this experiment were to be successfully done with human ES cells, the resulting human embryo would have the actual capacity to continue development in a suitable environment.

I do not believe this experiment provides reasonable

grounds to believe mouse ES cells are a mouse embryo before they are aggregated with trophoblast cells from another mouse embryo.

This experiment has not been done with primates and nobody knows if it would succeed in the human. All we can say is that it might succeed -- it a possibility. In any case it would be unethical to attempt to engineer artificially a human embryo in this way, perhaps harming or destroying another blastocyst to obtain the trophoblast cells. I do not believe there are reasonable grounds to support the view that a human ES cell or a group of ES cells by themselves is an embryo. However they might have the potential to become an embryo once they are mixed with trophoblast cells. If on the other hand, I were to be given evidence that there are reasonable grounds to believe human ES cells are embryos, even short of certitude, then I would agree that ES cells ought to be treated with the respect due to embryos. For the time being I agree with what the US National Institutes of Health published in "Stem Cells: A Primer" in December 1999:

Inner cell mass cells are **pluripotent** -- they can give rise to many types of cells but not all types of cells necessary for fetal development. Because their potential is not total, they are not totipotent and they are not embryos. In fact, if an inner cell mass cell were placed into a woman's uterus, it would not develop into a fetus.

*From an ethical perspective it would be better if ES cells could be obtained by the partial reversal of differentiation of stem cells derived from adults' bodies, without harming or destroying human embryos. As I said at the end of my above mentioned published article:*

*The challenge for scientists is to find an ethical way to engage in ES cell research for medical purposes without the risk of harming or cloning human embryos, to the satisfaction of the community.*

### **Collusion with Destroying Human Embryos to Obtain ES Cells**

Clearly it is unethical to destroy blastocysts to obtain ES cells. Though ES cells in themselves are not embryos and need not *per se* be given the respect due to embryos, it is unethical for researchers to benefit from, or to use, ES cells if they were in any way in collusion, or tacit agreement, with obtaining them by harming or destroying a human blastocyst. In practice this means it would be unethical for scientists and their assistants to participate in research projects on ES cells obtained in these circumstances. The situation is similar to the use of fetal tissue taken from aborted fetuses for transplantation. The adoption of a policy to use this fetal tissue inevitably involves collusion with abortion. The transplant team would be disappointed if an abortion did not occur as expected!

Rev Dr Norman Ford SDB - 19-3-2000