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Edited by Professor Michael Adams, Professor David Barker AM and Ms Samantha McGolrick
Associate Editor Janet Fox

ALTA Secretariat
PO Box 222
Lindfield NSW 2070
AUSTRALIA
Tel: +61 (2) 9514 5414
Fax: +61 (2) 9514 5175
admin@alta.edu.au
www.alta.edu.au

**SEX, SHEEP AND SCIENCE FICTION:
CLONING AND THE MEDIA**

DEBRA WILSON*

* (PhD Candidate, Monash University, Australia) Lecturer, School of Accountancy & Business Law,
Massey University, New Zealand.

I CLONING SCIENCE, AND THE MEDIA

A Introduction

The telling of stories has long been regarded as having an important educative function in society. Lessons in appropriate behaviour and actions are often embedded in seemingly innocent stories. Children are taught the importance of being honest from Aesop's *The Boy Who Cried Wolf*, and the perils of trusting strangers from Grimm's *Little Red Riding Hood*. Stories aimed at adults contain similar lessons, often raising moral and ethical issues for consideration. The science fiction genre has developed into a key resource for these lessons. By setting a story in a clearly futuristic or alternative setting, a writer creates the opportunity for the reader to take a dispassionate view of the story, enabling him to examine the underlying themes without being distracted by contemporary issues.

One problem with transmitting lessons through a fictional setting arises when readers look for moral lessons that are not intended, or forget that the science fiction elements of the story are merely the vehicle through which the moral lessons are conveyed. The more a particular futuristic technology is used, the more the readers believe it to be possible. If that technology subsequently becomes a reality, readers automatically look to science fiction to provide lessons and warnings as to the appropriate use of the technology.

The idea of replicating humans, or creating robots that look and act in ways similar to humans, is a common science fiction plotline. It is generally used as a means of examining what it is to be human, by contrasting a human with something that is almost, but not quite, human. In order for this comparison to be made, the new being must at first act and react as a human would, but then at some point radically alter its behaviour. The lesson often learnt from this approach is not that which was intended, an examination of what it means to be human, but something more directly related to the storyline, that these artificial beings are different to humans and that they do not, or cannot, share those values we prize most highly.

B Artificially Created Life in Science Fiction

In 1818 Mary Shelley published *A Modern Prometheus*,¹ more commonly known as *Frankenstein*. The story is well known. A scientist creates a human-looking 'creature', to use his words, and brings it to life. After some time, the creature suffers an identity crisis and proceeds to kill several members of the scientist's family, before possibly committing suicide. The message is clear: humans should not create life.

In 1932 Aldous Huxley published *A Brave New World*.² This story describes factories that grow humans, the division of a single embryo into 96, all of which are then artificially gestated. They are genetically coded to perform certain tasks, and conditioned through drugs and mind control to enjoy the tasks and not to rebel. The *Matrix* trilogy³ follows this theme of humans grown for set purposes, although in these movies, the sole purpose of growing humans is for use by machines as an energy source. Then, there is the nightmare scenario. In *The Boys From Brazil*, 94 artificial Hitlers are created by Joseph Mengele.⁴ The message in these stories is also clear: the ability to artificially create multiple humans will endanger humanity as we know it.

Through these, and countless other stories, science fiction has introduced the word 'clone' into common usage. Although technically a scientific term, it has developed a separate meaning and connotation as a result of these stories: cloning is wrong. It destroys individuality,⁵ clones are lesser beings than humans, or are evil.⁶ Genetic engineering, which is indistinguishable from, or closely related to, cloning in these stories will destroy the society we have created.⁷

¹ Mary Shelley, *A Modern Prometheus* (1818).

² Aldous Huxley, *A Brave New World* (1932).

³ *The Matrix* (1999); *The Matrix Reloaded* (2003); *The Matrix Revisited* (2003).

⁴ Ira Levin, *The Boys From Brazil* (1976).

⁵ See *Multiplicity* (1996): where each successive clone becomes less individual than the last. Cf *The Boys From Brazil* (1976): the environment that determines who a person will be, although this message is often lost in the image of 94 replicas of Hitler.

⁶ See, eg, *Godsend* (2003) where a cloned child turns evil once he lives a day longer than the original.

⁷ See, eg, *Gattaca* (1997) where society discriminates between enhanced and non-enhanced people.

One article which takes an indepth look at the depiction of cloning in science fiction concludes in this way:

[p]opular culture uniformly condemns the utility of developing cloning as a method of reproduction or of extending life, postulating that it leads to self-worship, arrogance, and eventually the extinction of the race.⁸

C Science Fiction Becomes Reality

On 27 February 1997 Ian Wilmut of the Roslin Institute in Edinburgh announced the existence of a six month old cloned sheep, which his team had named Dolly.⁹ Dolly was not the first cloned animal, but the announcement had significance due to the fact that she was the first animal cloned from an adult cell. The method used was Somatic Cell Nuclear Transfer (SCNT). For SCNT to be successful, the cell used must be pluripotent (able to differentiate or develop into any cell). Adult cells are differentiated, meaning that they are coded for a particular role, for example, to be a skin or hair cell. The breakthrough achieved by Wilmut and his team was in successfully de-differentiating a cell by starving it of nutrients until it reverted to a pluripotent state. The nucleus could then be removed and implanted into another cell. It would then be activated by means of an electrical pulse, replicating natural fertilisation, and implanted into the uterus once the cell began to divide. There are two possible uses for SCNT: reproductive cloning, where the objective is to create life; and therapeutic cloning, where the objective is the creation of stem cells, which can then be used as a form of medical treatment.

The first report of Wilmut's achievement in a non-scientific journal appeared on 3 March 1997.¹⁰ In the intense media coverage that followed, the media drew immediate parallels with science fiction. Newspapers and television reports asked the same questions about the Roslin technique as science fiction readers had asked about

⁸ Christine Corcos, Isabel Corcos and Brian Stockhoff, 'Double-Take – A Second Look at Cloning' (1999) *Louisiana Law Review* 1041, 1047.

⁹ Ian Wilmut et al, 'Viable Offspring Derived From Fetal and Adult Mammalian Cells' (1997) 385 *Nature*, 810.

¹⁰ Gina Kolata, 'Scientist Reports First Cloning Ever of Adult Mammal', *New York Times* (New York), 3 March 1997, final edition A1.

the fictitious technology. Early news reports included film clips from movies,¹¹ giving science fiction a level of authority. The first newspaper article included a quote from a Princeton biologist that the news was ‘unbelievable, it basically means that there are no limits, it means that all of science fiction is true’.¹² The same article described the possibility that Jesus Christ could be cloned, using blood from the cross on which he was crucified.

The following year, one journalist summarised the print media’s reaction to the news:

[d]ebates prompted by last year’s cloning of Dolly the sheep evoked images of a crazed Dr Frankenstein building a monster, or loathsome infant freaks in medical labs and museums, or of soulless duplicates of a Hitler or Saddam Hussein.¹³

Such a reaction from the media was to be expected, and was even justifiable on the basis of satisfying market demand. This was the first example of futuristic technology becoming reality, and it was natural for the media to draw parallels with science fiction. More problematic was the reaction from governments and international bodies.

Within days of the announcement, the European Parliament called for a complete ban on cloning¹⁴ and immediately after, 19 European countries implemented this.¹⁵ The European Parliament itself passed a Resolution on Cloning on 13 March. On 11 March, the World Health Organisation released a statement that it ‘consider[ed] the use of cloning for the replication of human individuals to be ethically unacceptable’.¹⁶ In the United States, President Clinton quickly instituted a federal ban on funding for

¹¹ Lee Silver, ‘Popular Cloning Versus Scientific Cloning in Ethical Debates’ (2000-2001) 4 *New York University Journal of Legislation and Public Policy* 47.

¹² Kolata, above n 10.

¹³ August Gribbin, ‘Cloning Draws Nearer As Ethicists Seek to Draw Rules’, *Washington Times* (Washington), 9 November 1998, A1.

¹⁴ Announcement was made on 1 March; Rory Watson, ‘European Parliament Wants World Ban on Human Cloning’ (1997) 314 *British Medical Journal* 845.

¹⁵ Morris Fiddler et al, ‘The Role of the Preimplantation Geneticist in Human Cloning’ (1999) 19 *Prenatal Diagnosis* 1200, 1204.

¹⁶ Dr Hiroshi Nakajima, Director-General of the World Health Organisation, ‘Cloning in Human Reproduction’ (Press Release 11 March 1997) WHO/20.

therapeutic cloning, and commissioned a task force to advise on all aspects of cloning within 6 months.

It is also worth noting the language chosen in these statements. The European Parliament Resolution on Cloning states in the preamble:

the cloning of human beings... cannot in any circumstances be justified or tolerated by any society, because it is a serious violation of fundamental human rights and... permits a eugenic and racist selection of the human race.

One academic justified the reaction of the politicians in this way:

[w]hatever is presented in the media is taken as a reality. And in the political arena, when you are presented with what is in reality hypothetical, but perceived as a reality in the public eye, then as a politician and policy maker, you are expected to react and come forward with laws, statements, prohibitions and the like.¹⁷

This type of reaction from politicians might have been appropriate if the public had formed an opinion on the matter in question, but in this situation it is arguable that there had not been time for this to occur. The public was subjected to the strong reactions of both the media and politicians before there was a chance to consider the implications of Dolly's existence for itself. Politicians were not reacting to public opinion, but were helping to create it.

D The Next Step: Cloning Humans

The possibility of cloning humans has been a recurring debate in the media as scientists announce with regularity that it is possible, that steps have been taken to achieve cloning, or even that cloning has successfully occurred. The media focus is often on the scientists, who are themselves controversial. The most commonly mentioned names are Richard Seed, Severino Antinori and Panos Zavos, who claim to

¹⁷ Bartha-Maria Knoppers, 'Human Dignity: In Danger of Banality' (2003) *Case Western Reserve Journal of International Law* 385, 386.

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have unlimited funding, and laboratories in countries that have not banned the cloning of humans,¹⁸ bringing to mind the mad scientist on a deserted island with the backing of powerful businessmen. Most interesting to the media is Clonaid,¹⁹ run by the Raelian cult, who claim that humans are descended from aliens, who have since returned to Earth to teach the chosen few how to clone.

Antinori has claimed two pregnancies as a result of cloning,²⁰ and has commented that he is aware of three more.²¹ On 27 December 2002 the Raelians claimed that the first cloned baby, a girl named Eve, was born at an undisclosed location.²² They provided no evidence, and it is universally doubted that the story is genuine.²³ They have subsequently claimed that five cloned children were born in early 2003,²⁴ and a total of 13 altogether.²⁵

Again, politicians have reacted strongly to these reports. A comment released by a member of the British Upper House read: 'there is a real danger of creating a cloned person who won't be authentically human, but won't be anything else, either, a sort of living dead, if you like'.²⁶

¹⁸ John Pickrell, 'Experts Assail Plan to Help Childless Couples' (2001) 291 *Science* 2061; David Josephson, 'Scientists Plan Human Cloning Clinic in the US' (2001) 322 *British Medical Journal* 315.

¹⁹ <www.clonaid.com> at 15 February 2007.

²⁰ Leyla Dinc, 'Ethical Issues Regarding Human Cloning: A Nursing Perspective', (2003) 10 *Nursing Ethics* 238.

²¹ Judith Daar, 'The Prospect Of Human Cloning: Improving Nature Or Dooming The Species?' (2003) 33 *Seton Law Review* 511.

²² Colin Macilwain, 'Human Cloning Claim Sparks Fear of Senate Backlash' (2003) 421 *Nature* 3.

²³ Gina Kolata, 'Experts Are Suspicious of Groups Claim of Cloned Humans Birth', *New York Times* (New York), 28 December 2002, A16; Aaron Zitner, 'Nation Claim of Cloned Baby Appears to be a Hoax: More Doubt is Cast After Scientists Who Were to Conduct DNA Tests are Denied Access to Family', *Los Angeles Times* (Los Angeles), 17 January 2003, A13.

²⁴ Clonaid, '5 Babies Update' (Press Release, 16 October 2003) <<http://www.clonaid.com/news.php?10.9.8>> at 15 February 2007; Clonaid, 'Happy Birthday Eve' (Press Release, 24 December 2003) <<http://www.clonaid.com/news.php?6.7.8>> at 15 February 2007.

²⁵ Clonaid, 'Alive and Well' (Press Release, 27 March 2004) <<http://www.clonaid.com/news.php?3.4.3>> at 15 February 2007.

²⁶ Lord David Alton, cross bench member of the House of Lords, quoted in Rita Delfiner, 'Childless Pair Mulls a Clone of Their Own', *New York Post* (New York), 9 February 1999.

II CLONING AND LEGISLATION

In New Zealand the *Human Assisted Reproductive Technology Act 2004* states expressly that reproductive cloning is not to be permitted. Schedule One of the Act lists among the prohibited actions:

1. To artificially form, for reproductive purposes, a cloned embryo; and...
3. To implant into a human being a cloned embryo.

It is suggested that this is a clear reaction to both the media reports and the other legislative action that occurred following the announcement of Dolly and the rumours of success in human cloning. This can be supported by reference to the purposes behind the Act, as listed in s 3, which include:

- (a) to secure the benefits of assisted reproductive procedures, established procedures, and human reproductive research for individuals and for society in general by taking appropriate measures for the protection and promotion of the health, safety, dignity, and rights of all individuals, but particularly those of women and children, in the use of these procedures and research;
- (b) to prohibit unacceptable assisted reproductive procedures and unacceptable human reproductive research.

Purpose (b) is best described as vague. The only suggestion as to possible reasons why cloning would be considered 'unacceptable' are those found in purpose (a). Words like 'society in general' and 'safety, dignity and rights of all individuals' bring to mind science fiction type arguments that a cloned individual will be either lesser or greater than humans, depending on whether the future follows the *Brave New World*²⁷ or the *Gattaca*²⁸ scenarios. The words 'dignity' and 'rights' suggest that the clone will

²⁷ See Huxley, above n 2.

²⁸ See Gattaca, above n 7.

be the exact copy of the original, as in *Multiplicity*, or the common understanding of *The Boys From Brazil*.²⁹

The *Human Assisted Reproductive Technology Act 2004* is interesting for its emphasis on ‘society’ and ‘dignity’ in purpose (a), but its restriction of human research to ‘reproductive research’ in purpose (b), and the ban on creating embryos for reproductive purposes in Prohibited Action 1. The creation and use of human embryos for non-reproductive purposes is equally, if not arguably more, damaging to society and dignity than their use for reproductive purposes. Non-reproductive cloning involves the same process and necessary destruction of embryos as the reproductive form, without the benefit of new life at the end. In other words, it treats the embryos as less than human, created for a specific purpose, and then destroyed once that purpose is achieved.

This approach reflects the debates in the United Nations over the wording of a ban on cloning. Clearly divided opinions on whether both reproductive and therapeutic cloning should be banned led to delays from 2002 until 2005 in forming a Resolution to be adopted by the General Assembly. The approved United Nations Declaration on Human Cloning³⁰ is drafted vaguely enough that whether it includes therapeutic cloning depends on whether a state classifies an embryo as ‘human life’, which is the subject of the protection.

Why then, does the Act and possibly the United Nations Resolution appear to allow one form of cloning and not the other? The answer is simple. The commonly used term for therapeutic cloning is ‘stem cell treatment’. Without the presence of the word ‘cloning’ the technique has escaped the evil connotation that is associated with reproductive cloning. As a result, there has been comparatively little media sensationalism associated with stem cell treatment, and people have been given the opportunity to decide for themselves. Last year when a New Zealand woman travelled to China for stem cell treatment, newspaper and television polls showed that a

²⁹ See discussion, above n 5.

³⁰ GA Res 59/280, UN GAOR, 59th sess, UN Doc A/Res/59/280 (2005).

majority of New Zealanders were in favour of the treatment and of stem cell research being conducted in New Zealand. Similar polls have shown that a majority of New Zealanders are against reproductive cloning.

III WHERE TO FROM HERE?

This paper does not attempt to argue in favour of, or against, allowing either reproductive or therapeutic human cloning. It does, however, argue strongly that we should not be enacting laws that are a clear reaction to media reports. Laws should reflect the opinion of society, and in order to have an opinion, society should have, at the least, information on the subject and an opportunity to think about this information. The speed of the various reactions to the announcement of Dolly demonstrate that this did not occur.

Education becomes vital. What was needed following the media reporting of Dolly was the other side of the coin, the scientific information. The media reporting did not necessarily cement people's opinion of cloning as being wrong. People know and expect that the media sensationalises stories. It was the lack of other information available that would appear to be the decisive factor. There are certain people that society generally relies on to give this information, notably academics, scientists and politicians. There was comparatively little information from the first two groups, and the politicians' reactions in quickly condemning cloning merely reinforced the idea that the media angle was accurate.

One question that could be asked, then, was, why did the academics and scientists not provide this information? Brazier, in an editorial in the *Medical Law Review*, made the following comment which might explain this:³¹

Media or public engagements are time consuming. They count for nothing in the Research Assessment Exercise. To refuse to engage with the media is to render out work of limited interest confined to our own community.

³¹ Margot Brazier, 'Editorial: Times of Change' (2005) 13 *Medical Law Review* 6-7.

Replace 'Research Assessment Exercise' with the New Zealand 'Performance Based Research Funding' and you get an interesting, but troubling, scenario. The people that society relies on to give unbiased information may cease to actively do so, because of pressure to produce work that is rated higher in order to gain higher research funding for their universities.

IV CONCLUSION

Cloning is perhaps the first of several science fiction style technologies that are becoming possible as our technology advances. Reynolds, in an article on nanotechnology, suggests that there are lessons to be learned from the reaction to cloning:

[t]he discussions over nanotechnology should begin sooner rather than later, because as the debate grows more intense and as science approaches feasibility, it becomes more difficult to think clearly about the issues involved.³²

As our ability to create new technology develops, it becomes vital that we recognise the importance of distinguishing between what science fiction tells us could happen, and what science tells us is actually possible. Banning cloning is not necessarily the wrong move, but banning cloning based on the fact that science fiction tells us that it is dangerous is definitely the wrong move. Our society prizes technological advancement and this should not be limited unless there is a good reason for doing so. If the majority of New Zealand society believes cloning is wrong, then the New Zealand government should ban it, but the government must also undertake the responsibility of ensuring that the people have information available to them in order for them to make an informed decision.

³² Glenn Reynolds, 'Nanotechnology and Regulatory Policy: Three Futures' (2003) 17 *Harvard Journal of Law and Technology* 179, 180.