

**STATUTES AMENDMENT (PROHIBITION OF HUMAN CLONING FOR  
REPRODUCTION AND REGULATION OF RESEARCH INVOLVING  
HUMAN EMBRYOS) BILL**

**11 November 2008**

**The Hon. D.G.E. HOOD:** I rise to state the Family First position on this bill, and at the outset I indicate that my colleague the Hon. Mr Brokenshire will also make a contribution, probably in the next sitting week. In many ways this legislation is completely unnecessary. Today we are being asked to consider this legislation, which is not only unnecessary but also ethically problematic. I will make a few initial points, which I will attempt to address during my brief contribution today.

This bill was introduced prior to scientific developments, which in my view now render it completely unnecessary. Despite those developments, which of course were the discovery of the iPS cells in November last year, we still have a situation where we are forced to debate this bill. That is the first issue I will cover in my contribution.

The second one is to alert the chamber, for those who are not aware, that Western Australia has recently refused to pass a very similar bill to this one because, in short, that state came to the conclusion that the technology and therefore the presumption behind the bill is now obsolete. Thirdly, I will make mention of the fact that Professor Sir Ian Wilmut, famous for cloning Dolly the sheep, has abandoned this form of research in favour of the reprogramming of skin cells, which accomplishes the same thing that is attempted to allow for in this bill.

There we have the founder of this cloning science, Professor Sir Ian Wilmut, who cloned Dolly the sheep, now moving on from this type of cloning to focus more on what he sees as the newer more promising arm of science, namely, the iPS technology. The fourth aspect that is very important and deserves mention in this discussion is that the new so-called induced pluripotent stem

cell technology, to which I just alluded, is producing stem cells in large quantities, while the old cloning technology, with which this bill deals and is being debated today, has yet to produce a single stem cell from a cloned human embryo in the whole world.

To paraphrase and repeat that, the new technology (iPS) is producing useable stem cells that are being used in the preparation of creating treatments for serious disease states which, of course, is the whole point of the iPS technology. However, the cloning technology, which we are debating here today, has never produced a single useable stem cell in all the time that it has been researched.

What we are debating today is: should we continue down a path of using a technology that has, so far, proved to be totally unhelpful, if you like—that is, it has never produced a single stem cell from a cloned human embryo—or do we have the courage to do what they did in the Western Australian parliament and say, 'That technology is no longer necessary'? Not only is it unnecessary and redundant, it is also regarded as ethically contentious, to say the very least, by many people—and not just people who have a religious faith. I have been approached by many people who claim not to have a religious faith but who do have some strong concerns about the ethical nature of the bill before us today.

In summarising my introduction, that is why I say this bill is both ethically questionable and obsolete at the same time. This bill permits the cloning and destruction of human embryos solely for research purposes. It also allows the mixing of human and animal genetic material to create an embryo. That is a significant step in its own right. Back in 2003 this parliament voted to outlaw, if you like, or to ban, the mixing of hybrid embryos—the mixing of animal and human embryos. The parliament voted resoundingly to defeat that bill in 2003. This bill, if passed—so as to be clear and to place on the record—will allow the mixing of human sperm with animal embryos for the creation of what is called a hybrid embryo—a mixture of a person and an animal in one embryo.

Why on earth would we want to do that? If we really take time to think about that, it is a repugnant thought to most of us. Very few people would see it as any sort of advance whatsoever. Let me be clear: this bill has little to do with embryonic stem cell research per se. It is already allowed under legislation in South Australia.

One of the things I found somewhat disturbing in my discussion with others about this bill is that there appears to be some level of misunderstanding which is that, in passing this bill, we are not, as a parliament, allowing or preventing embryonic stem cell research as such. Many forms of embryonic stem cell research are already legal in South Australia. The defeating of this bill—that is, voting against this bill—will not stop the current forms of embryonic stem cell research that already occur in South Australia on a daily basis.

For example, if a couple go through IVF treatment and they deem, at some point, that they no longer wish to have any more children—and let us say they have been fortunate and had two children through the IVF process and they have four remaining embryos and they choose not to use them because they believe two children is the right number for their family—then their remaining embryos, under law in South Australia at the moment, can be used for research purposes so long as the couple agree.

Embryonic stem cell research is alive and well in South Australia—not that I agree with it; I do not—but that is the state of law in South Australia. I want to make that clear to other members when they are considering their position on this very important issue. Voting against and defeating this bill will not stop embryonic stem cell research in South Australia.

I do not like any sort of embryonic stem cell research but, as I said, this bill will neither ban it nor allow it. This bill is solely about—and this is the important point—extending research into new and unknown realms which allow for the cloning of embryos; that is, making a copy, if you like, of embryos which are destined to be destroyed, and the mixing of human and animal genetic material.

In a nutshell, this bill allows the creation (or cloning) of embryos specifically for the purpose of destroying them—they will be subject to research, and they will then be destroyed. The most repugnant aspect of this bill is that, all of a sudden, there will be the capacity for the combination of human sperm and animal embryos.

Family First strongly opposes this bill, as we have strongly opposed previous measures to allow human embryonic stem cell research. On 26 September, I presented a petition to this place, signed by 1,993 residents of South Australia who are opposed to this bill. I remind members that many people across South Australia, whether or not they are people of faith, although people of faith have a particular interest in this legislation, are concerned about the prospect of this bill being passed. I reiterate that it is not just church people or people of religious faith who object to this legislation.

I have been approached by dozens of people who claim to be of no religious faith, but they have concerns, particularly about the prospect of the combination of a hybrid embryo (that is, the creation of an embryo with genetic material from a human being and genetic material from an animal), and that is what this bill will enable to be done.

Organisations that have been leading the fight against this bill, such as FamilyVoice Australia, Medicine with Morality, and Australians for Ethical Stem Cell Research, speak for thousands of people deeply concerned about this bill. I for one do not welcome human/animal hybrid embryos or the creation of human embryos simply for the purpose of destroying them.

I will explain in simple terms how this technology works. I have consulted some learned people, and I believe this is a very simple and good summary of the basic science. To the best of my understanding, in cloning the nucleus is removed from an egg cell and a nucleus from another part of the body (that is, a somatic cell) is inserted. To trick the egg cell into believing that it has been properly fertilised, it is then 'zapped' with electricity and becomes a zygote (that is, a new individual), with the potential, if implanted in a womb, to develop and be born, just like Dolly the sheep.

A cloned human embryo, like a human embryo produced in a glass dish by IVF, is fully a human being, in my view. I say that because, if that embryo were to be implanted in a womb, it would develop into a human being who would live and breath and do all of the things that a baby would do. Similarly (and this is a horrifying thought for many people), if a hybrid embryo (that is, a combination of human and animal embryos) were to be implanted in a womb, it might develop into whatever—I am not sure what name we would give it; we could call it an animal, or half human/half animal, or whatever it is. If such an embryo were implanted in a womb (and an animal's womb could be used), it would be born and have life.

Returning to the science, this kind of cloning is called somatic cell nuclear transfer (or SCNT). One difficulty is that only about 95 per cent of a cell's DNA is within the nucleus proper, within the nucleus itself. In the fluid surrounding the nucleus, there are small particles called mitochondria, which also contain DNA, up to 5 per cent of the total content.

Suppose a person wants to be cloned in this way. Imagine that one of the cells in his or her body is inserted into a woman's donated egg cell, and then it is 'zapped' to make an embryo clone of the patient. The embryo's DNA will be only 95 per cent the same as the patient. The embryo's mitochondria, with 5 per cent of the cell's total DNA, will be the same as the woman egg donor. Any stem cells produced from the cloned embryo would be a close match—and this is very important—but they would not be a perfect match to the patient. So, that is the science of embryonic stem cell research.

In stark contrast, adult stem cells are an exact 100 per cent match, because they come entirely from the patient, that is, the nucleus and the mitochondria. Further, there are no rejection risks of any kind. The combination of these two factors is why research into adult stem cell technology is now producing such significant results.

Just to reiterate that point, one of the problems and the reason for the lack of success with embryonic stem cell research as a whole—that is, the whole field; not just cloning—is that it is not a perfect match. It cannot be a perfect

match because the material comes from two different places, whereas, in the case of adult stem cells, the match is absolutely perfect.

There is no risk whatsoever of rejection, and that is why all of the breakthroughs so far that have occurred with respect to this technology, and all of the advances in terms of actually developing substances that can treat serious conditions such as diabetes and these other conditions that we all would love to see cured, have come from the adult stem cell research side of the equation—all of them, without exception.

There are other problems with SCNT cloning. To create Dolly the sheep, Professor Ian Wilmut—and this is not widely known, although it is certainly fact—zapped some 277 eggs but only one embryo cloned in this way ended up as a viable sheep. Creating cloned embryos requires many eggs and that itself is a problem now.

To produce them, women have to take powerful drugs to stimulate their ovaries and, unfortunately, one of the side effects is that up to 8 per cent of women who take these drugs develop a condition known as ovarian hyperstimulation, which is a very painful and serious condition and, indeed, some women have died from this condition.

A woman who is close to my family has actually experienced that condition of ovarian hyperstimulation. I was able to have a discussion with her recently about the symptoms she endured while she was suffering from ovarian hyperstimulation, and she quite emphatically said to me that she wished she were dead during that period, that it was absolutely horrifically painful. She was hospitalised and she did come through it, thank goodness, but it took seven or eight days or so before she got back any sense of functioning at all. She was essentially in tremendous pain in hospital.

The research shows that up to 8 per cent of women who take these drugs develop ovarian hyperstimulation. The point I am trying to make is that this is not problem-free science. It worries me to think that, in many well-documented examples overseas, poorer women, particularly, who have been coaxed into undergoing this dangerous procedure using various inducements,

have actually suffered the unfortunate consequence of ovarian hyperstimulation.

Even so, supplies of human eggs are actually difficult to obtain. Because of the shortage, some scientists want to use the eggs of other mammals such as rabbits, cows, sheep or monkeys whose mitochondrial DNA is even more different from human beings and, importantly, shows greater difference from the patient who, ideally, will be assisted by this technology.

So, in this bill, there is a paradox. Human-animal hybrids are supposedly banned, but clause 13 would allow testing of the viability of human sperm by placing the sperm with eggs of a rabbit or cow or some other animal creating for a short time a human-animal hybrid. I believe this is the thin end of the wedge. There are other ways to test sperm which have been well documented also, and even better ways could be developed.

I do not believe that we should head down this dangerous, ethically unacceptable path of mixing humans with animals. Just to be clear, members who choose to support this bill in its unamended state are choosing to support experiments using a combination of human sperm and animal embryos to form one embryo.

I can barely begin to imagine the significant moral and ethical problems that will emerge if a scientist were to attempt to incubate one of these human-animal embryos or implant it into an animal's womb. In fact, there have been one or two cases of human-animal embryos being created by scientists and living for several days in a test tube before dying. Again, I reiterate that if that embryo were placed in a womb—all things being equal, assuming a healthy womb and the like—it might take hold and then go through the process of becoming a full-grown animal (I guess, is the best word for it).

It is concerning that, because of this bill, we have to even address and specifically prohibit this repugnant practice from occurring in clauses 5 and 14. I remind members that in the past week or so a Flinders University laboratory has been shut down for unauthorised genetic experiments on mice. Who would have thought, five years ago when MPs in this place emphatically

ruled out all forms of human cloning, that we would now be debating a bill to allow some human cloning—even human-animal hybrids in certain circumstances.

I think at this point it is valid to ask: if in 2003 the parliament (of course, I was not here at the time) made the decision that this form of science was unacceptable, what has changed that makes it acceptable now? If someone voted against the bill in 2003, what has changed in that five-year period that would make them vote for it today?

If anything, there are more reasons to vote against such a bill today than there were in 2003—and I will go into that a little now. Since then, research teams in the United States and Japan have famously shown that a simple lab technique involving skin cells can rival the complex and highly controversial idea of extracting stem cells from cloned embryos. The stem cells derived from a patient's own skin cells have exactly the same DNA as the patient and so are a much better match than the embryonic stem cells, as I mentioned earlier.

So, at a time when there are calls to wind back and remove the 2007 federal cloning legislation from the statute book (including a call from Emeritus Professor Jack Martin of the University of Melbourne), we in South Australia are being asked to pass new laws allowing the practice. As I mentioned at the outset, Western Australia, one of the first jurisdictions in the world to consider embryonic stem cell research following the discovery of induced pluripotent stem (iPS) cells, recently refused to pass cloning legislation.

My understanding is that it was the first parliament in the world, since the discovery of induced pluripotent stem (iPS) cells last year, to actually debate the issue of therapeutic cloning. If I am correct (and I believe I am), the first jurisdiction to debate the matter since the discovery of iPS cells rejected the legislation; as I said at the outset, they mentioned that the new discoveries rendered legislation such as the legislation we are considering today completely unnecessary.

Professor Sir Ian Wilmut, the scientist who became famous for cloning Dolly the sheep (after 276 unsuccessful attempts, I might add), has now announced that he will abandon cloning in favour of research into ethnically reprogrammed skin cells, called induced pluripotent stem cells (the iPS cells to which I alluded a moment ago).

This research does not involve harm to human embryos; that is his primary reason for making the change, as well as his belief that—and I am paraphrasing of course, but I think I am safe in doing so as he said it publicly—iPS cells and that whole field of science offers so much more scope for genuine advancement in the field.

Eleven years after the Dolly experiment (and Dolly had to be put down because of bad health problems) there has been zero progress in finding cures or treatments using cloned embryonic stem cells. Again, even the fathers of the field, the great leaders of the field such as Professor Wilmut, are abandoning that science. Yet here we are debating it today.

In stark contrast to embryonic stem cell research, adult stem cell research—with no ethical problems whatsoever; there is no group lobbying against adult stem cell research; as far as I am aware, everyone is completely comfortable with the ethics of adult stem cell research—has seen a number of achievements, including treatment for over 70 conditions such as heart disease, bone and blood-based cancers, and leukaemia.

There is such a thing as backing a winner, and I think in the case of adult stem cell research the runs are on the board. This is science where breakthroughs are actually occurring—in stark contrast to embryonic stem cell research where there has been no progress, certainly nothing that has resulted in anything like a treatment for any of those conditions.

Let me touch briefly on some of the arguments made in the other place for cloned embryonic stem cell research over the iPS method. I have been through most of the contributions, and I note that one member (and I will not name them) argued that iPS cells cause tumours. I am afraid that they do not fully understand the science, or really understand it at all, because the truth is

that that is the science—that is, adult stem cells and embryonic stem cells cause tumours; that is how they work. They are so reactive, so to speak, that they create tumours, and that is exactly why they are useful.

If anyone has been seduced by the argument that iPS cells cause tumours, allow me to put their mind at rest once and for all. Whilst that is true, it is absolutely true for embryonic stem cells as well; indeed, it is useful that they do, and that is why they work and why the science is so exciting and unexplored at this point.

Both embryonic and iPS stem cells form tumours when injected into a patient because they are pluripotent. They have the power or potency to form plural (that is, more than one) types of tissue. So, they form not only the tissue you might want, such as heart cells, but they also form tumours containing teeth, skin, hair and so forth. Let me say it again: that is true of not just iPS cells but also of embryonic stem cells. That is the science. It is not a negative issue on either side of the debate: it is true for both sides, if you like.

Despite years of expensive research, no scientist has yet been able to produce a stem cell from a cloned human embryo—not one. Yet in just one year iPS stem cells have already been produced in large numbers—again with no ethical problems whatsoever. It was also mentioned in the other place by another member that it was guessed, if you like, that it may be five, 10 or 15 years until cures are available from iPS cells and therefore embryonic stem cell research should go ahead.

The reality is that there is nothing to support that statement whatsoever. Indeed, I have a letter from Australians for Ethical Stem Cell Research that goes into great detail to debunk the claim that it will be many years before we see breakthroughs using adult stem cells or the iPS cell method. Remember: as we speak, the runs are on the board for iPS cells—breakthroughs are occurring frequently with this technology and actual treatments are being used. There has been real progress in that field. At this stage, there is no progress whatsoever in embryonic stem cell research in any usable way.

Both embryonic and iPS stem cells form tumours and cannot be used in direct treatments for diseases. Human iPS cells are already proving useful for research and drug development, and they are being studied right now in major diseases. However, embryonic stem cells from cloned human embryos do not yet exist. They are not yet providing cures and, according to many learned people in this field, they are not likely to do so in the future. Indeed, Professor Ian Wilmut has made comments to that effect, and it formed one of his reasons for abandoning the embryonic stem cell field of research.

The only stem cells that are safe and tumour free are adult stem cells, because they are also free from immune rejection. Indeed, they are the cells extracted from the patient's bone marrow (or even from the nose in some cases) that are now being used in direct therapy for dozens of conditions world wide.

In summary, even if we put ethical questions aside (and I accept that people have different views on these matters), many scientists say that cloned embryonic stem cell research is proving to be a dead end. To be clear, if this bill goes through, that is the path we are going down. Professor Norman wrote to MPs on behalf of the Robinson Institute asking that the legislation be passed. The one and only justification he gave for cloning, as allowed by this bill, was:

Therapeutic cloning would allow patients or groups to have personalised stem cells which minimise their need for immunosuppression and would allow disease specific cell lines to be made from patients which could be used to study a disease and test drugs.

However, as Professor Martin has advised members through his letter recently, this argument has not been valid since November last year, now that the exact same personalised stem cells are up and running in dozens of patients using iPS technology, nor are the viral concerns raised by Professor Norman relevant any more, given discoveries in September just this year which have allowed the generation of iPS cells without viral vectors. In short, there is no reason to use the embryonic stem cell method. It is I think

disappointing that members have received a letter which omitted those two very important facts.

Scientists across the world who were researching in the area of cloned embryonic stem cells have turned their back on that research due to the cost and simply because the results they were getting were not satisfactory. That is not every scientist, of course; there are some who still want to go down that path but, clearly, many leaders in the field are publicly walking away from that arm of research. Why? Because there were no breakthroughs; not necessarily for ethical reasons, although some of them would have had ethical challenges with embryonic stem cell research, but because many of those scientists have taken a pragmatic route and said, 'This is too hard; the iPS research is so much more promising,' and, as a bonus, it has none of the ethical questions surrounding it that embryonic stem cells do.

I have a letter from Dr van Gend, who in his letter sums it up this way:

“Cloning has been made redundant by iPS and can be rejected as both unethical and unnecessary.”

This is a professor in his field. I repeat that:

“Cloning has been made redundant by iPS, and can be rejected as both unethical and unnecessary.”

I realise that this is a complicated issue and that the science for many of us can be baffling at times. I am happy to provide members with a copy of the letter which explains these specific scientific concerns, although I understand Dr van Gend sent members copies of the letter that he sent to me. He has indicated to me personally that he would be happy to talk on the phone with any member who so chose—I have his mobile phone number—for as long as they liked so they could understand the issues. He is not attempting necessarily to blind people to his opinion, if you like, or get them over to his side of the argument—although I guess that is ultimately what he would like to do—but he is happy to explain the science so that people can make their own decisions.

I reiterate that, if you look at this, in one form of this research, that is, the iPS cells, there have been tremendous advances on that side of the science. There have been no substantial advances on the embryonic side at this stage. Furthermore, there are significant ethical questions with embryonic stem cell research.

Further research must be directed towards adult stem cell research and not cloned and embryonic stem cell research, and I sincerely hope that the current, unnecessary bill will be soundly defeated in this place. If a member is considering voting for this legislation, I ask them to outline one single advantage that embryonic stem cell research offers over iPS cell or adult stem cell research. Any member doing that will come to the conclusion—and has to come to the conclusion, because it is fact—that there are simply no advantages in the embryonic stem cell research method over adult stem cell research. There is not one. I challenge anyone to name one. There simply is not one, and therefore this bill is absolutely unnecessary.

Given the current pace of change, I propose that we let this bill lapse. If there does in fact turn out to be a real demand for cloned embryos in the future, as some have speculated, the government can revisit this issue then. I think it is highly unlikely—in fact, I think it is absolutely unlikely. Stem cell research will continue in the meantime, as it has since 2003 when this parliament decided that cloning was unacceptable to it, but currently there is no sound argument for expanding the technology into cloning and, specifically, the mixing of human and animal DNA.

I will conclude with a few remarks. At the end of the day, it comes down to this: there are no documented advantages with embryonic stem cell research over adult stem cell research (or iPS cell research) at this time. It is as simple as that. Secondly, so far it has proved impossible to develop any genuine advances using embryonic stem cells.

The reality is that many senior scientists who have devoted their careers to stem cell research are abandoning embryonic stem cell research at a rate of knots, including the famous Professor Wilmut, who was responsible for

cloning Dolly the sheep. So, the issue there is that there have been no advances. Senior people in this field are abandoning it, because they see it as offering limited scope for genuine advancement.

The other issue is the very significant ethical questions contained in this bill, and specifically they are as follows. If we pass this bill, we as a parliament will say that it is okay to create life—to create an embryo—for the sole purpose of destroying it. We will also have a situation where, for the first time, we will allow the mixing of genetic material from human beings and animals. That is something of which I will not be a part, and I strongly oppose this bill, Family First opposes this bill, and I urge members to stand with me in opposing it.