Submission

To
The Community Affairs Legislation Committee
Of
The Australian Senate

Inquiry Into

Legislative responses to recommendations of the Lockhart Review

including

Somatic Cell Nuclear Transfer (SCNT) and Related Research Amendment Bill 2006
(Senators Stott Despoja and Webber)

And

Prohibition of Human Cloning for Reproduction and the Regulation of Human Embryo Research Amendment Bill 2006 (Senator Patterson)

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1. Introduction

Thank you for this opportunity to make a representation to the Senate Affairs Committee in regards to *Legislative responses to recommendations of the Lockhart Review*.

The Catholic Church is well known for its advocacy and support of human rights, including the rights of the unborn. The sanctity of life principle does not differentiate between persons in any regard and certainly not those in the human family at the very beginnings of life's journey.

In raising opposition to the notion of human cloning, particularly with the embryo's destruction as a result, this submission wishes to affirm support for scientific research which is ethical and offers genuine foreseeable outcomes.

All human persons, regardless of age, infirmity or other characteristic, deserve to be treated with respect and protection. The embryo included.

This submission therefore rejects the recommendations of the Lockhart Review that pertain to human cloning and embryo stem cell extraction, the creation of animal/human hybrids and chimeras and the harvesting of human precursor cells from aborted fetuses.

Consequently, we oppose the passage of both bills under consideration.

We firmly support the advances and direction of adult stem cell research which we believe make unethical embryonic stem cell use and human cloning redundant.

2. Ethical Objections – *the end does not justify the means.*

This cornerstone of western ethics seems to have been ignored in this debate or, at least, superseded by a form of unbridled utilitarianism.

> *"For some people, the values attached to treating disease and overcoming infertility are more important than the value of the embryo."* Justice Lockhart.[1]

Utilitarianism or, the greatest good for the greatest number has, in the realms of medicine and medical science at least, always been tempered by the Hippocratic dictum, *primum non nocere*: First, do no harm. This principle applies to all human life, without exception.

A classical criticism of utilitarianism is that it deals poorly with minorities. Human embryos, smaller than a full stop yet fully human and alive, are surely the most vulnerable of minorities.

Thomas Aquinas wrote that, "An evil action cannot be justified by reference to a good intention". This submission questions whether even the intention of the legislation under consideration can actually be considered to be a 'good' end at all.

No one would argue that finding cures and treatments for disease is, of itself, not good. However, in consideration of the accepted reality that such cures may yet be 'at least 5 to 10 years off'[2], the killing of any number of innocent lives because of some distant possibility is as remote from the action as to be almost beyond consideration.

The 'means to the end' in this debate is the creation and destruction of human embryos. Reluctant as we might be to use such a harsh term, the reality demands that the action be so named as 'an evil'. How else (without the justification of self defence or by way of accident) can we describe the killing of another human?

The development of the Nuremberg Code in 1947 and the subsequent Declaration of Helsinki by the World Medical Association in 1964 set objective standards and ethical boundaries for medical research involving human beings. Both made reference to the informed consent and, while the later declaration made room for consent by proxy, both codes re-affirmed the do no harm principle. The Nuremberg Code also stated that human experimentation should be based upon the results of animal testing, a precedent that we suggest has not been adequately observed in regard to cloning and embryo stem cell research. (see section 5)

The Universal Declaration of Human Rights (1948)[3] further developed the principle of the 'right to life'- otherwise known as the sanctity of life principle. The preamble includes the statement,

> *'Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world…'*

Read in conjunction with Article 3: *'Everyone has the right to life, liberty and security of person.'* And in consideration of the inalienability of these rights, regardless of '…*birth or other*

[1] Foreword to Lockhart Review report page v

[2] See *New York Times* Article August 17, 2006

[3] See www.un.org/Overview/rights.html

status' (Art. 2), it is clear that the human embryo holds such rights which cannot be arbitrarily dismissed, for any reason.

More recently, in 2005, the General Assembly of the United Nations adopted the Declaration on Human Cloning *'by which Member States were called on to adopt all measures necessary to prohibit all forms of human cloning inasmuch as they are incompatible with human dignity and the protection of human life.'*[4] Though some dissent was recorded concerning the term 'human life' in the context of the false distinction between therapeutic (so-called) and reproductive cloning, the declaration passed with a large majority, including the vote of the Australian delegate. This declaration is entirely consistent with both the sanctity of life principle and Australian legislation.

Summary: The right to life principle is an inalienable right enjoyed by every member of the human family without distinction. The status of the embryo, being both human and alive, is beyond debate. The consideration of the relative 'value' of the embryo as compared with any outcome whatsoever is not a legitimate question where the end can only be achieved by way of the embryo's destruction. To devalue some human lives in such a way is to devalue all human existence.

3. The Prohibition of Human Cloning Act 2002

The history surrounding the period in 2002 where the fate and status of the human embryo was debated in one and finally two pieces of legislation is interesting indeed. A number of commentators in the contemporary debate, reflecting upon the unanimous support for the ban on human cloning at that time, have asked the question: What has changed?

This question can be answered at a number of levels. What scientific breakthroughs? What has caused such a radical *volte face* in the thinking of some of our parliamentarians? Or, what has changed that has convinced the Australian people that cloning is an acceptable practice when, only four years ago, cloning was 'the yuk factor'?

Before attempting to shed light on at least some of the answers, it is important to recognize that the PHC Act 2002 stands as both a true reflection of the 'will of the people' at that time and a bulwark in defence of human life. The fact that, virtually simultaneously, the Research Involving Human Embryos (RIHE) Bill passed, allowing for certain human embryos to be degraded, firstly by referring to them as 'surplus' and secondly, by their destruction, is a complete contradiction.

In the Lockhart Review's Executive Summary we read examples of the committee's deference to utility that perhaps shed a little light on why the parliament appeared to contradict itself on the life principle between these two bills.

> *"In framing the recommendations for these reviews, the Committee considered that the higher the potential benefits of an activity, the greater the need for ethical objections to be of a high level and widely accepted in order to prevent that activity."*[5]

[4] See www.un.org/News/Press/docs/2005/ga10333.doc.htm

[5] Lockhart page XIV

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In the debate over the use of embryos 'surplus' to IVF treatments, the line of argument that, 'they're going to die anyway' was difficult to argue against. In reflecting upon the Lockhart Committee's comments (above) it might seem that the 'noe' sayers simply did not have enough of an ethical arsenal to 'out gun' supporters of embryo research. This may seem to have been the case, but to suggest, therefore, that the ethical objections were not significant or could be diminished by reference to 'potential benefits' is simply to adopt a 'squeaky wheel' approach and to dismiss basic ethical principles out of hand.

As we have already stated, human life, all human life is worthy of the same respect, dignity and right to life that we all enjoy. A cloned human embryo, by its nature and its human rights, would be no different to you or me, or any embryo, no matter how it was created. So then, in the current debate, how is it that we accept a false distinction between one cloned human embryo and another simply on the basis of the intention or 'end use' that scientists may or may not have in mind?

The distinction we have been encouraged to accept is between 'therapeutic' and 'reproductive' cloning. All cloning is, by its nature, reproductive – it reproduces life. The term 'therapeutic' applies a remedial outcome to the reproductive action. We should no more call the action of cloning 'therapeutic' than we should call it 'destructive' - both terms reflecting an outcome and not the initial action.

Dr. Gregory Pike, Director of the Southern Cross Bioethics Institute referred to these 'name changes' as "semantic gymnastics", adding that, "what is in fact cloning is now masked behind cloudy vagueness. It has made it difficult for the public to know what actually is being talked about."[6]

Former head of the US President's Council on Bioethics, Leon Kass, made a similar observation:

> *"Although as a scientific matter 'somatic cell nuclear transfer' (SCNT) may accurately describe the technique that is used to produce the embryonic clone, these terms fail to convey the nature of the deed itself, and they hide its human significance."*[7]

As we will note later on, there are no remedies attributable to embryonic stem cells derived from human embryos - cloned or otherwise – that could even remotely suggest that cloning had a therapeutic outcome. It is certainly not therapeutic for the embryo.

And so, this false distinction is wrong at the level of both action and outcome. In reference to the PHC Act 2002 we would simply draw to attention the fact that this act itself makes no reference to either of the terms reproductive or therapeutic. Some parliamentarians referred to cloning using both terms in their speeches; but the act remains a prohibition of all human cloning, regardless.

Summary: The Prohibition of Human Cloning Act 2002 banned the act of human cloning and, rightly, made no reference to the supposed distinctions between 'therapeutic' and 'reproductive' cloning. The creation and usage of the term 'therapeutic' and, to a lesser degree 'Somatic Cell Nuclear Transfer' or 'SCNT' appears to be intent upon obfuscating the reality of what is actually involved in human cloning and embryo stem cell extraction.

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[6] *Australian Life Scientist* article: The great divide: therapeutic cloning. Nov/Dec 2005

[7] Kass in *New York Times*, May 29 2005

4. Public Opinion – what is the reality?

Public opinion polling can be a useful tool in gauging both the sentiment in Australian society and the level of understanding on a particular issue. However, the ethics and moral probity of an action cannot be diminished by reference to the level of concern in the community. Ethical and moral concern, however, can be confirmed by polling; particularly when such polling comprises more than just a single question and includes clarification on the issue.

The Morgan Poll in June of this year drew the conclusion that a, 'Large Majority of Australians Approve Extraction Of Stem Cells From Human Embryos For Medical Research'.[8] Yet the two questions used in this survey contained ambiguous statements about the nature of the embryo. Question 3 said that, 'The embryo is no longer capable of further development', and question 4 claimed that, no fertilization takes place and there is no merger of the egg and sperm'. Both statements will have had the effect of falsely diminishing respondents' possible concerns over embryonic human life. This has been borne out by two other polls.

The Swinburne National Technology and Society Monitor focused its 2004 survey on stem cell research[9]. Finding 3 relates that, 'Most Australians are uncomfortable with stem cell research using cloned human embryos'.

More recently, the January 2006 poll conducted by Sexton Marketing Group for the Southern Cross Bioethics Institute used a series of questions to gauge public attitudes to therapeutic cloning.[10] Question 30 a 'Do you support or oppose the cloning of human embryos as a source of stem cells?' returned 51% in opposition (and 29% in support). Question 30 b showed that a substantial minority (43%) were unaware that extracting embryonic stem cells destroyed the embryo. The follow up question (30 c) asked the 'unaware' respondents to the previous question whether their new awareness concerning the destruction of the embryo changed their view. 61% of this sub-group recorded opposition; returning a total opposition of 55% of the whole sample. (Support dropping from 29% to 14%)

Summary: Once the ethical issues have been explained, the majority of Australians surveyed reject the idea of human cloning for any purpose.

5. The Review

The Terms of Reference for the statutory review, known as the Lockhart Review, begin as follows:

> *1. The Legislation Review Committee - Prohibition of Human Cloning Act 2002 and the Research Involving Human Embryos Act 2002 is required to consider and report on the scope and operation of each of the Prohibition of Human Cloning Act 2002 and the Research Involving Human Embryos Act 2002 taking into account:*

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[8] www.roymorgan.com/news/polls/2006/4036/ Finding No. 4036

[9] www.swinburne.edu.au/lss/acets/monitor/2004MonitorFULL.pdf#search=%22Swinburne%20cloning%22

[10] *Research on public attitudes to therapeutic cloning.* SCBI/Sexton. Jan 2006

> *(i) the following statutory requirements:*
>
> *a) developments in technology in relation to assisted reproductive technology;*
> *b) developments in medical research and scientific research and the potential therapeutic applications of such research;*
> *c) community standards;*
> *d) the applicability of establishing a National Stem Cell Bank*[11]

This submission concerns itself mainly with Lockhart's recommendations arising out of a) and b). We do question, however, in respect to c) *community standards*, how, with 80% of submissions received being clearly against any relaxation of the prohibition of human cloning and further destructive embryo research, did human cloning not remain under the ban? Lockhart's standard for making its own recommendations could not be clearer:

> "*…the higher the potential benefits of an activity, the greater the need for ethical objections to be of a high level and widely accepted in order to prevent that activity."*(emphasis added)

But Lockhart's Issues Paper (Aug 2005) tells an entirely different story:

> *"It is not the purpose of the reviews to revisit the underpinning community debate and rationale for the legislation. Rather, it is to review the two Acts in light of changes in scientific or community understanding or standards since 2002, and any indications that the provisions are no longer appropriate and/or practical in their application."*[12](emphasis added)

This should have meant that the community standard circa 2002 was to be considered by Lockhart as a benchmark; only to be modified in review of how those standards may have changed. Yet the report by MPConsulting on Lockhart's findings says that, "The Committee's considerations appeared to be based around the potential of SCNT for the treatment of illness and *the Committee's own resolution of the ethical issues*." (emphasis added)

The Terms of Reference document does not mention ethics at all. There would appear to be an unwritten understanding that 'ethics' and 'community standards' are, in some sense, interchangeable terms. This is not entirely so (see section 4). However, what is clear is that Lockhart overstepped its brief. It has either revisited the 2002 community standards and dismissed them – which it was not entitled to do; or it has resolved that standards have changed sufficiently since that time as to warrant human cloning and research. Eight out of ten submissions weighing in against such change and the existence of polling confirming the fact tends to confirm MPConsulting's findings. The Lockhart Committee's report also fails to provide any direct evidence of change.

Nor have there been any scientific developments pointing to an urgent need for human cloning.

Emeritus Professor of Medicine at the University of Melbourne, John Martin, recently put the case against SCNT in these terms.

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[11] Lockhart see www.lockhartreview.com.au/terms.html

[12] Lockhart Issues Paper see http://www.lockhartreview.com.au/_files/Issues%20Paper(3Aug05).pdf page iv

> *"There are no cell-based therapies for any disease that would warrant the preparation of human embryonic stem cells by SCNT ("therapeutic cloning"). Proof of this as an approach has never been obtained from any experimental model of disease in animals. When claims of the benefits of embryonic stem cells are made, the list of diseases usually consists of diabetes, Parkinson's, Alzheimer's, muscular dystrophy, the replacement of dead heart muscle following heart attacks, of brain tissue following strokes and so on. For several of these conditions there are appropriate experimental models that can be studied in animals, but it remains the case that embryonic stem cells have never yet been shown in animal research to provide a cure that is sufficiently prolonged and free of complications to warrant human studies. To accept the urgency of work on human embryonic stem cells in the face of the ethical barrier, then at least one experimental example should be provided of safe, prolonged and substantially effective treatment that is better than any existing treatments."*[13]

Successful, repeated and peer-reviewed trials in animals has always been seen as a necessary prelude to human trials. Yet Lockhart appeared to ignore such basic scientific processes, basing their conclusions about the potentiality of SCNT and embryo stem cell research on the work of Korean Scientist, Hwang Woo-Suk (since discredited) and a 2005 report from the United Kingdom (Stojkovic et al) which described a process other than SCNT.

Hardly a mandate for change and hardly evidence of such a pressing nature as to give such warrant as to be able to dismiss the ethical concerns so lightly.

If cloning as a term received bad press and needed a makeover, what possible chance would there be that the notion of animal/human hybrids could be made palatable for the Australian public? Little or none, it seems. When The Hon. Tony Abbott MP first raised the issue publicly he was accused of scare tactics while at least one SCNT protagonist was in denial that such a recommendation existed. But exist it does:

> Lockhart Recommendation 24:
>
> *In order to reduce the need for human oocytes, transfer of human somatic cell nuclei into animal oocytes should be allowed, under licence, for the creation and use of human embryo clones for research, training and clinical application, including the production of human embryonic stem cells, as long as the activity satisfies all the criteria outlined in the amended Act and these embryos are not implanted into the body of a woman or allowed to develop for more than 14 days.*

The harvesting of human eggs has long been recognized as a difficulty. Hyper-stimulation drugs have been known to produce serious and lasting side effects and even death.

In September 2005, the US-based Council for Responsible Genetics published an article by prominent American feminist and women's health advocate, Judy Norsigian, in their Journal *GeneWatch*[14]. Entitled: *Egg Donation Dangers,* the article covered the known side effects of the commonly used ovum suppression and hyper-stimulation drugs as well as

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[13] The Age. July 25, 2006, "Putting the cart before the stem cell"

[14] See www.gene-watch.org/genewatch/articles/18-5Norsigian.html

giving warning about possible long-term health risks and the lack of study of the subject by the American FDA.

Little wonder that Lockhart should preface Recommendation 24 by the statement, *'In order to reduce the need for human oocytes…'* Yet it is this remedy or circumvention of the egg harvesting problem (of which the health concerns, above, is only one issue) that creates a further disturbing outcome. The creation of human/animal hybrid clones.

Recommendation 24 is clear in its assessment that, regardless of their hybrid nature, these entities would still be human. While possessing the DNA from the somatic cell donor, the entity would also possess the animal DNA found in the mitochondria.

This mixture of DNA would render any ESCs harvested as probably useless for therapeutic outcomes. Even though the majority DNA would be histocompatible, the introduction of non-human DNA could result in unforeseen consequences.[15]

It would seem, therefore, that any legislative outcome from Lockhart will find itself with a dilemma: For the sake of women's health, the harvesting of great numbers of human oocytes should be avoided; yet the alternative is problematic and probably unacceptable to the great majority of Australians.

> Lockhart Recommendation 27:
>
> *Creation of embryos using precursor cells from a human embryo or a human fetus should be permitted, under licence, for research, training and clinical applications, including production of human embryonic stem cells, as long as the research satisfies all the criteria outlined in the amended Act and these embryos are not implanted into the body of a woman or allowed to develop for more than 14 days.*

The creation and harvesting of human precursor (germ) cells from embryos or human fetuses crosses another moral divide. Abortion and ESC harvesting from SCNT or IVF embryos involves the killing of a human life. In the case of harvesting germ cells from aborted fetuses there is a further issue with the integrity of the human corpse. Further, the creation of a human embryo using fetal germ cells would effectively create a human entity whose genetic mother was destroyed before birth.

Summary: The Lockhart Committee was charged with a review of the scientific advances and changes to community attitudes since the passage of the RIHE and PHC Acts in 2002. This submission contends that the evidence presented in their report was insufficient to argue the case for their recommendations. The committee also erred in attempting to judge ethical concerns by weight against other imperatives and effectively ignoring the community sentiment that underpinned the PHC Act circa 2002.

(Concerns arising out of the Lockhart Review dealing with the current status of stem cell research and the changed definition of the human embryo are dealt with in sections 6 & 7 respectively.)

[15] Ref: Comment by Dr. Jim Peacock *The Australian* Sept 14, 2006: "…I think most scientists would say there could be complications…"

6. ESCs vs ASCs: The potential versus the practical

The debate concerning the future applications, current usages and inherent problems of both adult stem cell and embryo stem cell research raged throughout the 2002 debate.

Circa 2002, Do No Harm: The Coalition of Americans for Research Ethics[16], noted on their website something like 25 clinical uses for ASCs. At the time of writing they list 72 applications while their 'scoreboard' for ESCs remains at 'nil'. While this is clearly the use of a gimmick to make a point, the point that ASC applications have continued to develop while ESCs have not, should weigh heavily on the minds of our legislators – if for the sake of research funding if nothing else. If we're going to continue to hold out hope for the sick, we should at least be realistic about the possibilities and where they may be found.

In contrast what we note from the apologists for ESC research is a steady change of language. At the beginning of the 2002 debate we were told that ASCs were difficult to collect and had limited application due to their lack of plasticity and that ESCs, on the other hand, held more potential because of their pluripotency. As the debate continued, we began to hear some in the scientific community say that research should continue in both spheres – that both held great potential.

More recently some scientists and ESC research supporters have begun to acknowledge that the primary focus of ESC research should be drug research and gaining greater understanding about diseases.

In an interview with LifeSiteNews.com[17], Dr. Peter Hollands (PhD Stem cell biology, Cambridge) who had worked as a clinical embryologist at Bourn Hall Clinic said, "embryonic stem cells have yet to be used to treat any form of disease" adding that the real potential for cures exists with ASCs. He went on to say that, "Adult and umbilical cord blood stem cells are readily available, have no objections associated with them and are tried and tested in clinical use. Umbilical cord blood stem cells, for example, have been used over 3000 times for 45 different diseases!"

The word 'potential' is used a great deal in the Lockhart report. Yet, at some point, potential has to be realized. We are told that cures using ESC research are 5 to 10 years away; yet this, again, is only a claim and, given the optimistic fervour with which the scientific community applies itself, we think it is legitimate to wonder whether or not this time line is also a matter of 'potential'. This is not a criticism of scientists *per se*, but merely recognition of the reality that research science is a field built on optimism and the ability to secure funding. Scientists need to be driven by potentialities – it is the role of governments, on the other hand, to maintain objectivity and ethical standards and practice to ensure that ethical boundaries are not crossed and that funding grants support genuine outcomes.

Summary: While researcher scientists continue to develop treatments using Adult Stem Cells, Embryonic Stem Cell therapies have not progressed since 2002 and remain at nil. ASC developments, in the eyes of some qualified commentators, are beginning to cast serious doubt on human cloning and ESC research as a worthwhile and effective use of research funding.

[16] See: www.stemcellresearch.org
[17] www.LifeSiteNews.com Aug 15, 2006 and earlier

7. The status of the embryo

Lockhart Recommendation 28:

The definition of a 'human embryo' in both Acts should be changed to:

'A human embryo is a discrete living entity that has a human genome or an altered human genome and that has arisen from either:

(i) the first mitotic cell division when fertilisation of a human oocyte by a human sperm is complete; or
(ii) any other process that initiates organised development of a biological entity with a human nuclear genome or altered human nuclear genome that has the potential to develop up to, or beyond, 14 days

and has not yet reached eight weeks of development.'

Lockhart's proposed change to the definition of the human embryo, as adopted with a minor change by both Bills tabled in the Senate, is clearly about allowing research that, under the existing legislation, can not be undertaken. The Review's executive summary suggests that this was an 'apparently unintended consequence'[18] of the 2002 legislation.

MPConsulting's advice to the Department of the Prime Minister and Cabinet suggests not only that the parliament was aware that the 2002 legislation created the restrictions in question at that time, but that the restrictions were intended.[19] Their report also said that there appeared to be no significant changes in relation to the definition of the embryo since 2002, noting that the NHMRC Licensing Committee had advised that, "…it had not experienced any difficulties with the legal definition" and that, "from a legal perspective it works well."[20]

This submission questions any change to the definition of the human embryo, particularly in this case as the principle intention appears to be a matter of pragmatism.

In shifting the definition (part a) of when an entity is considered to be a human embryo from the point of fertilization to any later point invites the question: What then is the status of the entity prior to this point in development?

The new entity formed from the fusion of the two gamete cells when the contents of the sperm are released into the ovum forms a single cell human embryo. The later development known as mitosis, when the first cell begins to replicate is simply part of the process of development begun earlier. The single cell entity has a complete human genome which is already organised for further development. The effect of this definition would be to place the early embryo beyond the scope of existing legislation. This is, in effect, an invitation to unregulated (and possibly unreported) experimentation.

The definition in part b covers the creation of the human embryo by SCNT and other processes. The reference to the potential of the entity to develop up to, or beyond the

[18] Lockhart Review Executive summary page XV.

[19] See MPConsulting Report, June 2006. Executive Summary page iv

[20] Ibid.

appearance of the primitive streak creates further problems and may provide the opportunity for an interpretation that would effectively circumvent the 14 day rule.

The formation of the primitive streak is dependent upon the implantation of the embryo in the uterus. If the intention and practical outcome of the creation of a human clone is such that it is never implanted, then the primitive streak cannot appear. It could be said, therefore, that the potential for the development of the primitive streak is simply not there. By this determination, such an embryo may well be completely outside the regulatory framework and the legislation in question.

Summary: We cannot change the essence of an entity by definition. An embryo's is what it is – that is its nature. To make the changes proposed would set a precedent of change that, by denying the nature of a human entity, is contrary to human dignity.

8. The value of the status quo

Necessity is the mother of invention, a saying with its origins in ancient Roman times[21] that, we believe, has a sound and ethical application in the field of stem cell research.

Recent published developments in stem cell science point to the possibility of other, more ethical methods of developing treatments for disease and disease modeling that may render human cloning redundant.

In Australia, the work of Professor Alan Mackay-Sim at Griffith University[22] using adult stem cells is a clear example of practical and ethical applications of an existing science. The work on 'reprogramming' adult stem cells that behave in a similar way to embryonic stem cells reported recently in Cell Magazine[23] (work carried out on mouse cells) is another promising avenue.

Recent claims from the United States that embryo stem cells can be obtained through Preimplantation Genetic Diagnosis (PGD)[24] without destroying the embryo have since been proven false. However, the underlying message about why scientists and stem cell research companies are looking to find ethical alternatives to human cloning and embryo destruction is, in itself, instructive.

Clearly in countries where human cloning is not allowed or where public funding is not available for this purpose some scientists and companies have sought to continue their work by other means. Whether because of ethical considerations or funding restrictions or both, these examples seem to be driven by the need to continue research while attempting to recognise and honour ethical concerns.

We wonder whether these attempts might not have developed as they had without the existing strictures creating the necessity for invention. We therefore suggest that the status quo be viewed not as a restrictive regime that hampers progress, but as a reasoned

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[22] See: www.gu.edu.au/er/development/content_icmt_adultstem.html

[23] **Induction** of Pluripotent Stem Cells from Mouse Embryonic and Adult Fibroblast Cultures by Defined Factors *Cell Magazine* 126: 663-676 www.cell.com

[24] See: *Nature Magazine* www.nature.com/nature/journal/v442/n7105/full/442858b.html

ethical boundary that can provide a catalyst for ethical (and perhaps more promising) development.

Summary: The status quo should not be viewed as a 'head-in-the-sand' approach to stem cell science. Rather, it can provide the necessary impetus for ethical new approaches that may well render human cloning redundant.

9. The Bills

The majority of concerns raised by this submission in respect to both bills under consideration have already been dealt with in earlier sections.

Both bills are directed at implementing the recommendations of the Lockhart Review insofar as those recommendations can be dealt with in Amendment Bills. As such, this submission does not support the passage of either bill.

Summary: The bills in question arise with the intention of implementing recommendations of the Lockhart Review. The review committee was charged with investigating changes in the science and community standards since the passage of the original legislation in 2002. The report by MPConsulting supports our view that Lockhart did not adequately prove that such changes warranted any amendment to existing legislation.

10. Summary comments:

On ethical concerns…

The right to life principle is an inalienable right enjoyed by every member of the human family without distinction. The status of the embryo, being both human and alive, is beyond debate. The consideration of the relative 'value' of the embryo as compared with any outcome whatsoever is not a legitimate question where the end can only be achieved by way of the embryo's destruction. To devalue some human lives in such a way is to devalue all human existence.

On the Prohibition of Human Cloning Act 2002 and changes in terminology…

The Prohibition of Human Cloning Act 2002 banned the act of human cloning and, rightly, made no reference to the supposed distinctions between 'therapeutic' and 'reproductive' cloning. The creation and usage of the term 'therapeutic' and, to a lesser degree 'Somatic Cell Nuclear Transfer' or 'SCNT' appears to be intent upon obfuscating the reality of what is actually involved in human cloning and embryo stem cell extraction.

On public opinion…

Once the ethical issues have been explained, the majority of Australians surveyed reject the idea of human cloning for any purpose.

On the Lockhart Review…

Legislative responses to recommendations of the Lockhart Review

Summary: The Lockhart Committee was charged with a review of the scientific advances and changes to community attitudes since the passage of the RIHE and PHC Acts in 2002. This submission contends that the evidence presented in their report was insufficient to argue the case for their recommendations. The committee also erred in attempting to judge ethical concerns by weight against other imperatives and effectively ignoring the community sentiment that underpinned the PHC Act circa 2002.

On stem cell types…

While researcher scientists continue to develop treatments using Adult Stem Cells, Embryonic Stem Cell therapies have not progressed since 2002 and remain at nil. ASC developments, in the eyes of some qualified commentators, are beginning to cast serious doubt on human cloning and ESC research as a worthwhile and effective use of research funding.

On the status of the embryo…

We cannot change the essence of an entity by definition. An embryo's is what it is – that is its nature. To make the changes proposed would set a precedent of change that, by denying the nature of a human entity, is contrary to human dignity.

On the value of the status quo…

The status quo should not be viewed as a 'head-in-the-sand' approach to stem cell science. Rather, it can provide the necessary impetus for ethical new approaches that may well render human cloning redundant.

Paul Russell

5 October 2006