



AN ASSESSMENT OF THE LOCKHART REVIEW

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CONTENTS

What is the Lockhart Review?	2
What are the Committee recommendations?	2
The definition of an embryo	3
The treatment and use of embryos	3
What language do we use, and what meaning does it have?	4
‘Destructive’ and ‘therapeutic’ research.....	4
‘Spare’ and ‘specially created’.....	4
‘Embryos’ and ‘pre-embryos’	5
What is the definition of an embryo?	6
What is the value of an early embryo?	7
Is destructive research on embryos ethically appropriate?	8
‘Slippery slope’ arguments	9
Summary	10
How do we evaluate the social effect of technology?	10
Defining life technologically	10
Defining life humanly	11
Defining life theologically	12
What should we conclude?	13

SUMMARY

The content and the recommendations of the Lockhart Committee Review are outlined and assessed. The report rightly recognises the benefits of stem cell research, and the Committee is to be commended for resisting the argument that an embryo can be defined as coming into being at some point of development, such as at 14 days or implantation. But the Committee errs in finding that the value of the human embryo can derive from the intention of the researcher rather than from the intrinsic nature of the embryo. Thus the finding of the Committee that it is ethically appropriate to destructively research on both ‘specially created’ and so-called ‘spare’ embryos is inappropriate. And there is a real concern that by defending the essential humanity of the early embryo and yet allowing for destructive research, there is the potential for moves for further destructive research on embryos beyond 14 days of development.

This assessment also includes a much broader analysis of the parameters of the whole notion of the significance of a technological approach to human life. This is not a rejection of the notion of technological development, nor a call for an end to research or progress. But it is the recognition that technology creates a particular view of the world and thus there is a need for a more distinctly theological approach to the issues which are dealt with technologically. While some see technology as either neutral or even a good, which nonetheless needs to be controlled and used responsibly, the reality is that the use of technology inevitably creates a view of the world which can be at odds with a Christian interpretation of human life. This does not necessitate a rejection of technology, but it does require constant reassessment from a biblical, theological point of view. (*Full statement: 7,500 words*)

AN ASSESSMENT OF THE LOCKHART REVIEW

What is the Lockhart Review?

The Lockhart Committee was formed by the Federal Parliament to review the situation of those issues associated with human embryos, stem cell research and cloning in the light of technological development and public debate which has taken place since the 2001 report of the House of Representatives Committee (The Andrews Report) and the subsequent legislation in 2002: the *Prohibition of Human Cloning Act* and the *Research Involving Human Embryos Act*.

- These acts prohibit the creation of various types of embryos including cloned human embryos; embryos with genetic material from more than two people; embryos with genetic modifications which could be inherited; and animal-human embryos.
- They also forbid research on embryos *except* for those embryos which are in ‘excess’ after assisted reproduction techniques *and then only* for the first 14 days and provided that a proper license has been obtained.¹
- Put in another way, the acts *permit* research on embryos which are considered to be ‘spare’ or unsuitable for use in IVF.

The point of the Lockhart Review was to assess whether these regulations should continue, and to address issues of more recent technology, especially techniques which enables research on embryonic stem cells which have been obtained from cloned embryos (via a process known as Somatic Cell Nuclear Transfer [SCNT]). It is therefore a central ethical question as to whether it is appropriate to destroy either ‘excess’ or ‘specially crated’ embryos in order to facilitate research on stem cells.

The report will discussed in the Government party room and some form of it will form the basis for new legislation. The report runs to 256 pages, and there are 1035 submissions which can be read as well. They are listed on the Lockhart Review website www.lockhartreview.com.au/. There are 83 parliamentary and organisational reports listed which are particularly helpful. These include reports from Anglican, Assembly of God, Baptist, Catholic, Lutheran, Presbyterian, Reformed and Uniting Church denominations as well as from various Christian special interest groups.

From out of this process decisions will be made which will affect the future of research; the development of new medical therapies; the conduct of reproductive technology; the disposition of many embryos; and our corporate understanding of the nature of human life.

The complex combination of legal, scientific, moral and theological issues relating to cloning, stem cells and embryo research which are found in the Lockhart Review will, unfortunately, deter many people from engaging with this very important report.

What are the Committee recommendations?

There are 54 recommendations.

- Recommendation 1 is that *this area of research continue to be subject to legislation*. And recommendations 50-54 follow that up with specific recommendations about legislation and licensing.
- Recommendations 2 to 27 deal with *the treatment of embryos*
- Recommendation 28 *defines an embryo*
- Recommendations 29-49 deal with *consent, trade in embryos, licensing and monitoring of approved bodies*

There are important issues in every single one of these, but because some are of more specialised interest, and many of them are consequent on the more central decisions it is probably inevitable that the focus of attention falls on recommendations 28 (the definition of an embryo) and 2-27 (the treatment of embryos).

The definition of an embryo

The definition of an embryo is important as decisions about what research on embryos is appropriate obviously depend on what an embryo is defined to be. That is something which is more difficult to establish in the light of recent technology than it was previously. In summary form, the report defines an embryo according to two criteria:

1. An entity is an embryo if it is formed by the fertilisation of a human egg by a human sperm. This is considered to have taken place at the first cell division, when the maternal and paternal chromosomes have combined in a process known as syngamy approximately 20-22 hours after the sperm begins to penetrate the egg.
2. When other techniques are used which do not involve the usual process of male sperm fertilising female egg an entity is considered to be an embryo if it has the capacity to develop as an embryo up to, or beyond, 14 days.

The merits of these definitions are discussed below. However, this present review reckons them to be acceptable.

The treatment and use of embryos

The report considers the appropriateness of –

- restrictions on embryos used in reproduction,
- research on fertilised oocytes which are ‘apparent embryos’, and
- research on embryos.

Restrictions on embryos used in reproduction

The report recommends that only embryos which are the result of the fertilisation of an egg by sperm (although it could be modified in some ways) can be implanted in a woman.

It is recommended that it continue to be illegal to implant a cloned embryo; an animal embryo; an animal-human hybrid embryo; an embryo formed from the genetic material of more than two people; an embryo which carries genetic alterations which can be inherited by subsequent generations. Nor can a human embryo be implanted in an animal.

Research on fertilised oocytes which are ‘apparent embryos’

The report discusses the situation of oocyte (eggs) which are fertilised and which may begin cell division but which, it is argued, are *not* embryos. These ‘apparent embryos’ are not embryos because although they are cells which are reproducing they do not have the potential to grow to be people. Such entities can be useful in research. The creation of fertilised eggs up to the time of the first cell division is permitted for research purposes and this includes interspecies fertilisation.

Research on embryos

The report allows for continued research on embryos which are ‘in excess’ or are unsuitable for implantation in assisted reproduction techniques up to 14 days of development. It also proposes that research on cloned embryos – such as those formed by a process known as somatic cell nuclear transfer (SCNT), be allowed up to 14 days of development.

In short, probably the most controversial proposal is to allow research which destroys embryos to take place up to 14 days.

What language do we use, and what meaning does it have?

In coming to an understanding of the issues involved there is no possibility of avoiding the very technical nature of the discussion and the many definitions and distinctions which have to be made. It is necessary to come to grips with the differences between, for example, embryonic and adult stem cells; reproductive and therapeutic cloning; somatic and germ cells; chimeras and clones; and gametes and genes. Unfortunately, doing that can be made more difficult than it ought to be by the way moral points are made under the guise of scientific description. This is the same sort of thing that happens in the debate about abortion when a ‘foetus’ for some is ‘an unborn child’ for others.

‘Destructive’ and ‘therapeutic’ research

What, for example, is the difference between ‘destructive experimentation’ on an embryo and ‘therapeutic experimentation’ on an embryo? In one sense, the answer is ‘About twenty years’. That is, when the 1985 Senate report on embryo experimentation² referred to experimentation that killed the embryo it spoke of ‘destructive experimentation’. But the 2005 report refers to effectively the same event as ‘therapeutic cloning’. But the two are essentially the same thing: they are manipulations which involve the death of the embryo. The research is designated as ‘therapy’ because it is aimed at providing a therapy for someone else. Calling it ‘therapeutic’ rather than ‘destructive’ may sound better, but it is still the same thing.

However, while changing the terminology of something does not make it right, nor does it make it wrong. That is an issue that has to be decided on other grounds. But moral clarity cannot easily be achieved if there is linguistic confusion.

Today, the focus is specifically on *cloning* embryos in order to obtain stem cells in order to develop new therapies and so the distinction is usually made between ‘reproductive cloning’ (cloning done with the intention of creating a new, living entity) and ‘therapeutic cloning’ (cloning done with the intention of using the cloned embryo for research into stem cell processes which may have some therapeutic effect on other people). While the distinction can serve some purposes it can also be used to disguise the fact that for the embryos in the different processes there is no developmental difference. *The only difference is that of the intended use of the embryo.* The terminology stands as an example of a technological attitude which defines embryonic life according to its usefulness. All cloning is, by definition, reproductive. A human embryo is the being created in therapeutic cloning and it ought not be morally differentiated solely according to the intention of the ones forming it.

In fact, we have come, very quickly, to the nub of one of the central issues of the report: the value of the human embryo and the question of their use as means to an end.

‘Spare’ and ‘specially created’

Another example of the way that language can influence attitudes relates to the terminology of ‘spare’ embryos (those embryos either currently in storage, or those which may be produced in future, which are no longer needed for the reproductive purposes for which they were formed). These embryos are described as ‘spare’ in distinction to those that might be ‘specially created’ for research and, to some people, research on them seems to be ethically appropriate given that they have simply been left over from attempts at assisted reproduction. Allowing them to die would, it is argued, be a ‘waste’ when compared with the benefits that could be gained through research on them. However, the presuppositions of the situation must be examined. It is wrong to think that this is a case of technology being brought in to make the best of a potentially unfortunate situation – for this overlooks the fact that these embryos have been deliberately produced by reproductive technologies

aimed at allowing clinicians to select the ‘best’ ones for implantation.³ They are the results of both technology and a particular view of the embryo which already allows them to be treated selectively and as means to an end. The distinction between ‘spare’ and ‘specially created’ is disingenuous – not only philosophically because it is a false distinction, but also practically because any competent clinician operating within the parameters of acceptable practice can ensure that there are ‘spare’ embryos for research.

The effect of these observations must be noted carefully.

- On the one hand, neither of these distinctions (between ‘destructive’ and ‘therapeutic’ and between ‘spare’ and ‘created’) in themselves provide a moral justification for making distinctions concerning the moral status or treatment of embryos. Despite attempts to use them in this way they do not provide a basis for conducting destructive research on some embryos and not on others.
- On the other hand, these observations about the misconceived nature of these distinctions do not demonstrate that research on embryos is intrinsically wrong.

Embryos’ and ‘pre-embryos’

What is an embryo? It is an early developmental stage of life. There is widespread agreement that the definition of ‘human embryo’ extends until about eight weeks of development (after which it is a foetus), but the point at which an embryo begins is one that has been the subject of discussion.

An embryo is what you get when an oocyte (human egg) is fertilised with sperm. But with the introduction of technology a precise definition became a more difficult question. Artificial processes do not necessarily utilise the usual process of male sperm fertilizing female oocyte. A number of techniques for creating an embryo already exist and there may be more in future. Defining an embryo solely in terms of a female egg fertilised by male sperm is not sufficient.

There have been a number of attempts to restrict the definition of an embryo in such a way that certain entities are exempt from those protections which normally apply to the treatment of embryos/human beings. As it was pointed out in one submission to the Review, ‘If it (an embryo cloned via SCNT) were not defined as an embryo, there would not be a problem with creating one’.⁴ [Nor, we might add in the same spirit, would there be any problem with the logic involved in saying that if logic were not defined in rational terms.] It was also noted that it would be better for research purposes if the ambiguity concerning embryos created for specifically for research and those created for reproduction was resolved by this definition⁵ – rather than by some other moral argument.

There have been proposals to restrict the term ‘embryo’ according to -

- *the period of development.* There has been disagreement about whether it commences at fertilization or later, at around 14 days. This is connected with the debate about whether there is such a thing as a ‘pre-embryo’ (see below).
- *the artificial nature of formation.* Some have argued that those embryos formed by artificial means are not necessarily to be considered embryos.
- *the origin of the genetic material.* That is, not everyone is convinced that a clone produced by SCNT (in which the genetic material comes from a somatic [non-reproductive body] cell) ought to be defined as an embryo.
- *the purpose for which it is being used.* Some have distinguished between embryo clones produced for reproduction - in which case they are embryos - while others produced for research - in which case they are not.
- *the viability of the embryo.* That is, an artificially embryo which is in a position (e.g. *in vitro*) where it cannot develop.

- *the potential for development.* This is not the same as the viability issue (which is a practical matter of having the right situation). This is a matter of whether the activated oocyte has the intrinsic potential to proceed to birth as a person.

As indicated above there has also been an attempt to modify the definition of an embryo by introducing the term ‘pre-embryo’ for the earliest stage of development. Starting in the 1970s some embryologists referred to the human embryo in its first week or two of development as a ‘pre-embryo’. Implicit in this is the notion that an early human embryo becomes a human being only after 14 days or implantation in the womb. Obviously, if it is a ‘pre-embryo’ then it is not at that stage an embryo and thus almost certainly not deserving of the respect to be shown to a human embryo. However, the distinction is neither scientifically nor philosophically valid and the Lockhart Report has rejected its use. The earliest human embryo is a human being. It will not become some other kind of animal, it is human. Any such demarcation of ‘before’ and ‘after’ in embryonic development is quite arbitrary and without scientific foundation. All stages and developments are equally important.

What is the definition of an embryo?

It was clear to the Review Committee that there was no justification for restricting the term ‘embryo’ in most of the ways suggested and as a result, the working party recommended a definition that established two criteria for defining human embryos.

- The first refers to embryos formed by fertilisation of a human oocyte by a human sperm and defines them as being embryos from the time of the first cell division. That is, approximately 20 hours after the sperm enters the oocyte, the maternal and paternal chromosomes combine in a process known as syngamy. This is followed almost immediately by the first cell division which is the only way that it can be confirmed that syngamy has occurred.

The status of the embryo is not affected by any potential (or lack of potential) or by the intention which brought the embryo to be, it is enough that the embryo exists and was formed by fertilization for it to be treated as an embryo.

The question of the time of fertilization is resolved by noting that the mere association of the sperm and oocyte is not itself sufficient to constitute an embryo. While fertilisation *begins* when sperm contacts oocyte it is not achieved until about 20-22 hours later.

Because of technological developments it was necessary to introduce a second definition in order to account for those artificial processes which modify the usual process of male sperm fertilizing female oocyte.

- The second definition refers to entities formed by any other process that have the potential to develop as an embryo up to, or beyond, the stage at which the primitive streak appears. That is, around 14 days, and it refers to a thickening on the surface of an embryo that is the first clearly recognisable sign of the developing organism itself (that is, the organism as distinct from the placenta and other extra-embryonic tissues which are formed out of the same initial cells).

This definition is necessary to distinguish embryos from ‘activated cell derivatives’ that do not have the potential to develop into a whole organism. That is, it is possible to activate an oocyte so that it multiplies – as it does in normal fertilization - but these cells do not necessarily have the intrinsic ability to ever become a person, or, often, even to develop to the point of the primitive streak.

It is important to note that this 'lack of potential' is not simply a 'viability' problem, that is, a relative lack of potential caused, for example, by unfavorable circumstances, but an *intrinsic* lack of ability to become a person. This is as much a philosophical definition as a technical one. The growing entity may contain human cells but without the ability to organize to become a person it should not be referred to as a human embryo.

The Caroline Chisholm Centre for Health Ethics, for example, thought that the distinction between totipotency and pluripotency was a useful one to underpin the definition of a human embryo in distinction from other growing entities.⁶ Pluripotency indicates that a range of human cells can develop but totipotency indicates that the cells have all that is required of a human being. Consequently, from a philosophical viewpoint, a human embryo may be defined as a totipotent cell or a group of cells or a multicellular organism, which due to its genome, has inherent, actual potential to continue organised human development through to maturity.

In short, these definitions are appropriate and satisfactorily define embryos, in contradistinction to a number of other views which would have defined away substantial aspects of human embryonic life.

What is the value of an early embryo?

The definition of something as a human embryo does not immediately indicate precisely how that embryo should be valued or how it should be treated. Yet such a definition does have a powerful influence on this. When dealing with a human embryo one is undeniably dealing with a human entity or a human being. It is a stage in human development and it is what all people once were. From the perspective of an individual looking back over their life history, each and every stage of embryonic life is as important as any other. If the embryo which was 'me' at a previous stage of my life had died, that would be as significant for me today as the death of the 'me' of yesterday would be! Death at either point would be the death of my life as a human entity. Embryonic life is as essential a part of human life as childhood, infancy or adolescence.

Yet even this still does not definitively assert that each of these stages of human life is to be valued in the same way. Is it morally legitimate to treat these stages differently? For many the answer is clearly - almost by definition - that it is not right to treat them differently. Participation in human life is sufficient qualification to be exempted from being treated as the means to an end rather than as an end. But for others the very earliest human embryo does not have to be valued or treated in the same way as, say, a child. Consequently, debate still focuses on the treatment of embryos up to the 14th day of development. Those in favour of destructive embryonic research up to that stage may operate argue on the basis of either of two arguments (which can find agreement in terms of treatment while differing markedly as to the reason for this).

- (a) The first approach makes a clear distinction between the value of embryonic life pre- and post implantation. It allows for experimentation up to 14 days because the embryo is not really a human entity or a human person or a human being in any meaningful sense. Thus embryo experimentation is not taking human life and humanity is not being weighed in a utilitarian balance between the benefits of research and the cost of human life. The cost side of the equation relates only to the loss of cellular, pre-human life.

However, this distinction, based on differential value before and after the fourteenth day, tends to struggle, not only because, as the Lockhart Report makes clear, there is no scientific validity in saying that the embryo becomes a new entity at implantation (something this view usually relies on) but also more generally because scientific judgments themselves cannot import ethical values into the situation. In the light of our knowledge of the embryo it is not a sustainable view.

- The second approach assumes the same (or very similar) value for pre- and post-implantation embryos and yet treats them differently. In other situations one can value two human persons in exactly the same way and yet treat them differently. One person, for example, may be free to live as they choose while another, as the result of a crime, is imprisoned for life. A child may be treated for a life-threatening illness while an aged person close to death may not be. These are not distinctions based on value but on context. In the case of embryonic research the embryo is treated as having clear moral value, though not the same as a child or an adult, but the benefits which embryonic research brings and the situation the embryo is in (as unwanted for reproduction – whether an embryo in ‘excess’ or as ‘specially created’), means that the cost of the deliberate loss of human life is justified.

The issue here is that entities which, it is accepted, are human lives with significant moral value have been weighed in the balance. This is a significant ethical step which places embryos in a position from which humans are usually exempt – having their lives weighed in a utilitarian balance. For example, even prisoners condemned to death are not destructively experimented upon (although there is no doubt that could be scientifically useful) as a sign of the fact that their death is an unfortunate matter of regret and not to be seen as part of a utilitarian cost-benefit calculation involving human life. An acceptance of the human nature of embryos ought to remove them from utilitarian calculation.

In short, neither argument for destructive research on embryos up to 14 days is appropriate. This, of course, has some implications for other people suffering from various disorders which might be rectified by research into embryonic stem cells. A decision not to engage in this form of research does not, however, eliminate all possibility of research or mean that one does not care for those suffering. While embryonic stem cell research is ethically problematic the same is not the case for other forms of stem cell research. Altered Nuclear Transfer-Oocyte Assisted Reprogramming (ANT-OAR), for instance, is a process which converts an adult cell into an embryonic stem cell without creating an embryo. It would be better to focus on this type of research which has none of the ethical difficulties associated with embryo research. In fact, there are those who argue that adult stem cell research is scientifically preferable to embryonic stem cell research. Certainly, at the moment, adult stem cell research has produced many more benefits than embryonic research which has produced *no* actual therapies and has been methodologically criticised.⁷ The Lockhart Report, however, suggests that ‘the potentiality of adult stem cells, in terms of the number of cell types that can be generated, is still unclear and certainly less than for embryonic stem cells.’ In any case, the pragmatic argument (‘adult stem cell research is showing more results than embryonic research’) is not a particularly effective one and is reversible, if, for instance, developments emerge which strengthen the value of embryonic stem cell research. If one argues against embryonic research on the basis of pragmatics one has to be prepared to be out-argued at a later stage by a change of circumstances. It is better to operate on the more principled approach. The case made here is that destructive research on embryos is ethically inappropriate irrespective of the pragmatic results brought about by experimentation.

Is destructive research on embryos ethically appropriate?

The Lockhart Review Committee accepted the argument that destructive research on embryos up to 14 days old (both ‘spare’ and ‘specially created’) is ethically appropriate. It did so by noting that the production and destruction of excess ART embryos, is currently permitted by legislation and ‘widely accepted by society’ and argued that to permit this and not to go on to approve the production and destruction of bioengineered embryos, including those created by nuclear transfer, would be inconsistent.

The benefits of research were seen to outweigh the costs, a utilitarian view based clearly upon the view that human life was being lost in the process:

The Committee agreed that human embryo clones are human embryos and that, given the right environment for development, could develop into a human being. Furthermore, if such an embryo were implanted into the body of a woman to achieve a pregnancy, this entity would certainly have the same status as any other human embryo, and were this pregnancy to result in a live birth, that child would enjoy the same rights and protection as any other child.

In short the embryo implanted is the same as the embryo destroyed but this is acceptable because *the ultimate value of the embryo being destroyed does not derive from its intrinsic nature but is something attributed to the embryo by the researchers – those forming the entity:*

..a human embryo clone created to extract stem cells is not intended to be implanted, but is created as a cellular extension of the original subject... the moral significance of cloned embryos that are not implanted is linked more closely to their potential for research developments, including the development of treatments for serious medical conditions, than to their potential as a human life.⁸

In this we have the radical extension of the idea which, for some, controls the abortion debate: that the value of an unborn foetus/child is determined by what the woman/mother reckons it to be. This view is only one element of a complex debate and it is by no means universally accepted. But the Lockhart Report accepts it and radically extends it so that the value of the embryo is entirely determined by the intention of the researchers. If they intend to form the embryo to obtain stem cells then that is its precise value, and nothing more.

'Slippery slope' arguments

The Committee considered the 'slippery slope' argument that allowing cloning to extract stem cells would inevitably lead to its use for reproductive purposes but concluded that a ban on allowing the development of human embryos beyond 14 days would prevent this. However, while arguing that slippery slope arguments do not apply to embryonic research where there is controlling legislation the Review conclusions are actually an example of exactly how they do apply. In 2002, at the time of the development of the *Research Involving Human Embryos Act* concern was expressed that approval for experimentation on 'surplus' embryos was part of a 'slippery slope' leading to experimentation on embryos specifically created for that purpose. There was significant resistance at that time to the idea of creating embryos specifically for research but it was felt that legislation which specifically restricted research to 'surplus' embryos would prevent this. But the Lockhart Review Committee now notes that the production and destruction of cloned embryos is 'not dissimilar to the production and destruction of excess ART embryos, which is permitted by the legislation'.⁹ Thus it argues that a precedent had been set and that to permit one but not the other would be inconsistent. A dangerous 'slippery slope' has become a justifiable precedent.¹⁰

One has to ask what the next step in this process of legitimation will be. In the present situation a lot turns upon the issue of allowing research up to 14 days. The question is whether research will be sought on embryos which have gone past 14 days. If one accepts the principle that the human entity can be weighed in the balance then one has clearly established a principle (or 'stepped onto the slippery slope') of operation. And although it might appear, at first glance that the committee has defended the status and the value of the embryo by clearly establishing its human nature from conception rather than from 14 days, it has potentially done significant (albeit unintended) damage to any argument intended to protect embryos from destructive research beyond 14 days.

If the Review had allowed for research on embryos up to 14 days on the basis that until that stage it did not deserve to be described as an embryo (and was, perhaps, best described as a pre-embryo) this would imply a completely different value to that effectively pre-human entity than to the implanted,

clearly human embryo at 14 days and beyond. An argument for research beyond 14 days would then have to deal with the fact that the existing research was done on an pre-embryonic entity considered to be of minimal value while research on a post 14 day embryo would constitute research on a human entity of much greater value. *But by defending the essential humanity of the early embryo and yet allowing for destructive research the committee has clearly approved the principle of weighing the specifically human embryo in the balance.* Having accepted that the lives of human embryos are expendable for research, one is almost obliged by one's own principles to extend the experimental processes if there is the likelihood of even greater benefits from research on later term embryos. This view, that the greater benefits justify research on post-14 day embryos, is certainly the stated view of some significant advocates of embryonic experimentation, including Dr Alan Trounson, who has previously argued that what one can learn from embryos at 2 days is not necessarily as potentially beneficial to humanity as what one can learn at 2 weeks or 2 months, and that he would be prepared to argue that the 14 day limitation is arbitrary. The potential for other cures would, he argues, constitute a case for research on more mature embryos.¹¹

Summary

There are three primary points to be made in summarising the situation here described.

- The first is that *the Lockhart Committee is to be commended for resisting the argument that an embryo can be defined as coming into being at some point of development, such as at 14 days or implantation.* They correctly note the arbitrary nature of this claim and correctly understand the human nature of the earliest embryo.
- The second is that *the Lockhart Committee has erred in finding that the value of the human embryo can derive from the intention of the researcher rather than from the intrinsic nature of the embryo.* The re-valuing of the human embryo as 'a cellular extension of the original subject' in order to allow for a utilitarian justification of destructive research is ethically inappropriate. The regime of experimentation that is thus allowed is well removed from those situations where embryos may be lost in the process of artificial reproduction, in a manner analogous to the losses in the natural process. *Thus the finding of the Lockhart Committee that it is ethically appropriate to destructively research on both 'specially created' and so-called 'spare' embryos is inappropriate.*
- The third point is that by defending the essential humanity of the early embryo (rather than accepting a re-definition of early embryos as not being human embryos) and yet allowing for destructive research, *the Lockhart committee has approved an ethical principle has the potential for further destructive research on embryos beyond 14 days of development.*

How do we evaluate the social effect of technology?

As well as considering the specific details relating to the appropriateness of embryonic research on individual pre-implantation embryos it is also necessary to consider much broader questions of the effect that a technological approach to life has on broad scale social values.

Defining life technologically

People are used to being confronted with difficult issues brought about by technological development. Surprise and resistance to what is new is often quickly replaced by acceptance and appreciation of the new technology. But there is evidence that there are some technological developments which challenge fundamental existential convictions about the structure of the world and the nature of humanity which are less easily accepted. One thinks of those novel technological developments relating to aspects of genetic engineering as well as embryonic research. Some issues challenge us more deeply than others and in such cases increased understanding can actually lead to greater concern and resistance, rather than less.¹² Consequently, the issue is not so much about the speed of development or the need for understanding, and it is not a simple conflict between 'innovators'/'early adopters' and 'laggards'/'late majority'. The question to be considered is not so much about the propriety of a restriction on technological development as about the way a

technique, a process, a technological mind-set affects our psyche, our soul, our society and our values.

An important issue, therefore, is what we are doing to ourselves in these processes and in these decisions. A technological way of thinking has a profound effect upon society. But it is not necessary to fall into an anti-technological position to recognize the dangers of becoming reliant upon technique to make life better and more secure and satisfying. There is no need to repudiate the benefits of technological development while making the point that the very same technologies that bring physical life and health can create an unhealthy mind-set. 'Even though we may sincerely 'believe in God', this culture of technology seduces us into tacitly putting our real trust in human ingenuity and mastery of nature.'¹³

When the technological approach becomes dominant it affects the language which is used – an issue already noted above – but the gradual process (perhaps the *real* 'slippery slope') of becoming immersed in the terminology and the technological process can blind one to the real movement of thought that is taking place. Neither technology nor language is neutral. One can begin with an exploration of the language of technological processes (SCNT, ART and so forth) and become immune to the effect. Consequently, at one level it is perfectly logical to find in the Lockhart Report a section on 'the import, export and trade of embryos, gametes and stem cells'. If one has become immersed in the production of artificial, cloned embryos for research then it is only 'natural' that there will be a trade in embryos between research organisations at a global level. It is possible to suppress the initial disquiet which comes from reading about 'trade in embryos' if one rationally reflects on the 'logic' of the movement from accepting a technology as appropriate, to the ultimate implications of necessary accompaniments such as a 'trade' in human embryos. At the same time, in reflecting on this, one can be fundamentally disconcerted about the place to which the technology has led us.

The extent to which a technological way of thinking affects one's judgment can perhaps be seen most clearly in the language of the Lockhart Report concerning embryos created specifically for research. As we have seen above, the Review Committee allows the value of such an embryo to be entirely determined by the intention of the researchers – rather than by any intrinsic status. If researchers intend to form an embryo to obtain stem cells then its precise value is as a source of stem cells, and nothing more. In arguing this the language changes dramatically: 'a human embryo clone created to extract stem cells is not intended to be implanted, but is created as *a cellular extension of the original subject*'.¹⁴ In the space of a dozen words a human embryo, which the report concedes, could become a foetus, a child and an adult, becomes nothing more than 'a cellular extension of the original subject'. This brutal honesty marks a shift to a completely different mode of discourse. It becomes very clear that the discussion is framed in such a way as to exclude theological significance. The processes involved in immersing oneself in the report mirrors the life of immersion into a technologically orientated society. It means participating in a structure and language which defines life, meaning and humanity in terms of research and scientific progress for the sake of physical enhancement – and, of course, involving the commodification of life and commercial trade in human embryos.

Defining life humanly

One group that has discerned the fundamental issues are those thinking and observing specifically from the point of view of those with disabilities, a perspective which seems to provide a vision of humanity that does not assume that technology is the fundamental answer to life, or even to disabilities. A technological approach to finding therapies is one part of our society's 'appalling representation of disability' and an example of the way images of disability as 'tragedy and even catastrophe' are used to promote particular forms of technology. The claim is that 'for too long now Australians with disability have been portrayed in terms of medical deficit requiring a technical fix and a charitable response.' Human life, with or without disability, can be lived with integrity and

while technology may be an answer to a disorder, it should not be assumed that life can be lived fully only with this technological answer. Technology is put firmly in its place. It is a good, but it is not life. This is not being ungrateful or disdainful of the work of those scientists seeking for therapies and cures, but those with disabilities often find the greater issue than being cured is being treated humanly, and not being viewed as less than fully human because of a disability. Humanity is not measured by physical perfection.

Human beings cannot be adequately defined only in terms of genetic structure, and embryos cannot be understood without reference to their relationship to God. And yet the attempt to do just that is the inevitable result of a dialogue framed by technological processes and terminology. It is inevitable in a report of this nature, but it does not mean that one has to participate entirely or only on those terms. Christians are shaped by their relationship with God in Jesus Christ and no aspect of life, humanity, or the world is adequately defined without reference to God and without being grounded in Jesus Christ. Is it not possible to speak of 'procreation' rather than 'reproduction'? Is it possible to avoid notions of 'pre-embryos' and the assumptions behind 'spare' or 'excess'? Can we speak of 'person' instead of 'human', 'gift' rather than 'trade', 'image of God' rather than 'genetic constitution' and 'life' rather than 'commodity'? And if not 'unborn child' or 'human being' or 'human entity' then at least let us speak of embryos rather than 'cellular extensions of the original subject'.

Defining life theologically

Humanity is made in the 'image of God'¹⁵ and before God the embryo is not merely a collection of cells or a genetic entity. It exists in relationship with God. Some emphasise this value by speaking of the embryo as a potential person, pointing forward to its later life. But this lacks substance. If it has the potential to be a person then it is, by definition, not yet a person. Is it a 'pre-person'? It is better to speak about the embryo being a person with potential. While recognising that this will not be acceptable to all it is nonetheless an attempt to redress the balance and to point beyond the embryo as a conglomerate of cells useful for research, to the nature of the human entity as an integrated being of body and soul. In the complex being that we call human, we can get rid of neither the materiality of the body, nor of the relational aspects of personality which is expressed in the objectivity of the traditional language of the soul. It is the concept of the soul which provides the essential continuity for our personality. It is the objective basis of our personhood. To speak about the soul is to speak about that which provides continuity of who we are. Personhood is not that which is achieved by relationship with other people. It is an essential attribute of all humanity, even though for an embryo it may not have developed into what we recognise as 'personality' it is 'personhood' in the sense of that quality or attribute which constitutes the fundamental identity of every human entity. On this view the status 'person' if not the full exercise of personality, is present from conception and forms an essential aspect of humanity.

To define embryos purely from a scientific point of view produces an impoverished view of humanity.¹⁶ There is no human nature, no understanding of humanity apart from the birth, life, death, and resurrection of one human in particular and so we must go deeper into that true humanity in order to find the definitively human. In so doing we challenge the assumption that technology is ethically neutral for a technological approach intrinsically affects the spiritual life and tempts us to trust in technology. Being aware of this does not mean being Luddite or opposed to all technology, but it does mean being aware and refusing to be taken in by purely technological interpretations of life.

This questioning should not be interpreted as primarily an anti-technological statement, but much more as a theological question. The issue is not so much the presence of a dangerous technology – as though scientists were to blame for these ethical dilemmas – but the problem of the absence of an even partially agreed philosophical or theological framework on which society can adequately consider the implications of these new developments. This is more the result of a failure of theology

to captivate the minds of people, and the failure of the church to model a way of life that is a genuine alternative to the technique-ism so powerfully presented in modern society.

What should we conclude?

The Lockhart report has essentially been assessed at two levels. *The first being the level of the individual embryo.* On the positive side there has been a recognition of the benefits of stem cell research, and the Lockhart Committee is to be commended for resisting the argument that an embryo can be defined as coming into being at some point of development, such as at 14 days or implantation. But the Committee erred in finding that the value of the human embryo can derive from the intention of the researcher rather than from the intrinsic nature of the embryo. Thus the finding of the Lockhart Committee that it is ethically appropriate to destructively research on both 'specially created' and so-called 'spare' embryos is inappropriate. And there is a real concern that by defending the essential humanity of the early embryo and yet allowing for destructive research, there is the potential for moves for further destructive research on embryos beyond 14 days of development.

The second level of critique is *a much broader analysis of the parameters of the whole notion of the significance of a technological approach to human life.* This is not a rejection of the notion of technological development, nor a call for an end to research or progress. But it is the recognition that technology creates a particular view of the world and thus there is a need for a more distinctly theological approach to the issues which are dealt with technologically. While some see technology as either neutral or even a good, which nonetheless needs to be controlled and used responsibly, the reality is that the use of technology inevitably creates a view of the world which can be at odds with a Christian interpretation of human life. This does not necessitate a rejection of technology, but it does require constant reassessment from a biblical, theological point of view.

INFORMATION ABOUT THE EVANGELICAL ALLIANCE

The Australian Evangelical Alliance Inc. (see www.ea.org.au) is a national fellowship of individuals, churches and organisations. Its National Director is Tom Slater. Its aim is to be a catalyst for Christian unity, cooperation and mission, and it has been operating in Australia since 1959. AEA is affiliated with the World Evangelical Alliance (see www.worldevangelical.org), an international fellowship embracing more than 150 million Christians in 110 countries. In addition to being a link for around 350 Australian Christian organisations and a number of individual members the Australian Evangelical Alliance family of ministries includes -

- **Christian Management Australia** - CMA is a national, interdenominational membership association providing resources, training and encouragement for Christian churches and ministries in areas of management, governance, finances, staffing (see www.cma.au.com).
- **Missions Interlink** – a network of mission agencies and related organisations enabling them to act nationally in promoting cross-cultural mission, in sharing resources, and in planning joint initiatives.
- **Religious Liberty** - The Religious Liberty Commission is the Australian arm of the World Evangelical Alliance's RLC, which serves as a co-ordinating and networking team within the international advocacy community, on behalf of Christians persecuted for their faith.

- **Theology and Public Policy** - The purpose of the Theological Commission is to identify those issues that the church today must address and to apply to them the insights of Scripture and evangelical theology.
- **Insurance** - AEA provides members with a range of insurance products.
- **TEAR Australia** – an aid and development agency. TEAR supports some one hundred projects, through sixty-five partner organisations in twenty-six countries (see www.tear.org.au)

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¹ Amongst other things these acts prohibit creating a cloned human embryo; a human embryo by a process other than by the fertilisation of a human egg by a human sperm; a human embryo outside the body of a woman for any purpose apart from attempting to achieve a pregnancy; a human embryo with genetic material from more than two people; a genetically modified human embryo in which the change could be inherited by the descendants of the embryo; a hybrid animal-human embryo. They also forbid developing a human embryo outside the body of a woman for more than 14 days; research use of a human embryo that is not an excess ART embryo except to achieve a pregnancy. But it allows research use of an excess ART embryo if authorised by a license from the committee authorized to license such activities

² The Senate Select Committee, *Human Embryo Experimentation Bill* (1985).

³ Ross Carter and Rosalie Hudson, *Submission to the Legislative Review Committee*, (LRC486).

⁴ *The Report of the Legislative Review Committee* (The Lockhart Report) December, 2005 p. 97.

⁵ See *Stem Cell Sciences Ltd (Submission LRC318)*

⁶ The Caroline Chisholm Centre for Health Ethics *Submission to the Legislative Review Committee*, (LRC39).

⁷ http://dlibrary.acu.edu.au/research/theology/ejournal/aejt_5/Martin.htm

⁸ *Lockhart Report*, 170.

⁹ *Lockhart Report*, 170.

¹⁰ In *Ethics, Experiments and Embryos: Christian observations on the embryonic stem cell debate* (2002) I wrote: 'Slippery slope arguments are frequently unjustified and little more than (perhaps unintentional) scare-mongering... The question of the acceptability of 'slippery-slope' arguments hinges on whether there is any logical connection between the events under discussion. If a change in one situation establishes a principle which, when appropriately applied elsewhere would specifically justify a change in the second situation then one may have grounds for concern.' I then proceeded to argue that in the situation at that time that approval for experimentation on 'surplus' embryos was part of a 'slippery slope' leading to experimentation on embryos specifically created for that purpose.'

¹¹ See for example, the view of Dr Alan Trounson in evidence to the Senate Select Committee, *Human Embryo Experimentation*, Section 3.16.

¹² Celia Deane-Drummond et al, "Genetically Modified Theology: The Religious Dimensions of Public Concern about Agricultural Biotechnology", in *Studies in Christian Ethics* (Vol. 14, No 2) 23-41.

¹³ Ian Barns, 'Living Christianly in a World of Technology', *Zadok Paper* (2006) 2.

¹⁴ *Lockhart Report*, 170 (my italics).

¹⁵ Genesis 1:26; 5:2; 9:6

¹⁶ Ross Carter and Rosalie Hudson, *Submission to the Legislative Review Committee*, (LRC486) 2.