

HUMAN CLONING: SEPARATING SCIENCE FROM FICTION

The Ethics and Legality of Human Cloning

Submitted as the dissertation component in partial fulfillment of the requirements for the degree of Master of Laws in the Faculty of Law, University of Natal, 2002.

This dissertation is an original piece of work, which is made available for photocopying and inter-library loan.

**Lynn Joy Matisonn
Durban 2002.**

ACKNOWLEDGEMENTS

I wish to express my deep appreciation to my supervisor, Professor David J. McQuoid-Mason, for his painstaking reading and criticism of this work. Grateful thanks, too, to Professor Daniel Herwitz and Dr David Spurrett, of the Department of Philosophy, University of Natal, Durban, for their advice.

Last, but not least I wish to express my appreciation to my husband and children for encouraging me to persevere in completing this dissertation as part of the Master of Laws degree.

TABLE OF CONTENTS

INTRODUCTION	3
CHAPTER I The Nature, History, Methods and Purposes of Cloning.	9
1.1. What is a 'Clone'?	9
1.2. Cloning Methods	11
1.3. Historical Background	13
1.4. Purposes of Human Cloning	16
1.5. How Identical are Clones?	20
1.6. Conclusion	23
CHAPTER II Ethical Theories and Principles	24
2.1. Theoretical Background	24
2.1.1. Rule-based Ethical Theories	25
2.1.1.1. Utilitarianism	25
2.1.1.2. Deontology	26
2.1.2. Character-based Ethical Theories	28
2.2. Ethical Principles	29
2.3. Conclusion	31
CHAPTER III Normative Arguments against Reproductive Human Cloning	32
3.1. The Question of Harm	32
3.1.1. Physical Harm	33
3.1.2. Psychological Harm	37
3.1.3. Social Harms	46
3.1.3.1. Threat to the Diversity and Integrity of the Human Gene Pool	46
3.1.3.2. Objectification and Instrumentalisation	47
3.1.3.3. The Problem of Eugenics	48
3.1.3.4. Problems of Kinship and a Threat to Family Life	50
3.1.3.5. Issues of Social Justice	55
3.2. Conclusion	57
CHAPTER IV Normative Arguments in Support of Human Cloning	58
4.1. Individual or Social Benefits	58
4.1.1. Treatment of Infertility	59
4.1.2. Cloning for Homosexual Gay and Lesbian couples	62
4.1.3. Research on Human Cloning	63
4.1.4. Reproduction without Transmitting a Serious Hereditary Disease	64
4.1.5. Cloning as a Source of Organs or Tissue for Transplantation	66
4.2. Do We Have a Moral Right to Clone or Would a Prohibition on Human Cloning Violate Important Moral Rights?	68
4.2.1. Right to Privacy	70
4.2.2. Right to Freedom of Scientific Research	76
4.3. Religious Perspectives on Human Cloning	83
4.4. Conclusion	87

CHAPTER V International Legislation	89
5.1. United States of America	89
5.2. United Kingdom legislation	94
5.3. Australia	96
5.4. European Countries, other than the United Kingdom	98
5.5. Other Approaches	102
5.6. Relevance of Foreign Law	103
5.6.1. United States of America	104
5.6.2. Other States	106
5.5. Conclusion	110
CHAPTER VI Conclusion and Recommendations	111
6.1. Summary	111
6.2. Recommendations	114
6.3. Additional Policy Recommendations	119
6.4. Conclusion	124

INTRODUCTION

Until the announcement on February 24 1997¹ of the birth of Dolly, the sheep cloned by Dr Ian Wilmut, Dr Keith Campbell and their colleagues of Roslin Institute, Scotland, the idea of human cloning remained in the realms of science fiction. For a long time the theme of human cloning had been a popular one in literature and film, particularly in the 20th century, but, as has often been the case, what was once mere science fiction has now become a very real scientific possibility.

In fact the idea of cloning a human being has its origins in the Biblical creation of Eve from the rib of Adam, but here two problematic aspects of human cloning were absent. Firstly, Eve was not the product of human intelligence and therefore not 'contrary to nature' as some of the most vociferous critics of human cloning by human technology argue. Secondly, Eve was not a true clone in that she could not have had the same DNA as Adam, being of the opposite sex and therefore not subject to the problems of a common identity.

The dramatic news of the birth² of a Finn-Dorset lamb cloned from a mammary gland cell of an adult Finn-Dorset – hence the name 'Dolly' after Dolly Parton! – which was then transferred into a Scottish Blackface surrogate mother, transferred science fiction into fact and with it raised a plethora of ethical, social and legal debates throughout the world. 'Ethics hysteria' (as the heated reactions were described by the Catholic theologian, Thomas Shannon³) ensued and critics seized upon fictions of the past with a proliferation of bizarre scenarios of human cloning. It is useful to look at some of these as they in fact reveal many misconceptions regarding human cloning.

¹ *The Letter to Nature Announcing Dolly's Birth* I. Wilmut, A.E. Schnieke, J. McWhir, A.J. Kind K.H.S. Campbell *Nature* (24 February 1997) Vol.385 811-13

² 5 July 1996

³ P.Schaeffer 'Many Oppose Human Cloning' *National Catholic Reporter* 22 October 1999 published on the internet at: www.natcath.com/NCR_Online/archives/102299/102299h.htm

As early as 1818, Mary Shelley's *Frankenstein*⁴ raised the possibility that science could create a human monster that it could not control. In 1931 Aldous Huxley's *Brave New World*⁵ conjured up scenarios of governments using foetal hatcheries to breed children born into a predetermined intellectual class ranging from alpha at the top to epsilon, the slave class at society's base. The picture Huxley presents is one of a future political world state asserting complete control over human nature and human reproduction. *Blade Runner*, the 1982 Ridley Scott film based on the science fiction novel, *Do Androids Dream of Electric Sheep?*⁶, presented the scenario of a successfully cloned group of 'replicants' who although designed without human emotions nevertheless evolve such emotions but are treated as things rather than human beings. The suggestion is, as in *Brave New World*, that humans originated by cloning will be exploited as slaves or servants, and will never be the moral, social, political or legal equals of other human beings – and will certainly never have a soul!

The Ira Levin novel, *Boys from Brazil*,⁷ - subsequently made into a film – depicts a Nazi plot to clone an army of Hitlers, taking up the ideas of Alvin Toffler who, in *Future Shock* in 1970 wrote: 'One of the more fantastic possibilities is that man will be able to make biological copies of himself....Cloning would make it possible for people to see themselves anew, to fill the world with twins of themselves.... There is a certain charm to the idea of Albert Einstein bequeathing copies of himself to posterity. But what of Adolf Hitler?'⁸ Woody Allen's 1973 movie, *Sleeper*,⁹ anticipates the cloning methods of Wilmut *et al* where an identical physical copy is produced by nuclear somatic transfer from the cells of a human body – the cells of a dictator's nose. Fay Weldon reveals the Osexist motives behind a rich man's attempt to create female clones of his young wife in her 1989 novel, *The Cloning of Joanna May*.¹⁰

⁴ *The Mary Shelley Reader* ed. B. Bennett and C. Robinson, Oxford University Press, New York (1990).
 Filmed in 1931 with Boris Karloff as the monster.

⁵ Aldous Huxley (1932) *Brave New World*

⁶ Philip K. Dick *Do Androids Dream of Electric Sheep?* (1968)

⁷ Ira Levin *Boys From Brazil* Random House (1978)

⁸ quoted in Lee M. Silver (1997) *Remaking Eden: Cloning and Beyond in a Brave New World* 97

⁹ directed by Woody Allen and starring Woody Allen and Diane Keaton

¹⁰ Fay Weldon (1989) *The Cloning of Joanna May*

On a lighter note, the 1996 film, *Multiplicity*,¹¹ starring Michael Keaton presented cloning as the production of a carbon copy of the hero of the film by a surgical procedure, in order to allow the original more time to deal with the demands of his work and family. Art Buchwald in *The Washington Post*¹² fantasized about 5 clones of Michael Jordan playing 5 other clones of Michael Jordan bringing great delight to basketball fans!

While some of these scenarios were merely comic, the idea of human cloning provided a 'fertile area for fantasies about exercising a despotic or narcissistic power over others',¹³ based on the naive belief that the birth of Dolly generated, namely that it would now be possible to simply go out and create a copy of oneself or anyone else who would then be subject to the control of the cloner and who, being identical to the individual cloned, be it Michael Jordan, Madonna, Mother Theresa, Mozart, Einstein, Hitler, or Osama Bin Laden, would thereby be denied uniqueness or individuality, an essential characteristic of normally produced human beings with their own unique DNA.

One of the immediate hysterical reactions to the announcement of the cloning of Dolly¹⁴ was the attempt to ban cloning as a 'threat to human nature' by President Clinton.¹⁵ He first banned federal funds for cloning research, then called for a private sector moratorium. Then on the recommendation of the National Bioethics Advisory Commission (NBAC) the White House put forward a bill to Congress proposing anti-cloning legislation for a period of 5 years.¹⁶ The Human Research Embryo Panel established in the U.S. in 1994 by the National Institute of Health (N.I.H.) concluded, however, that 'Popular views derive from science fiction books and thus have more to do with cultural fantasies than scientific experiments',¹⁷ (underlining added). In contrast the

¹¹ Columbia (1996)

¹² *The Washington Post* March 6 1997 at B1 quoted in John A. Robertson: *Liberty, Identity and Human Cloning* Texas Law Review 76:1371 (1998) reproduced on the internet www.humancloning.org/liberty6.htm 3

¹³ Robertson *op cit* www.humancloning.org/liberty.htm 8

¹⁴ as Arthur Caplan describes, "America began to hyperventilate" 'Do Not Copy Without Permission' in *Am I My Brother's Keeper?* (1997) 211

¹⁵ Rick Weiss 'Clinton Forbids Funding of Human Cloning' *Washington Post*, 5 March 1997, at A10

¹⁶ George J. Annas 'Why We should Ban Human Cloning' *The New England Journal of Medicine* Vol.339, No.2 9 July 1998 122-5 published on the internet at: www.nejm.org/content/1998/0339/0002/0122.asp

¹⁷ Gregory E. Pence *Who's Afraid of Human Cloning?* (1998) 42, 90

conservative opponent of cloning, George Annas, argued that science fiction has valuable lessons and that 'literary treatments of [human] cloning help inform us that applying this technology to humans is too dangerous to human life and values'.¹⁸ Dr Ian Wilmut himself appeared before the United States Senate, declaring the idea of human cloning to be repugnant¹⁹ although he spoke about the enormous benefits of animal cloning, the aim of his research.²⁰ The announcement by biophysicist Richard Seed in June 1997 that he 'can't wait to clone myself three or four times'²¹ added fuel to an already raging fire especially when he began a media tour to raise funds for a cloning clinic in Chicago or Tijuana, Mexico. In October 1997 California became the first state to ban human cloning,²² and in September 1997 the Council of Europe amended one of its human rights conventions and banned cloning as a threat to the dignity and identity of all human beings.²³

The aim of this paper is to question the 'ethics hysteria', by investigating the nature and methodology of human cloning with particular emphasis on reproductive cloning, in an attempt to offer a more balanced perspective on the ethics and legality of human cloning. The ultimate challenge is how to support the host of beneficial applications that may result from cloning technology, while at the same time guarding against more questionable uses and abuses.

Chapter I focuses on the historical and scientific background of cloning. The nature of cloning will be discussed, since much of the hype surrounding the evils of cloning results from misconceptions in this area. Different methods of cloning will be explained in terms of their practical and ethical implications – for example, embryo splitting, stem cell cloning, and somatic cell nuclear transfer. The purposes of cloning will be addressed under two main categories, reproductive and therapeutic cloning, which are of both ethical and legal significance.

¹⁸ Annas *op cit* 42

¹⁹ cf. Leon Kass 'The Wisdom of Repugnance' in G.E. Pence (ed) *Flesh of My Flesh* (1998) 13-37

²⁰ John A. Robertson *op cit* www.humancloning.org/liberty.htm Section 1 7

²¹ quoted in Glen McGee (ed) 2000 *The Human Cloning Debate* 'Introduction' 7

²² Robertson *op cit* 17

²³ *ibid*

Chapter II provides the theoretical background against which the morality of human cloning will be discussed.

Chapters III and IV offer an analysis of normative arguments against and in support of cloning especially in terms of the competing theories and principles of biomedical ethics as discussed in Chapter II. Religious views on cloning will be addressed only briefly, as the debates are extensive and problematic and beyond the scope of this paper.

Kass²⁴ suggests that there are 3 contexts in which support for cloning may be discussed and these will form the basis for discussion in Chapter IV. These are: a) technological – cloning as an extension of existing forms of assisted reproduction therapy; b) liberal – cloning in the context of rights, freedoms and personal empowerment – the rights of women, the right to have a genetically related child, the right of privacy, the rights of scientists etc; c) meliorist – the claim that cloning holds prospects for the improvement of human beings, either as a means of eliminating genetic disease, or in its extreme form having the eugenicist aim of producing optimum babies, with outstanding characteristics. The latter constitutes one of the many arguments against human cloning, namely that the widespread practice of somatic cell nuclear transfer cloning, (the method used to clone Dolly and that most likely to be used in human beings), ‘would undermine important social values by opening the door to a form of eugenics or by tempting some to manipulate others as if they were objects instead of persons’.²⁵ Arguments against human cloning will be examined in terms of harm – including physical and psychological harm to the cloned individual as well as social consequences such as kinship problems, and a threat to conventional family life. The question as to whether cloning involves violation of fundamental moral rights will also be addressed. The second part of Chapter IV will offer a defence of human reproductive cloning in terms of questions of constitutionality and the moral and legal rights entrenched in the South African Constitution²⁶, in

²⁴ Kass *op cit* 21-22

²⁵ National Bioethics Advisory Commission *Cloning Human Beings* (June 1997) Chapter 6 – *Recommendations of the Commission* published on the internet: <http://bioethics.gov/pubs.htm>

²⁶ Act 108 of 1996

particular in the Bill of Rights.²⁷ A controversial clause in the Human Tissue Act will be considered, as there is debate as to whether or not this Act expressly prohibits human cloning. And if it indeed does, the question arises as to whether this in fact conflicts with the limitation clause²⁸ of the Constitution. The chapter will conclude with a brief discussion of religious attitudes to human cloning.

Given that Section 39 of the Bill of Rights requires that in interpreting the Bill international law *must* be considered and foreign law *may* be considered, Chapter V will provide an overview of some international conventions and legislation. This will include the U.S National Bioethics Advisory Commission (NBAC) Report²⁹ and selected Commission papers³⁰; cloning legislation considered by the 107th American Congress of 2001, and the U.K. Human Genetics Advisory Commission Report.³¹ Some examples of foreign law will also be provided. The question arises as to what extent South African legislators need follow these policies or decisions.

Chapter VI concludes with the notion that an outright ban is not necessary and that the guidelines already in place for research projects are sufficient. It is argued that while at present there are practical limitations, ethical arguments are not strong enough to justify a complete ban, which moreover may be unconstitutional. Nevertheless a balance needs to be struck between outright banning (which in any case may not succeed) and a reasonable measure of control. It is submitted that ethics should determine, not be determined by, legislation. In the words of Charles Dickens's Mr Bumble³², 'the law is [sometimes] an ass'!

²⁷ *ibid* Chapter 2

²⁸ *ibid* Section 36 (2)

²⁹ NBAC *op cit*

³⁰ *ibid*

³¹ *Cloning Issues in Reproduction, Science and Medicine* (1998) published on the internet at www.dti.gov.uk/hgac/papers/papers_d.htm

³² Charles Dickens (1837-9) *Oliver Twist*

CHAPTER I

1. The nature, history, methods and purposes of cloning.

1.1. What is a 'clone'?

It is important to define what a clone is since much of the ethics hysteria over the event results from a misunderstanding of the nature of cloning. As Wilmut and Campbell state, 'The details matter. They are at the heart of the science and.... the facts of the case do bear upon ethical decisions and theological attitudes.'³³

The term is derived from the Greek word *klon* meaning 'twig'.³⁴ The Greeks discovered that if one broke off a twig from a particular tree and planted it, a new tree, a copy of the original tree, would grow. The terms 'clone' and 'cloning' are originally horticultural terms referring to 'a plant group the members of which have been grown from an original stock, but which do not come from true seed'.³⁵ There are several definitions applied to animal cloning, one of which is 'to reproduce asexually',³⁶ usually through division. Asexual reproduction is common in the plant kingdom and though less common also occurs among some animals such as coral, some lizards, fish and birds.³⁷ Asexual reproduction³⁸ does not occur in humans except in the case of natural identical twins, triplets or multiplets, so-called 'natural clones' that are reproduced by division, or embryo splitting.³⁹ In these cases, however, sex is a necessary preliminary to replication. In replication by division one organism becomes two. Sexual reproduction, however, is

³³ Ian Wilmut, Keith Campbell & Colin Tudge *The Second Creation* (2000) 59

³⁴ George Seidel Jr. 'Cloning Mammals: Methods, Applications and Characteristics of Cloned Animals' in Barbara MacKinnon (ed) *Human Cloning: Science, Ethics and Public Policy* (2000) 17

³⁵ Robertson *op cit* 3

³⁶ Seidel *op cit* 17

³⁷ Wilmut et al *op cit* 60-63

³⁸ DK Oxford Illustrated Dictionary (1998) defines asexual reproduction as reproduction 'not involving the fusion of gametes' 55

³⁹ Seidel *op cit* 27. The term 'embryo' is applied generally to early unborn offspring but more specifically to a human offspring in the first 8 weeks of conception.

anti-replication⁴⁰ in that the genes of two organisms are mingled to become one, thus leading to evolution through mixing.⁴¹ Another definition is ‘to make a genetic copy or set of copies of an organism’,⁴² that is an organism having the same genetic material information as another organism – or a replica of a DNA sequence such as a gene. A narrower definition relates to the method that has evolved of ‘fusion or insertion of a diploid nucleus into an oocyte (egg)’.⁴³ ‘Clone’ may also refer to a set of genetically identical organisms, or to an individual member of a set of genetically identical organisms.

While humans do not normally replicate by cloning our development involves cloning, in that a single cell embryo or zygote, produced through the fusion of a sperm and egg cell, divides and redivides, producing clones of the original zygote.⁴⁴ These cells are, however, of different kinds – skin, muscle, blood etc. How does this come about? Two phenomena are involved, *totipotency*⁴⁵ and *differentiation*.⁴⁶ The cells of a zygote are what is termed totipotent, pluripotency being a variant. That is, they can evolve or differentiate into all the different cells that comprise our bodies. On the other hand certain differentiated or specialised cells, such as skin cells, divide to produce more skin cells, while nerves and muscles do not divide at all. The most specialised are the red blood cells of mammals, which have lost their nucleus and cannot divide.⁴⁷ Pluripotency lies between the extremes of specialisation and totipotency and is applicable to certain stem cells such as those of the blood which evolve into various forms of red and white blood cells.⁴⁸ These features are of great significance for cloning methods.

⁴⁰ There has been considerable debate (e.g. Kass, Meilander in G. E Pence note 10 above) as to whether cloning is ‘replication’ rather than ‘reproduction’ and thus morally repugnant, an argument that I believe is based on confusion, as I will explore later and show to be faulty.

⁴¹ Wilmut et al *op cit* 59-66

⁴² Seidel *op cit* 17

⁴³ *ibid*

⁴⁴ Wilmut et al *op cit* 67

⁴⁵ ‘The ability of a cell to give rise to descendant cells that may differentiate to form any of the kinds of tissues typical of the organism.’ Wilmut et al *op cit* 353 (see also 67)

⁴⁶ ‘The process by which cells change in form and function as they develop and take on a specialist role.’ Wilmut et al *op cit* 342 (see also 67)

⁴⁷ Wilmut et al *op cit* 67

⁴⁸ *ibid*

1.2. Cloning Methods

The following methods can be identified:

- Embryo splitting which developed from the technique of embryo transfer whereby embryos were removed from the female reproductive tracts of donors and transferred to other females. This technique was also used in the development of 'test-tube babies' where cells were fertilised *in vitro* to be transferred as embryos. With embryo splitting, embryos are bisected at an early stage of development and replaced in the reproductive tracts thus producing duplicate embryos / twins. This method is practised widely in the cattle breeding industry. In mice, splitting takes place at the 2-cell stage, in cattle and sheep, at the 8-cell stage.⁴⁹ At these stages the cells are still totipotent and thus have the ability to develop into a complete animal. This method may also have a therapeutic use in that a twin embryo can be provided for biopsy in order to test the soundness of the embryo. The undamaged twin embryo could then be implanted.
- Cellular cloning, the purpose here not being to clone a complete organism or genome but rather to mimic in a culture dish the natural processes whereby differentiated cells, such as skin cells, reproduce through cloning. The purpose here is entirely therapeutic. A large number of specialised cell lines have been established and show much promise for treating congenital diseases with gene therapy. One of these is SCID (Severe Combined Immune Deficiency)⁵⁰, the disease suffered by David, the Boy in the Bubble.

⁴⁹ *ibid* 70

⁵⁰ Potter Wickware 'History and Technique of Cloning' in Glen McGee (ed) (2000) *The Human Cloning Debate* 28

- Cloning by nuclear transfer whereby the nucleus of an embryo cell⁵¹ is transferred into the cytoplasm⁵² of an oocyte or zygote that has been enucleated, that is, its own genetic material is removed. The cell containing the nucleus is fused with the oocyte using an electrical impulse, the latter acting as a substitute for the activating role of sperm. This method, which was used in the cloning of Dolly, has come to be known as Somatic Cell Nuclear Transfer (SCNT) and like embryo splitting is aimed at producing a duplicate of the original organism or animal. [See diagram below]⁵³.

⁵¹ Initially only embryonic cells were believed to be viable – only later with Dolly were adult cells used

⁵² See below

⁵³ Seidel *op cit* 30

Initial attempts to clone involved early embryos.⁵⁴ Dolly was the first clone resulting from an adult animal.⁵⁵ Although some describe the relationship as that between a parent and offspring, with the clone having only one biological parent, from the point of view of genetics the clone is a sibling of the donor of the somatic cell – cloning is thus understood as ‘delayed twinning’. On this view the clone has two biological parents – the same parents as those of the person from whom that individual was cloned.⁵⁶

1.3. Historical Background

Cloning research began in the 19th century and success was first achieved in the 1950’s initially with amphibians using embryonic donor cells. In 1951 Robert Briggs and Thomas J. King produced their first reconstructed live frog embryo achieved by removing the nucleus from a frog’s egg and transferring it to an enucleated egg of a recipient frog. Unfortunately the embryo was crushed by ‘the overeager forceps of a visiting scientist’!⁵⁷ Ultimately they reconstructed 197 embryos of which 104 began development, 35 became fully-fledged embryos and 27 grew into tadpoles,⁵⁸ but these inexplicably did not develop into adult frogs.

In 1975 John Gurdon succeeded in removing the nucleus from a frog egg and replacing it with the nucleus of an embryonic tadpole. By this method his animals survived, developing into adult frogs with the same complement of genes as the embryonic tadpoles.⁵⁹ In the mid 80’s experimentation began with sheep, the original motive being to produce herds of better quality animals. However Gurdon’s experiments to produce frogs from adult cell nuclei did not succeed and the belief prevailed that it was impossible

⁵⁴ See Historical Background below

⁵⁵ Wilmut et al ‘Letter to Nature Announcing Dolly’s Birth’ *op cit* 811

⁵⁶ Robert ‘Genetic Encores: The Ethics of Human Cloning’ in T. Mappes & D. deGrazia *Biomedical Ethics* (2000) 570

⁵⁷ Wachbroit *op cit* 92

⁵⁸ *ibid*

⁵⁹ Philip Kitcher ‘There Will Never Be Another You’ in MacKinnon (ed) *op cit* 54

to use cells that had already differentiated. It was this idea, however, that was subsequently to bear fruit at Roslin in 1996.

In order to make viable embryos by nuclear transfer it was initially believed that one had to begin with nuclei that were still totipotent, and able to differentiate into all the cells of a complete organism. Dolly, however, manifested the realisation that cell differentiation was not irreversible and that the genome of a differentiated cell can be reprogrammed to recover totipotency. What was required was that one had to ensure that the donor nucleus and the receiving cytoplasm were both in the appropriate stage of the cell cycle. Wilmut *et al* developed a method of arresting the development of cells in order to prepare for nuclear transfer, by synchronising the cell cycle of the donor and recipient through serum starvation,⁶⁰ thus rendering the donor cell quiescent. It was this that established them as the real pioneers of cloning.

The predecessors of Dolly were Megan and Morag, 'sheep cloned by nuclear transfer from a cultured cell line'.⁶¹ In the experiment the donor nuclei came from Welsh Mountain ewes and the cytoplasts (i.e. enucleated oocyte donors) were Scottish Blackface ewes. Five live lambs were born, two dying shortly after birth and one ten days later. Megan and Morag five years later were healthy sheep,⁶² differing from Dolly mainly in that they were cloned from embryo rather than adult cell lines. Strangely, however, the response to the birth of Megan and Morag did not elicit the same hysterical responses that Dolly did a year later, although there were reports such as 'Monsters or Miracles?'.⁶³ It is probable that other events at the time such as the tragic shooting of the children at Dunblane replaced the news of the cloning.⁶⁴ Cedric, Cyril, Cecil and Tuppence were healthy lambs produced from embryos.⁶⁵ The next task at Roslin was to clone embryos from cultured cells that had come not from young embryo cells but from older creatures, foetuses or adults and in 1996 Taffy and Tweed were cloned from foetal

⁶⁰ Potter Wickware *op cit* 29

⁶¹ *Nature* 7 March 1996

⁶² i.e. in 2000, the year that *The Second Creation* was printed.

⁶³ Wilmut *et al op cit* 229

⁶⁴ *ibid*

⁶⁵ Wilmut *et al op cit* 238

fibroblasts, cells from 26-day-old fetuses. Dolly, the result of a collaborative effort between Roslin and PPL Therapeutics PLC, was born on 5 July 1996, the first animal created from cultured differentiated cells taken from an adult.⁶⁶ Her birth finally refuted the dogma that once cells are committed to the tasks of adulthood then they cannot again be totipotent. Genetic fingerprinting verified that Dolly's genes were developed from an adult mammary cell, an adult Finn Dorset ewe in the last trimester of pregnancy, while the recipient surrogate mother was a Scottish Blackface. In the experiment that produced Dolly 277 embryos were transferred into the oviducts of temporary recipients. 247 were recovered and 29 developed into morulae or blastocysts.⁶⁷ These were transferred into 13 Scottish Blackface ewes one of which became pregnant and delivered a live Finn Dorset lamb, Dolly, named after Dolly Parton, stressing the mammary connection. Wilmut *et al* described her birth as 'otherworldly' and 'the stuff of which myths are made'⁶⁸, statements that were indeed to prove prophetic.

In 1997 another milestone was reached at Roslin when Polly was born, a transgenic sheep produced by transfer of the nucleus of a cultured foetal fibroblast (the same method that produced Taffy and Tweed). In other words Polly was not only cloned but also genetically transformed. She carried a human gene for blood clotting Factor IX, used for the treatment of haemophilia, thus promising enormous therapeutic value to human haemophiliacs.⁶⁹

The successes at Roslin shocked the world since it became clear that if adult mammals such as sheep could be cloned, then it was extremely likely that the cloning of adult humans by the same process would also be possible. But for what purpose? And why is

⁶⁶ Wilmut *et al op cit* 232

⁶⁷ A blastocyst is an early embryo at the stage when it is a ball of cells – a morula is the stage preceding the blastocyst. Wilmut *et al op cit* 340, 348

⁶⁸ Wilmut *et al op cit* 233⁶⁸ Report by the U.K. Human Genetics Advisory Commission (HGAC) *Cloning Issues In Reproduction, Science and Medicine* (1998) 3 published on the internet at http://www.dti.gov.uk/hgac/papers/papers_d.htm

⁶⁹ Report by the U.K. Human Genetics Advisory Commission (HGAC) *Cloning Issues In Reproduction, Science and Medicine* (1998) 3 published on the internet at http://www.dti.gov.uk/hgac/papers/papers_d.htm

human cloning such a controversial issue? A brief account of the purposes of human cloning will be discussed next. The controversies will be explicated in Chapter II.

1.4. Purposes of Human Cloning

The purposes of human cloning fall into two main areas involving different procedures, each under the ambit of human cloning, namely reproductive and therapeutic cloning.

- a) **Reproductive human cloning** – which involves the production of an embryo genetically identical to another human individual, with the aim of bringing the embryo to term, thereby producing a child. Apart from the reproductive purpose this method has indirect therapeutic value in that an individual could, for example, be cloned in order to provide bone marrow for an existing child, with greater certainty of success than in the Ayala case.⁷⁰ In this case 18-year-old Anissa Ayala, diagnosed in 1988 with myelogenous leukaemia, required a bone marrow transplant if she were to have any chance of surviving. Unable to secure a donor her 42-year-old mother and 45-year old father (who had to undergo a vasectomy reversal) deliberately had another child in the hope of securing a good tissue match even though statistically they had only a 25%⁷¹ chance of success.⁷² Marissa Ayala was born in April 1990 and fourteen months later the bone marrow transplant was performed successfully against all odds⁷³. A clone of the daughter would have ensured a perfect match.

⁷⁰ James Rachels 'When Philosophers Shoot from the Hip' in H.Kuhse and P. Singer (eds) (1999) *Bioethics* 573-5; Lee M. Silver *op cit* 110-112, but widely reported in many other discussions of cloning and reproduction

⁷¹ Silver *op cit* 111

⁷² *ibid*

⁷³ *ibid*

b) **Therapeutic cloning** – which does not involve the creation of genetically identical individuals. Here the human embryo is not brought to term but its development is controlled. This process is halted when the manipulated egg has developed sufficiently to provide primitive stem cells, which can then be stimulated in such a way as to cause them to differentiate into different tissue types or organs (such as the liver or pancreas or even spinal cord tissue).⁷⁴ These can then be used for replacement of damaged or diseased tissues or organs. These procedures are particularly useful in circumventing rejection problems since in many instances cells can be donated by the person requiring tissue. These cells can then be cultured and forced to develop into the required tissue or organ. Another therapeutic benefit would allow the circumvention of certain mitochondrial diseases especially prevalent in older women.⁷⁵ Here the nuclei from the donor embryonic cells could be placed into the cytoplasm⁷⁶ of another woman with normal mitochondria, in this way allowing the diseased mother to give birth to her own child. The birth of Polly has been the forerunner of gene therapy with development of the ability to insert or delete genes in the treatment of disease.⁷⁷ (The morality of genetic enhancement lies beyond the scope of this paper.) These techniques have enormous potential value for human medicine with the ultimate prospect of providing immunologically compatible tissues for the treatment of degenerative diseases of vital organs such as the heart, liver, pancreas, kidneys or cerebral tissue, as well as providing skin and bone for repair. There are even prospects that nerve cells which at present do

⁷⁴ J.Groopman (2002) 'The Talk Of the Town: Science Fiction' in *The New Yorker* (2 April 2002) 1 published on the internet at: www.newyorker.com/PRINTABLE/?talk?020204ta_talk_groopman

⁷⁵ Pence (1998) *op cit* 17-18 Mitochondrial changes later in life are currently thought to have possible links to Alzheimer's and Parkinson's disease among others. See also U. Schuklenk and R. Ashcroft (2000) 'The Ethics of Reproductive and Therapeutic Cloning (Research)' *Monash Bioethics Review* (2000) 19(2):34-45 published on the internet at: www.wits.ac.za/bioethics/genetics.htm

⁷⁶ Material of the cell surrounding the nucleus: Wilmut et al *op cit* 343

⁷⁷ See above Section 1.3

not divide may eventually be reconstructed, providing hope for the Christopher Reeves's of this world.⁷⁸

Because the distinction between these two forms of cloning is not absolute and has been criticised as somewhat arbitrary, the report of the Human Genetics Advisory Commission recommends that therapeutic cloning be termed 'Therapeutic Use of Cell Nucleus Replacement (CNR)' ⁷⁹ thus eliminating the stigma associated with 'cloning' and not involving the creation of genetically identical individuals. Were CNR to be allowed while reproductive cloning is banned, this would disallow a scenario such as that proposed above in a situation similar to that of the Ayala family.

Ian Wilmut argues that therapeutic benefits constitute the most important reason for research into cloning and rejects reproductive cloning on social and ethical grounds (with dubious reasons, as it will be argued below), as well as in terms of the present practical shortcomings, with risks of deformities and miscarriages,

In fact, both reproductive and therapeutic procedures are controversial, but the focus in this paper is on reproductive cloning; the debates surrounding therapeutic cloning will not be discussed at any length. Suffice it to point out that the chief objection to therapeutic 'cloning' or CNR is that the research involves the use of human embryos ⁸⁰. This raises the spectre of all the traditional debates about abortion, pro-life vs pro-choice, the moral and ontological status of the foetus, whether or not the foetus is a human being with a right to life, etc. Kantian arguments have been put forward, especially in terms of his injunction that we should treat all individuals as an end, and never as a means only. Should we thus reject the creation of human cells for spare cell lines? But are these cells individual human beings? In these terms one would also outlaw abortion even where the life of the mother is at stake since this would be treating the foetus as a means only. That

⁷⁸ Groopman *op cit* 1

⁷⁹ HGAC *op cit* 12

⁸⁰ See discussion in Chapter II

is, aborting the foetus would be using the foetus (a human being?) as a means to save the life of another human being, and would not be respecting it as an end in itself. Several countries have, however, followed the recommendations of the HGAC, which suggested that research on human embryos up to 14 days of development could be permitted. This is in fact licensed by the U.K. Human Fertilisation and Embryology Act 1990. 14 days is the stage of development which precedes the 'primitive streak' stage at which the development of individual embryos is established and cell determination for the future foetus sets in.⁸¹ The question as to whether or not such a cut off point should be extended will not be explored, but generally embryo research has gained momentum world-wide and attempts to ban it, for example in the United States of America and the United Kingdom,⁸² have failed. In addition abortion laws have been widely liberalised in South Africa⁸³ and internationally and in terms of this it would be inconsistent to deny research on early embryonic cells. Even Leon Kass⁸⁴ and Gilbert Meilander⁸⁵, two of the most outspoken critics of human cloning, express some support for cloning of embryos for research, at least on pre-implantation embryos up to 14 days.

Since one of the controversial issues surrounding cloning is whether or not it is ethical to produce an 'identical copy' of a person, which may then be seen as a threat to one's individuality or 'right to an open future'⁸⁶, this chapter will conclude with an analysis of the degree of identity of clones.

⁸¹ *ibid*

⁸² *ibid*

⁸³ Choice on Termination of Pregnancy Act 92 of 1996

⁸⁴ Kass *op cit* 34-36

⁸⁵ Gilbert Meilander 'Begetting and Cloning' in G.E. Pence (1998) (ed) *op cit* 43-44

⁸⁶ Hans Jonas (1974) *Philosophical Essays: From Ancient Creed to Technological Man*; Joel Feinberg (1980) 'The Child's Right to an Open Future' in W. Aiken and H. LaFollette *Whose Child? Children's Rights, Parental Authority and State Power*, both cited in A. Buchanan, D.W. Brock, N. Daniels & D. Wikler *From Chance to Choice: Genetics and Justice* (2000) 1997

1.5. How identical are clones?

As Seidel points out,⁸⁷ the most identical clones are ‘natural clones’ – identical (monozygotic) twins, triplets etc. - who are born with the same genetic structures, identical chromosomal DNA and, what is significant, who are gestated by the same mother in the same timeframe. Any artificially produced clones will be less identical, but the fact is that clones are never absolutely identical. Even if clones share the same DNA structure, in complex organisms like mammals mutations occur randomly during development. As Wilmut et al point out,⁸⁸ Dolly is not an absolute replica of the adult ewe that provided her first cell, but she is merely a genomic or DNA clone that is less identical than identical twins would be. What are the reasons for this?

There are three main phenomena that account for differences among clones, namely environmental influences, cytoplasmic differences and epigenetic differences.⁸⁹ Each of these will be briefly explained but their moral significance will be explored in the next chapter.

1. Environmental influences

Even in the case of genetically identical natural clones the environment plays a role. Identical twins may share a common uterus, but each occupies a different space, their birth weights almost always differ and after birth they are subject to differing environmental influences. These differences will be even more significant in the case of artificially cloned individuals that are gestated in a different uterus and born at a different time and place.

⁸⁷ Seidel *op cit* 17

⁸⁸ Wilmut et al *op cit* 59

⁸⁸ Seidel *op cit* 18

2. Cytoplasmic differences

Standard mammalian cells comprise of a nucleus, the 'yolk' and the 'white', called the cytoplasm. The method of cloning used by Wilmut et al in the production of Dolly - Somatic Cell Nuclear Transfer - probably the most useful method at present, produces an identical chromosomal genetic component but with different cytoplasmic components, in particular mitochondria. Mitochondria are tiny organelles that provide energy to cells. They are inherited maternally since in this method of cloning only the nucleus is transferred and hence cloned.⁹⁰ The receiving cell is enucleated but still retains the cytoplasm and mitochondria, which act as an intra-cellular environmental influence. They comprise only a tiny percentage of the total number of cells – far less than 1% - but it is argued that this is sufficient to account for differences between cloned organisms. Molecular biology shows this clearly in the case of hinnies and mules, crosses of horses and donkeys. A hinny is mothered by a donkey (a jenny) and sired by a horse; a mule is mothered by a mare but sired by a jack. Mules have horse mitochondria whereas hinnies have donkey mitochondria.⁹¹

3. Epigenetic difference

This refers to the chance outcomes of the random motion of molecules within cells. An example is that of differences in hair colour, which is created by melanin.⁹² The migration of melanocytes⁹³ which invade the hair follicles producing colour is sometimes prevented by secretions and this manifests itself in horses, for example as white 'socks' or tails or

⁹⁰ *ibid*

⁹¹ *ibid*

⁹² Seidel *op cit* 19

⁹³ *ibid*

stripes of white on heads. Similarly, the distribution of colour in cloned sheep or cattle may differ. Colouring thus is epigenetic and the migration pattern of melanocytes causing different colouring is dependent on chance.⁹⁴ (Grey hair, however, is the result of the death of melanocytes in hair follicles, not random movement.)

Another example of a chance outcome of movement of molecules is that of random X chromosome inactivation in females.⁹⁵ All females inherit two X chromosomes, one from the mother, one from the father in every cell, but only one of these is genetically active, a matter of chance. This also may account for colour differences. The result of this is that naturally occurring female ‘identical’ twins are less identical than males, and the same would apply to artificially produced female clones.

The announcement in February 2002 of the birth of ‘Copycat’,⁹⁶ a tortoiseshell kitten cloned from an adult cat, ‘Rainbow’ using the same process as was used to produce Dolly, is indicative of this phenomenon. Despite having identical genes to Rainbow, Copycat has slightly different markings on her cream and tortoiseshell coat.⁹⁷

Since many who object to cloning do so on the basis of their belief that clones are an absolute replica of the original person alike in all respects and therefore lacking in individuality or uniqueness, an understanding of the above phenomena reveals an important misconception pertinent to questions concerning the morality of cloning. This will be addressed in depth in Chapter III.

⁹⁴ *ibid*

⁹⁵ *ibid*

⁹⁶ Cape Argus February 15 2002. Copycat was created in a laboratory at the Texas A&M University, financed by John Sperling, owner of the company Genetic Savings and Clone.

⁹⁷ *ibid*

1.6. Conclusion

In this chapter the techniques, history and purposes of cloning have been outlined since a discussion of the morality and legality of human cloning is dependent on an understanding of these issues. It will be argued in subsequent chapters that failure to understand the nature of cloning underlies many of the negative arguments. In addition it is necessary to have some understanding of traditional ethical theories and principles, which provide the context for analysing these arguments. These theories and principles will be the focus of the next chapter.

Chapter II

2. Ethical Theories and Principles

2.1. Theoretical background

Just as in natural science there has been a continuing search for one overarching theory that will explain the nature of reality – be it universal gravitation, relativity theory, quantum physics etc. – so too the history of ethics reveals a search for a single theory that will enable us to make moral decisions. A similar search has been a feature of biomedical ethics, a term coined only in the 1970's by Van Rensselen Potter⁹⁸, but an issue that has been a concern of medical practitioners since the science or art (?) of healing was first practised. In fact the first known ethical code and the first known serious attempt to come to grips with the unique problems raised by the practice of medicine was the Hippocratic Oath written in the 5th century B.C.⁹⁹ But just as in science theories are replaced by more adequate theories, Newtonian science by Einsteinian Relativity Theory and Quantum Mechanics etc, so too are they replaced in the field of ethics. In medicine Galenic medicine¹⁰⁰, with its belief in the four humours, blood, phlegm, yellow bile and black bile as the cause of disease, excess of any of these upsetting the natural balance, was replaced by a belief in viruses and bacteria. Likewise, the history of ethics is one of continuing theoretical conflict. And just as in science a different theoretical framework produces a different way of seeing or understanding the world, so in ethics different theoretical perspectives lead to different views as to what constitutes the difference between right and wrong, and what we ought or ought not to do. Thus Hippocrates rejected abortion and euthanasia as immoral¹⁰¹ but today some forms of both are at least sometimes accepted as moral and even legal.

⁹⁸ Kuhse and Singer (1999) *op cit* 1

⁹⁹ T.A. Mappes and D. DeGrazia (2001) *Biomedical Ethics* 66

¹⁰⁰ Roger Smith *The Fontana History of the Human Sciences* (1997) 56-61

¹⁰¹ Hippocratic Oath Clause 4 'I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to this effect. Similarly I will not give to a woman an abortive remedy.' Translated by Ludwig Edelstein in O. and C.L. Temkin (eds) (1967) *Ancient Medicine: Selected papers of Ludwig Edelstein* 6

In what follows a brief account of some of the most influential groups of ethical theories will be given.

2.1.1. Rule-based Ethical Theories

Two theories have dominated western moral thought since the 18th century, namely Utilitarianism¹⁰² and Kantian Deontology.¹⁰³ Both are rule-based in that they attempt to provide rules in terms of which we can decide what is the right thing to do – that is, they attempt to define moral action.

2.1.1.1. Utilitarianism

Utilitarianism is a form of consequentialism that emphasises the importance of consequences. The right action is that which produces the greatest human happiness and well-being – the so-called principle of Utility or Greatest Happiness Principle.¹⁰⁴ In other words, when faced with a moral dilemma perform the action that will bring about the best overall consequences in terms of providing the greatest happiness or desire satisfaction for the greatest number of people, democratically regarding each person involved as of equal importance.¹⁰⁵ The moral acceptability of human cloning will thus be determined by whether or not it will produce the greatest overall happiness, primarily taking into account the desires of those who initiate cloning and those who are subsequently cloned. A form of situational ethics, consequentialism allows that any of our generally accepted moral rules – telling the truth, keeping promises, respecting confidentiality, even respecting life – may be overridden if doing so results in the best overall consequences. There has however been considerable disagreement among utilitarians as to what

¹⁰² Most notable proponents are Jeremy Bentham (1789) *Introduction to the Principles of Morals and Legislation* and John Stuart Mill (1861) *Utilitarianism*

¹⁰³ The foremost proponent is Immanuel Kant (1785) *Groundwork for the Metaphysics of Morals* published on the internet at www.swan.ac.uk/poli/texts/kant/kantian/htm.

¹⁰⁴ Jeremy Bentham (1789) *op cit* published on the internet at: www.utm.edu/research/iep/b/bentham.htm

¹⁰⁵ *ibid*

constitutes the best consequences or greatest happiness¹⁰⁶, apart from the general difficulty of predictability of consequences. Thus even when utilitarians agree that actions are to be judged in terms of consequences, they may disagree on what the best consequences actually would be. Applied to human cloning utilitarians would debate the issue in terms of whether or not allowing human cloning would produce the best consequences taking into account all those involved in the process, as well as the possible effects on society at large.

2.1.1.2. Deontology

Deontologists, on the other hand, believe that consequences alone are not sufficient for deciding moral worth. Duty-based, deontology involves the claim that we all, by virtue of being human beings with the capacity for rationality, have obligations and duties which must be carried out.¹⁰⁷ Moreover for Immanuel Kant these duties are absolute and must be fulfilled regardless of the consequences. These include both general duties (such as telling the truth, keeping promises, respecting other people, not doing to others what you wouldn't like them to do to you) and specific duties.¹⁰⁸ For example, by virtue of one's role as a medical practitioner or a health care worker there are specific duties to one's patients, such as respecting their autonomous choices, not harming them, acting in ways that will best benefit them and so on. Kant formulated his theory in terms of what he called the Categorical Imperative, the principle or maxim that determines what must be done. He offered three variations, the first stressing the importance of *universalisability* - in keeping with our notions of justice and fairness; if an action is right in one situation it is always right in a similar situation. The second formulation emphasises the importance of *respect for humanity*: 'Act so that you treat humanity, whether in your own person or that of another, always as an end and never as a means only.'¹⁰⁹ The right to human dignity, a core non-derogable right in the Bill of Rights of the South African

¹⁰⁶ cf. The opposing views of Jeremy Bentham *ibid* and John Stuart Mill *On Liberty* (1859) and *Utilitarianism* (1861) published on the internet at: www.knuten.liu.se/~mbjoch509/works.mill

¹⁰⁷ The term derives from the Greek *deon* meaning 'duty'.

¹⁰⁸ Kant *op cit*. All references are to this text.

¹⁰⁹ *ibid*

Constitution¹¹⁰, (as well as in several international human rights instruments)¹¹¹ has its origins in this formulation. The third formulation emphasises the importance of *autonomy*.¹¹² The second and third formulations are seen as crucial in biomedical ethics.

Modern deontological theories are generally based on the notion of human rights. According to these theories each person has certain rights that cannot be overridden purely in terms of a utilitarian emphasis on consequences. Many of these are entrenched in the South African Constitution and the Bill of Rights¹¹³ and these include a right to life¹¹⁴, a right to human dignity¹¹⁵, a right to own property¹¹⁶, liberty rights¹¹⁷, the right to health-care¹¹⁸ and the right to control one's reproductive rights¹¹⁹. These rights give rise to a number of questions: for example, is the right to clone a human being a reproductive right? Does the right of a scientist to clone a human being fall under the ambit of a scientist's right to freedom of research? What do we do when rights clash? Are there any absolute rights? The right to life? The right to human dignity? But rights go hand in hand with obligations – while my right to life entails that I respect everyone else's right to life, does my right to life entail that everyone is obligated to save my life? If I need a kidney transplant, does this mean that someone is obligated to donate his or her kidney to me? And if I have reproductive rights does this entitle me to use any method of my choice to reproduce, including cloning? Or does the law limit this right? For example can a man rape a woman to satisfy his right to reproduce?

There is no question that rights are important, but rights alone as a basis for resolving moral dilemmas often yield more problems than they solve, largely because of the

¹¹⁰ Constitution of the Republic of South Africa Act 108 of 1996 (1996 Constitution) Section 10 Bill of Rights.

¹¹¹ e.g. Fiftieth Anniversary of the Universal Declaration of Human Rights Article 1: 'All human beings are born free and equal in dignity and rights'. Published on the internet at: www.un.org/rights/50/decla.htm

¹¹² Kant *op cit*

¹¹³ Constitution of S.A. Chapter 2. Bill of Rights.

¹¹⁴ *ibid* Section 11

¹¹⁵ Section 10

¹¹⁶ Section 25

¹¹⁷ Sections 12, 13, 15, 16 etc.

¹¹⁸ Section 27

¹¹⁹ Section 12 (2) a.

adversarial nature of many rights. Although rights are at the basis of liberal democracy, they are by no means universally acknowledged. Bentham, for example, described rights as ‘nonsense on stilts’¹²⁰ and where utilitarians defend rights they do so largely on the basis of their contribution to the maximisation of human well-being, thus treating rights as merely instrumental and to some degree merely tentative. Devenish illustrates this in his discussion of the jurisprudential justification of freedom of speech, whereby an instrumental approach acknowledges rights merely as a means to some end - and therefore tentative; if the ends change so would the means. On the other hand a purposive approach regards the right in question as an end in itself.¹²¹

2.1.2. Character-based Ethical Theories

A second group of ethical theories focuses on the kind of people we should be, what it is to have a good character, and what are the appropriate attitudes we should exhibit in our relationship with other people, more specifically in the doctor-patient relationship. The origins of character-based ethics date back to Aristotle¹²², but today these ideas have emanated from feminist writings that emphasise the view that women speak ‘in a different voice’.¹²³ These theorists hold that a moral system that focuses only on rules and justice is ‘cold’ and inadequate.¹²⁴ It masks inequalities in the name of justice; it oversimplifies human relationships and understates the importance of emotions like love, care and compassion. However, these sorts of theories cannot be ‘stand alone’ theories. It is possible to have the best will in the world, but one also needs a notion of what is the right thing to do or what rules to follow. This is illustrated by the saying, ‘The road to hell is paved with good intentions!’ Feminists argue that the best moral theory must put care on an equal footing with justice.¹²⁵

¹²⁰ Jeremy Bentham ‘Anarchical Fallacies’ in J. Waldron (ed) *Nonsense Upon Stilts* (1987) 53

¹²¹ G.E. Devenish (1999) *A Commentary on the South African Bill of Rights* 189

¹²² Aristotle (350 B.C.) *Nicomachean Ethics*, translated by W. D. Ross, published on the internet at: www.msu.org/intro/content_intro/texts/aristotle/aristotle.html

¹²³ Carol Gilligan *In a Different Voice* (1982)

¹²⁴ Annette Baier ‘The Need for More than Justice’ (1988) *Canadian Journal of Philosophy* reprinted in J. Olen & V. Barry (eds.) *Applying Ethics* (1992) 39-46

¹²⁵ Gilligan; Baier *ibid*

The above examples illustrate the contentious nature of ethics and ethical theories and suggest that so-called moral truths are only relative in that they are dependent on theories that are continually being replaced. If so, is there any point in searching for ultimate answers? Will we not always see things differently in accordance with our differing theoretical frameworks, beliefs, religious perspectives, or cultures? And if this is the case will we ever reach agreement on the question of whether human cloning is morally justifiable?

It is clear, however, that even though there may be conflict between theories or perspectives, there are fundamental areas of common agreement where theories overlap, and the task of the moral philosopher has been to find these common areas - or invent them by new kinds of interpretation, or application of theories. Thus, even where there are competing theories, we do not merely dismiss them, since even if no theory has up to now (or ever can) provide absolute answers, nevertheless the best theories still may have something useful to say when dealing with moral problems. An analogy can be drawn with science – quantum physics and relativity theory may provide a more accurate picture of the natural world, but we still use Newtonian principles when we want to build a bridge. Also, conflicts may often arise not because we hold different moral views, but because there is factual disagreement. This is particularly pertinent to the issue of human cloning since many disagreements are based on misconceptions about the nature of cloning,¹²⁶ a factual disagreement that can be resolved.

2.2. Ethical Principles

A seminal work in biomedical ethics is Beauchamp and Childress' *Principles of Biomedical Ethics*.¹²⁷ Beauchamp and Childress argue that while no single theory is adequate as a stand-alone position, nevertheless the best theories have something important to say and there are many insights common to all theories. They propose as a

¹²⁶ For example, if it is a fact that clones produced by Somatic Cell Nuclear Transfer are not identical, then this defeats one of the primary objections to cloning, namely that it is a threat to human individuality. See discussion in Section 1.5 and the next chapter.

¹²⁷ Tom L. Beauchamp and James F. Childress *Principles of Biomedical Ethics* (1994)

framework for ethical decision-making what they call a 'common-morality principle based theory',¹²⁸ in which four principles form the central elements. These then function as a basis for determining what we should do when faced with moral conflicts. These principles are: the principles of respect for autonomy, non-maleficence, beneficence, and justice.¹²⁹

The principle of respect for autonomy - self-rule - involves recognition of patients as rational free human beings who should, given adequate information, be able to make their own decisions regarding medical treatment. Crucial is the notion of informed consent and what this entails - more than just a signature on a form, but rather adequate information and genuine understanding of what is involved if consent is to really be informed. Essential to the exercise of autonomy is that the self must be free from coercive controlling interference by others, as well as from personal limitations (such as inadequate understanding) that prevent us from making meaningful choices. This principle also places emphasis on liberty rights, the right to human dignity, privacy, confidentiality as well as the importance of individual choice. This principle is central to deontological theories, but Mill also saw it as an essential aspect of utilitarianism, arguing that autonomy is essential for happiness.¹³⁰ Applied to human cloning it suggests that individuals should have the autonomous right to choose cloning as a method of reproduction, subject to limitations imposed by the other three principles.

Non-maleficence and beneficence are clearly linked: Non-maleficence involves the negative injunction, 'primum non nocere' – first do no harm¹³¹. While there is universal moral agreement that harm should be avoided the problem arises in deciding, (as with happiness), what constitutes harm. Beneficence entails the positive injunction: do good, act for the benefits and best interests of your patients¹³², (again, how do we decide these

¹²⁸ *ibid* 37

¹²⁹ *ibid*

¹³⁰ Mill *op cit*

¹³¹ Beauchamp and Childress *op cit* 189-249

¹³² Beauchamp and Childress *op cit* 259-319

issues?) while the principle of justice is concerned with notions of fairness, desert and equality, for example, equality of access to health care.

The principle of justice has particular implications for policy making. Questions raised by the principle of justice include: Do we have a right to health care? And if so is it the obligation of government to provide it? And even if cloning is acknowledged as a reproductive right, should scarce medical resources be allocated to satisfy this right? Beauchamp and Childress argue that a just health care system is one that at least recognises an enforceable right to a decent minimum of health care that incorporates standards of both equality and utility¹³³. Is human cloning defensible in these terms?

2.3. Conclusion

In the following two chapters, normative arguments against and in favour of reproductive human cloning will be examined in detail, against a background of the above theories and principles. It will be shown that, useful as these principles may be, inevitably contradictions arise when applied to medical cases in general and cloning in particular. An attempt will be made to evaluate and balance these contradictions. 'Human cloning' as it will be used in this section is the process of somatic cell nuclear transfer to create a human embryo that has the potential to be implanted into a woman's uterus and develop into a child.¹³⁴

¹³³ *ibid* 318

¹³⁴ Christine Willgoos 'FDA regulation: an answer to the questions of human cloning and germline gene therapy' *American Journal of Law and Medicine* (Spring 2001) published on the internet at: www.findarticles.com/0/m6029/1...article.jhtml 2.

CHAPTER III

3. Normative arguments against reproductive human cloning

Two kinds of moral argument are put forward in opposition to and in defence of human cloning. The first raises questions of moral and human rights, supporters of cloning claiming that a prohibition on cloning would violate fundamental rights, while opponents claim that cloning is itself a violation of these rights. The second kind of argument used by both sides focuses on harms and benefits that may result.

The discussion will begin with the moral arguments against human cloning and responses to them. Brock, in a paper commissioned for the NBAC, suggests that two main questions should be asked:¹³⁵

- What individual or social harms might human cloning produce?
- Would the use of human cloning violate important moral rights?¹³⁶

Since these questions overlap to some degree I will begin with a discussion of the nature of possible harms and will include the question of moral rights violations where relevant.

3.1. The Question of Harm

Robertson suggests that most objections to human cloning focus on the harm to children who are given the same DNA as an existing or previously existent individual.¹³⁷ Whether the harm feared is physical safety, individuality, autonomy, objectification, instrumentalisation or kinship problems, or even the offence or repugnance that some feel at this 'abnormal' method of reproduction, opponents of cloning argue that the resulting

¹³⁵ Dan W. Brock 'Cloning Human Beings: An Assessment of the Ethical Issues Pro and Con' paper commissioned for the *NBAC Report: Cloning Human Beings* (note 14 above) (June 1997).

¹³⁶ The inverse of this question - would the refusal of human cloning violate important moral rights? - will be addressed in the next chapter. If, as I shall argue, it would, then this raises sceptical questions about the nature and application of such moral rights.

¹³⁷ Robertson *op cit* Section 2.1

child would be so badly and irrevocably harmed that it would be better that such a child should not exist at all. This is the so-called problem of wrongful life¹³⁸ in terms of which it is claimed that the child's existence would be one of such suffering that it would be better not to be born at all.¹³⁹ The question then is: Is being born with the same genome or DNA as another likely to have devastating consequences sufficient to prevent its existence or justify its non-existence?

These harms will now be examined in order to evaluate whether they are indeed sufficient to justify a prohibition on human cloning

3.1.1. Physical harm

In accordance with the principle of non-maleficence, as well as with utilitarian principles, - actions should produce a greater balance of good than harm - one of the primary reasons for rejecting human cloning is in terms of possible harms, physical or psychological, individual or social. The possibility of physical harm to individuals will be addressed only briefly, as the main focus of this paper is on ethical rather than practical issues. It should be noted that the recommendations of the NBAC, in imposing a moratorium on human cloning for a period of five years, relied almost entirely on the aspect of physical harm,¹⁴⁰ although most of the opposition to the generation of cloned offspring has centred on ethical issues of identity, individuality, autonomy, expectations of sameness and possible psychological impact. The NBAC requested responses from scientific organisations to human cloning research and use, and of the 32 responses received, none called for federal or state legislation banning either cloning research or the cloning of an entire human being.¹⁴¹ The view was expressed, however, that the technology involved was at the time too new, the efficiency of nuclear transfer so low and the chance of

¹³⁸ Robertson *ibid*;

¹³⁹ A physician who practices cloning resulting in the birth of a damaged child could be charged with negligence according to the wrongful life cause of action – see Dieter Giesen (1988) *International Medical Malpractice Law* Section 50 'Artificial Reproduction' 663

¹⁴⁰ NBAC Report Chapter 6 'Recommendations of the Commission' *op cit* 108

¹⁴¹ Elisa Eiseman *Views of Scientific Societies and Professional Associations on Human Nuclear Transfer Cloning Research* (NBAC commissioned paper) (1997) *op cit* 18.

abnormal offspring so high that 'experimentation of this sort in humans is premature and, therefore, currently unthinkable'.¹⁴² Wilmut himself opposes human cloning largely on the grounds of physical risks¹⁴³, primarily to the cloned embryo but also to the gestating woman as well as the donor of the nucleus. How valid are these arguments?

There appears to be little physical risk to the donor of the cell nucleus to be transferred,¹⁴⁴ and moreover informed consent could and should always be obtained, thus involving no infringement of the principle of respect for autonomy. As far as the recipient is concerned if there are any risks these would be comparable to risks faced in *in vitro* fertilisation (IVF) procedures, a risk which is currently accepted. And again informed consent would be mandatory.¹⁴⁵ What are the risks to the cloned embryo itself?

Silver points out that the claim that Dolly was produced after 276 failed attempts is somewhat misleading.¹⁴⁶ In fact only 29 cells became embryos after fusion. The embryos were introduced into 13 ewes but only one became pregnant, resulting in the birth of Dolly as a healthy lamb that has subsequently given birth through normal sexual reproduction to four healthy lambs.¹⁴⁷ Thus one way of viewing these statistics is to see this as achieving a 100% record – one healthy lamb out of one pregnancy! What is of course unknown at present is whether the methods used in sheep will produce the same results in human beings, and a great deal more research is needed. Nevertheless, in attempting to assess the feasibility of human cloning, these statistics should also be compared with other methods of artificial reproduction, such as IVF. Certainly statistics show that prior to the birth of the first test-tube baby, Louise Brown, in 1978, Steptoe and Edwards experimented for over ten years to perfect the process of fertilisation in a laboratory dish and dozens of attempts were made to introduce embryos into women

¹⁴²Eiseman *op cit* C-5

¹⁴³ Wilmut et al *op cit* 316. 'The universal issue is that of risk.'

¹⁴⁴ i.e. when the donor is living; in the case of a deceased donor this does not apply.

¹⁴⁵ Buchanan, Brock et al *op cit* 199

¹⁴⁶ Silver *op cit* 104

¹⁴⁷ Roslin Institute Online News Release PN 99/01 'Three New Lambs for Dolly: Brothers and Sister for Bonnie' published on the internet at: www.ri.bbsrc.ax.uk/library/press/pn99-01.html

before it was successful.¹⁴⁸ Silver states that this proportion was less than the 1 in 13 reported in the Dolly experiment.¹⁴⁹

Another concern is that cloned children will be more prone to genetic problems than natural children. Silver discusses three common classes of genetic defects, suggesting that this fear, too, is exaggerated.¹⁵⁰ The most prevalent type of genetic abnormality results from an abnormal number of chromosomes, of which Trisomy 21, which is responsible for Down syndrome, is most common.¹⁵¹ Mistakes that occur when the genetic material is reduced by half during the process of egg or sperm formation are responsible for these defects.¹⁵² With cloning however there is no reduction in genetic material and the chance of such mistakes is in fact smaller. Another common cause of genetic abnormalities is that of the inheritance of two mutant or recessive copies of a gene carried by both parents. Severe diseases that result include Tay Sachs disease, sickle cell anaemia, cystic fibrosis and phenylketonuria (PKU).¹⁵³ These can be avoided with cloning after proper screening. Less commonly, a new mutation can occur in the genetic material of the egg or sperm resulting in birth abnormalities but Silver argues that the probability of mutation in the donor nucleus has the same low probability.¹⁵⁴

A concern raised by Harold Varmus, director of the National Institute of Health in the United States of America, is that an adult cell from which a person is cloned could have inherited genetic mutations during the ageing process, which could give the resulting clone an increased predisposition to cancer or other diseases of ageing.¹⁵⁵ Dolly's genes came from a six-year-old ewe and after five or so years she seemed to have aged quite normally, but recently it has been reported that she has arthritis, a disease of ageing.¹⁵⁶

¹⁴⁸ Silver *op cit* 68

¹⁴⁹ Silver *op cit* 104

¹⁵⁰ Silver *op cit* 103-104

¹⁵¹ Buchanan, Brock et al *op cit* 243

¹⁵² *ibid*

¹⁵³ *ibid*

¹⁵⁴ *ibid*

¹⁵⁵ Buchanan, Brock et al *op cit* 199

¹⁵⁶ Again one could ask, to what extent is enhanced risk sufficient to warrant a ban. Many medical procedures, such as amniocentesis and other forms of pre-natal testing carry risks, yet mothers are given the choice in having these tests where indicated. How are we to decide what constitutes too great a risk?

Wilmut does not believe that the fact that the telomeres on her chromosomes have shortened (indicative of ageing) will appreciably affect her lifespan, but 'cannot foresee how a longer-lived animal like a human being would be affected'.¹⁵⁷ He concedes that at present the question of the risk of cloning people is unanswerable, there being too many unknowns.¹⁵⁸ It seems too soon to say whether there are enough unavoidable risks to make cloning unethical, but it is clear that a great deal of research - both on animal cloning and into potential risk to human beings - is required before decisions can be made either way. Sir Colin Berry¹⁵⁹ has argued that 'in the context of the safety of our day-to-day environment we have become highly risk-averse',¹⁶⁰ to the detriment of society. We cannot, he claims, demonstrate that something is safe; all we can show is that some thing or activity 'has not yet shown evidence of the production of harm'.¹⁶¹ Overemphasis on both benefits and risks may result in harm, and to avoid this Berry exhorts us to exercise caution, avoiding uncritical belief.¹⁶² He points out, however, that such caution cannot include an 'indemnity - an assurance that no-one will come to harm from any action',¹⁶³ and suggests, further, that we should 'develop a collective tolerance for individual damage, if we are not inadvertently to produce injury...by overzealous concern for the individual'.¹⁶⁴ If we support this position, then the mere possibility of physical harm, which may in future be preventable, may not be sufficient to justify a ban on human cloning. Are there other reasons that justify such a ban?

¹⁵⁷ Wilmut et al *op cit* 318

¹⁵⁸ Wilmut et al *op cit* 319

¹⁵⁹ Professor of Morbid Anatomy and Histopathology, University of London, England.

¹⁶⁰ Sir Colin Berry (2001) 'Risk, Science and Society' Address to the Royal Institution, London published on the internet at: <http://www.spiked-online.com/Articles/00000002D29C.htm> 1-14

¹⁶¹ Berry *op cit* 2

¹⁶² *ibid*

¹⁶³ Berry *op cit* 1

¹⁶⁴ Berry *op cit* 12

3.1.2. Psychological harm - cloning as a violation of moral rights - to individuality, identity and autonomy, and the right to an 'open future',¹⁶⁵

The rise of democracy in the 20th century has been marked by concerns with the importance of the rights of the individual as a self-determining being who should be able to live in freedom constrained only by the rights of others in a democratic state. Accompanying this has been an emphasis on the importance of individuality and authenticity and as states have become increasingly multicultural great importance has been given to the question of recognition of those with whom we live. It is almost universally accepted that a denial of recognition, as occurred in apartheid South Africa, where certain groups of people were denied their human rights, is an oppressive infringement of human dignity. Debates surrounding issues of multiculturalism have given rise to acknowledgement of the fact that, in order to recognise people as individuals worthy of our respect, they must be recognised not only for what is shared in common with all other human beings, (e.g. that we are sentient, rational members of the species *homo sapiens*) but also for what makes us different, unique and special.¹⁶⁶ One can see this as a celebration of difference. No wonder, then, that the announcement of the cloning of Dolly in 1997, seen as 'identical' to her genetic mother, caused shockwaves around the world – what seemed to be threatened were our very notions of personal identity as unique and free individuals. The possibility of human cloning was seen as posing a threat to our notions of individuality, autonomy, and personhood.

The question to be examined is whether or not cloning can be seen as an infringement of autonomy rights understood as the right to self-determination, the liberty to choose one's future, and the right to one's own unique individuality and personal identity. It has been argued that most objections to human cloning are based on the principle of non-maleficence – 'first do no harm'.¹⁶⁷ These objections rest on the belief that cloning may

¹⁶⁵ H. Jonas *Philosophical Essays: From Ancient Creed to Technological Man* (1974); Joel Feinberg *The Child's Right to an Open Future* in W. Aiken and H. LaFollette (ed) *Whose Child? Children's Rights, Parental Authority, and State Power* (1980) as discussed in Buchanan, Brock *op cit* 197

¹⁶⁶ Charles Taylor 'The Politics of Recognition' in *Philosophical Arguments* (1997) 225-256

¹⁶⁷ See Chapter II Section 2.2

cause irreparable harm, either in terms of physical risks to both the woman who gestates a cloned embryo and to the cloned embryo itself, or in terms of psychological damage to the clone. The latter objection, it is submitted, rests on misconceptions about the nature of cloning and clones, in particular on the mistaken view of identity that is prevalent. Are clones really identical or are they merely similar? How similar is similar enough to cause problems? The kind of identity at stake is not numerical identity, but qualitative identity. As explained in Chapter I, empirical answers can be provided by discussing already known human clones, identical twins, produced when an embryo splits in the uterus, each half developing into a new individual, analogous to cloning by the embryo-splitting technique mentioned above.¹⁶⁸ Wilmut explains that in fact natural identical twins are as identical as it is possible to be, even more so than clones produced artificially especially by means of nuclear transfer.¹⁶⁹ They share the same genetic structure and have the same nuclear as well as mitochondrial DNA, (since they come from the same egg cell), unlike Dolly and her mother who share only nuclear DNA. It is believed that the egg cell contains products of maternal genes that play an important role in early embryonic development.¹⁷⁰ Dolly and others produced by SCNT will have the mitochondrial gene products from the enucleated egg cell and thus are less 'identical' than identical twins. Yet nobody denies personhood or uniqueness to identical twins, even though they share the same genetic make-up. As Richard Dawkins comments:

'Hell's foundations don't quiver every time an identical twin is born. Nobody has ever suggested that identical twins are zombies without individuality or personality. Of those who think anybody has a soul, none has suggested that identical twins lack one. So the new discoveries announced from Edinburgh can't be *all* that radical in their moral and ethical implications.'¹⁷¹

¹⁶⁸ See Chapter I

¹⁶⁹ I. Wilmut, et al *op cit* 300ff.

¹⁷⁰ *ibid*; see also Section 1.52

¹⁷¹ Richard Dawkins 'What's Wrong with Cloning' in *Clones and Clones* Martha Nussbaum & Cass Sunstein (eds) (1998) 56

Yet eminent ethicists such as Kass question – ludicrously, it is submitted – whether a clone can ever be a moral agent!¹⁷² If cloning is seen as a human right's violation, as some claim, because it infringes on personal identity and individuality, are pregnancies resulting in identical twins human rights' violations? Is a unique genome a necessary condition of individuality?

It is clear that the rejection of cloning as a threat to notions of individuality rests on the mistaken view of genetic determinism, or genetic essentialism. According to these positions what human beings are is entirely controlled by their genes; if you have the same genes as another individual then you are identical in the strongest sense of the word. What is completely ignored is the role of the environment in developing human behaviour, ability and even appearance.¹⁷³ In technical parlance, genetic determinism rests on the (false) belief that one's genotype determines one's phenotype.¹⁷⁴ But similarity in genotype does not mean that there will be similarity in phenotype, especially when the cloned individual is reared in a different environment at a different time, as with cloning by SCNT. The same genotype may be expressed in different phenotypes.¹⁷⁵

In fact most of the controversy about cloning should be seen in the context of the old nature versus nurture debate. Identical twins, with the same genes, developing at the same time in the same womb, sharing the same culture, nevertheless grow up to be distinct individuals experiencing different fates, choosing different life paths, despite extensive similarities. The case of Eng and Chang, the original monozygous Siamese twins, is illustrative of this: one had a cheerful disposition, the other grew up to be a morose alcoholic.¹⁷⁶ As Gould points out, identical twins are proof that inevitable differences of nurture guarantee individuality and personhood of human clones, no matter how they are

¹⁷² Leon Kass *op cit* 27

¹⁷³ Richard C. Lewontin 'Cloning and the Fallacy of Biological Determinism' in B. MacKinnon (ed) (2000) *Human Cloning: Science, Ethics and Public Policy* 37-49. Also Seidel *op cit* 18

¹⁷⁴ A phenotype is the physical or behavioural manifestation of a creature as opposed to a genotype which refers to the genes that underpin the phenotype. Wilmut et al *op cit* 350

¹⁷⁵ Wilmut et al *op cit* 350

¹⁷⁶ Stephen Jay Gould 'Dolly's Fashion and Louis's Passion' in M. Nussbaum and C.R. Sunstein (eds) (1998) *Clones and Cloning* 49

produced.¹⁷⁷ Gould offers a discussion of a view put forward by Frank Sulloway¹⁷⁸ that even differences in birth order (including perhaps the very small difference between identical twins) play a significant role in the development of personality and that there are characteristic differences in behaviour between first born and later born children, pointing to the powerful role of nurture. Why then worry about the individuality of children produced by cloning when personhood is guaranteed by differences in nurture in the case of identical twins – natural clones – who are far more similar than scientific clones?¹⁷⁹

Lewontin¹⁸⁰ suggests that most of the hysteria and horror at cloning derives from the ‘pervasive error that confuses the genetic state of an organism with its total physical and psychic nature as a human being’. One of the basic principles of developmental biology is that organisms undergo continuous development from conception to death, and this development is the unique consequence of the interaction of genes in their cells, the temporal sequence of the environments through which these organisms pass, as well as random cellular processes that determine the life/death/transformation of these cells.¹⁸¹ As Lewontin points out, even the most extreme efforts to turn genetic clones into human clones fails. He cites the example of the identical Dionne quintuplets whose parents exhibited a pathological compulsion to force them into the same homogeneous mould right through adolescence, yet their adult lives took quite different career and life paths: three married, one died at 20 from epilepsy, another at 63, two were nurses, one made a career of religion, etc.¹⁸²

The error of genetic determinism is made both by opponents and proponents of human cloning, both basing their arguments on the same false premises. Opponents reject cloning as undermining individuality; proponents may desire to clone in terms of, for example, the possibility of ‘replacing’ a dying child or ‘replicating’ a beloved family member or superstar or genius. But such a belief is a biological absurdity based on the

¹⁷⁷ *ibid*

¹⁷⁸ Frank Sulloway *Born to Rebel* cited in Gould *op cit* 49-53

¹⁷⁹ Stephen Jay Gould *op cit* 49

¹⁸⁰ R. C. Lewontin ‘The Confusion over Cloning’ in McGee (ed) *op cit* 158

¹⁸¹ *ibid*

¹⁸² Lewontin *op cit* 159

false belief that identical genes produce identical people. Kass illustrates the falsity of the belief in identity by posing the question as to what is meant by having 'one's own' child. He points out that whereas a scientist might define 'one's own' in terms of carrying one's own genes, this cannot be decisive since for most infertile men if the sperm used to fertilise one's wife's egg is that of an identical twin who has the same genes, this would not be regarded as one's own in the 'crucially human' sense.¹⁸³

Wilmut explains that genes merely propose possibilities but the environment shapes the final outcome.¹⁸⁴ If one considers a child cloned from his 'father' or her 'mother' they may share the same genes but are at different points of their genetic programme, and at any one point in time functionally they will be very different people. Nevertheless the influence of the genes will be such that there will always be a strong similarity. In fact cloning does produce sets of individuals who can be almost indistinguishable, but they can also be noticeably different, particularly in the case of genomic twins who may differ from one another more than identical twins, either natural or produced through embryo-splitting. But even if they share many features, identical twins born at the same time are clearly two separate individuals. How much more separate and individual are identical twins born at different times? In view of this it is surprising to find Wilmut expressing repugnance at the idea of human cloning, but his objection is not in terms of a threat to individuality, but rather in terms of the view that cloning is an 'unnatural' means of reproduction. He does however concede that 'as moral philosophers remind us, what is 'natural' is not necessarily right, and what is 'unnatural' is not necessarily wrong'.¹⁸⁵ Wilmut surprisingly seems to echo the view of Kass¹⁸⁶ who claims that we feel revulsion at the idea of cloning, although he concedes that the mere feeling is not in itself an argument. Similar revulsion has been expressed in the past at other assisted reproduction therapies (ART's) such as artificial insemination and *in vitro* fertilisation, techniques

¹⁸³ Leon R. Kass *The Meaning of Life in the Laboratory* 2002 published on the internet at: <http://www.thepublicinterest.com/current/article3.html> 7-8

¹⁸⁴ Wilmut et al *op cit* 303

¹⁸⁵ Wilmut et al *op cit* 323; John Stuart Mill claimed similarly that 'conformity to nature has no connection whatever with right and wrong' and the 'duty of man is... not to follow [nature] but to amend it' (*Essays on Religion* 1874 28ff.)

¹⁸⁶ Leon Kass 'The Wisdom of Repugnance' in G.E. Pence *op cit* 39-44

currently accepted but arousing strong aversion when first performed. Harris¹⁸⁷ points out that there is no necessary connection between phenomena that make us uneasy, or even disgust us, and those phenomena that we have good reasons for judging unethical. The ‘wisdom of repugnance’ argument is, however, impervious to reason and constrained by time and place. But times change. Newness *per se* is not immoral.

Undoubtedly, as history has shown there is always the crucial fear that technology may go out of control and that a Pandora’s box could be opened. Certainly the eugenicist programmes of Nazi Germany are evidence of the misuse of technology, and surely accounts for current policy in Germany whereby there is an absolute ban on human cloning (in terms of the Embryo Protection Act of 1990)¹⁸⁸ in addition to an attempt made in 2001 to outlaw cloning globally.¹⁸⁹ But, as with all such ‘slippery slope’ arguments, misuse is not inevitable and, as it will be argued, controls can be put in place to prevent this.¹⁹⁰

George Johnson¹⁹¹ examines and rejects the claim that if a cell can be used to create a genetically identically double then we could lose our uniqueness. His rejection of this threat is based on his claim that whereas it might be possible to clone a body, it is impossible to clone a brain.¹⁹² He explains that while the tissues of the body are made by taking the same kind of cell and repeating it, the genetic structure of the brain is much more complex.¹⁹³ While thoughts and memories, so vital in the determination of identity, do seem to be contained within the brain cells – neurons – what is most important is not the number or distribution of the cells, but the synapses, the connections between them. Even if two people have the same neurons, the neurons become wired up in different ways, forming different neural circuits. With billions of different brain cells the ways in

¹⁸⁷ John Harris ‘ “Goodbye Dolly?” ’ The Ethics of Human Cloning in H.Kuhse & P. Singer (eds) *Bioethics* (1999) 143-151

¹⁸⁸ See Chapter V

¹⁸⁹ European Centre for Law and Justice: ‘Europeans Want UN To Draw Up Global Cloning Ban’ published on the internet at: www.eclj.org/news/euro_news_010813_europeans.asp (16 October 2001)

¹⁹⁰ See concluding chapter.

¹⁹¹ George Johnson ‘Soul Searching’ in *Clones and Clones op cit* 67-70

¹⁹² *ibid* 68

¹⁹³ *ibid*

which they may be linked are infinite.¹⁹⁴ Wilmut points out that the final distribution of the synapses depends on environmental influences, both in the uterus and outside. It is experience that makes and breaks connections. Thus a cloned individual would no more be deprived of free will than any other human being. As he says, 'Once the brain is formed it does its own thing.'¹⁹⁵ Johnson asks what would happen if the technological feat of the ultimate cloning, copying a human brain synapse by synapse, were possible. He admits that if this were done for a brief moment we might indeed have two identical minds. But neurons fire randomly – what if neuron 'No. 20478288 were to fire randomly in brain 1 and not in brain 2? The tiny spasm would set off a cascade that reshaped some circuitry, and there would be two individuals again'.¹⁹⁶

The complexity of our brains is beyond duplication and, if the brain is the seat of consciousness and personal identity, as is generally accepted by philosophers and scientists, it would seem then that cloning cannot seriously threaten our uniqueness. Nevertheless, a sceptical view is called for since how do we decide how close is too close?

Even if we acknowledge the qualitative distinctness of cloned individuals, it has been argued that the clone and the clone source will not be viewed or will not view themselves as truly separate with resulting psychological problems.¹⁹⁷ Because they have the same genetic structure as X, the fear is that their rearing parents and they themselves, as well as anyone else aware of their cloned status, will perceive them as being X, and will have undue expectations of them, expecting that they will emulate X. This, it is argued, may result in an undermining of their sense of self and individuality.¹⁹⁸ Would parents expect a child to copy the life of the gene source, especially if that source has special meaning for example a deceased child?

¹⁹⁴ *ibid*

¹⁹⁵ I. Wilmut et al *op cit* 303

¹⁹⁶ Johnson *op cit* 70

¹⁹⁷ Robertson *op cit* Section 3. 1

¹⁹⁸ *ibid*

If, for example, one cloned a Tiger Woods, would that clone have undue pressure to succeed as a champion golfer and would such pressure constitute a violation of one's autonomy and a denial of what the philosopher, Hans Jonas,¹⁹⁹ terms 'the right to ignorance' or as it is sometimes termed, 'the right to an open future'?²⁰⁰

However, with the emphasis on the importance of self-realisation parents are beginning to understand that as far as possible identical twins should be treated as individuals, dressing them differently, putting them in different classes at school, encouraging different interests and so on. Surely this same awareness will eliminate the problem of the denial of autonomy to cloned individuals?

Jonas however argues that natural twins do not have the same problems of lack of freedom and an open future, as do clones produced by delayed twinning.²⁰¹ Natural twins begin their lives at the same time, and although they have the same genetic inheritance, each is ignorant of what the other by choice will make of his or her life.

'To whatever extent one's genome determines one's future, each begins ignorant of what that determination will be and so remains as free to construct a particular future from among open alternatives, as are individuals who do not have a twin'.²⁰²

Jonas argues, however, that a later twin, who knows the clone source, may believe he/she knows too much about him or herself because there already exists or has existed another individual – one's earlier twin – who, sharing the same genetic starting point, has already made those life choices that lie in the future of the later twin. On this view, it seems as if one's life has already been played out and one's fate is thus determined. In this way the later twin will be deprived of the freedom required for an open future in which one can

¹⁹⁹ See discussion in Buchanan, Brock et al *op cit* 197

²⁰⁰ *ibid*

²⁰¹ *ibid*

²⁰² *ibid*

make one's own authentic choices.²⁰³ If we reject genetic determinism, does this argument have any relevance? Or, as Buchanan *et al* suggest, could a later twin, rejecting a belief in genetic determinism, not still claim that although she is determined not to follow in her earlier twin's footsteps, nevertheless the life of that earlier being will haunt her and exercise an undue influence over her life?²⁰⁴ This still seems to rest on a false, if weaker, belief in genetic determinism. Can one's right to an open future be violated because of a mistaken belief? If in reality the later twin's life is not determined and she is free to choose her future, if she then acts unintentionally as if her life were closed and determined, her right to ignorance of the future has not been violated.²⁰⁵ The technology should not be overruled merely because mistaken expectations *may* be associated with it. Surely what is required is not a ban on cloning but rather education and counselling so that those who choose to reproduce by cloning do not have unjustified expectations, and so that cloned individuals do not hold mistaken beliefs about a lack of freedom to make one's life choices. If a child is cloned it would be unfair, yet likely, that parents may put undue pressure on children in terms of potential. A cloned child may not be an identical copy of its source, but the genetic structure does provide a blueprint for potential development. Here parental expectations may be excessive.

Jonas's concerns apply only to those cases where a good deal is known about the clone archetype. They would not apply to cloning embryos or children who have not lived very long, or to a third party DNA source where little is known. But in fact all children, cloned or not, are subject to parental expectations and constraints, sometimes far in excess of what is just. Many parents are driven to produce 'the best' children, but the best may not be what parents choose for their offspring. A thwarted musician may be as likely to drive a naturally born son to succeed in a musical career as a son cloned from Beethoven. And if both have inherited musical talent who is to say which one is more likely to succeed? The challenge of assuring a child an open future is a challenge to all. Certainly it is not a sufficient argument against cloning as constituting such a threat or

²⁰³ cited in Robertson *op cit* Section 3. 4

²⁰⁴ Buchanan, Brock et al *op cit* 198

²⁰⁵ *ibid*

harm to the autonomy of a cloned child that it would be preferable for her not to have been born at all.

It is submitted that the threat to individuality, autonomy and personhood posed by cloning is not a significant one. Furthermore, if there is indeed a right to an open future or a right to ignorance of one's future there is insufficient evidence that cloning violates this right. In the words of the popular song 'There will never ever be another you'. Are there other reasons to reject cloning?

3.1.3. Social harms

3.1.3.1. Threat to the diversity and integrity of the human gene pool

Since cloning involves replication of an already existing genome it is argued that this may have a deleterious effect on natural selection and will decrease the diversity of the human gene pool.²⁰⁶ As Pence points out, in any population diversity is beneficial. Populations that become too in-bred may lose the ability to respond to a new threat, such as a lethal virus.²⁰⁷ Since we never know what genes we may need, the argument is that 'we should not mess around creating and indirectly eliminating some genes'.²⁰⁸ This is, however, a fallacious argument since it depends on an all-or-nothing position, that is, either all human reproduction is going to be asexual reproduction or none is. But clearly producing children by means of SCNT is unlikely to be a widespread option, since it suffers all the drawbacks of *in vitro* fertilisation – high failure rates and cost – and even if these are overcome it is hard to see why normal fertile couples would choose cloning over sexual reproduction. As Pence points out, were even 'a few hundred thousand couples in advanced countries' to opt for SCNT 'it would have no impact on the planetary human genome'.²⁰⁹ Furthermore Pence states that a primary law of population

²⁰⁶ Willgoos *op cit* 3

²⁰⁷ Pence (1998) *op cit* 129

²⁰⁸ *ibid*

²⁰⁹ Pence *op cit* 130

genetics is regression to the mean and even wide scale attempts by governments to improve the human genome by attempting to control human reproduction are unlikely to get around the inherent tendency of the human population to revert to the normal range.²¹⁰ The reality is, claims Pence, that despite attempted government interference billions of existing people would keep on reproducing in the old way mixing their genes with people created by SCNT.²¹¹ These arguments apply equally to the suggestion that SCNT poses a threat to human evolution. One could add a rider: even if SCNT is a threat to it is human evolution necessarily a good thing? Midgely is critical of evolution worshippers, pointing out that evolution should not be seen as a pyramid with humans at the apex. Rather it is more like a bush with humans somewhere on the upper part of one branch but there are other branches and many factors that will influence what emerges as the next tallest branch, including whether we destroy ourselves.²¹²

3.1.3.2. Objectification and instrumentalisation

The Kantian maxim exhorts us to treat people as ends in themselves, never as a means only.²¹³ The fear has been expressed that cloning may be used as a means to serve parental or even societal ends (for example, as in the attempt in *Brave New World* to produce a worker class), fulfilling utilitarian goals rather than having regard for individual welfare. Robertson points out that couples who gestate and rear children whose DNA they have chosen choose to give a child a particular genome for a reason and even if they do not espouse genetic determinism there will inevitably be some expectations of that particular genome. If they view that child primarily as a means to fulfil the goals motivating that choice the question is whether such expectations may adversely affect such offspring who may come to regard themselves as merely instruments for another's purpose.²¹⁴ We need to ask, however, why people ordinarily choose to have children and whether these reasons avoid such objectification. Such

²¹⁰ *ibid*

²¹¹ *ibid*

²¹² Mary Midgely *Evolution as a Religion: Strange Hopes and Stranger Fears* (1985) cited in Pence *op cit* 131.

²¹³ Kant *op cit*. See Chapter II.

²¹⁴ Robertson *op cit* Section 3. 4-6.

reasons may include the following: having a child who will care for us in our old age, continuing one's genetic line, strengthening a relationship or marriage, fulfilling maternal or paternal instincts, demonstrating virility, fulfilling religious injunctions or even in order to experience the pleasure and joy of having children. These may be mixed or ulterior motives but do not prevent parents from loving children for themselves or respecting them as persons in their own right.²¹⁵ Similarly is it not equally likely that whatever the motive for selecting a particular genome - whether it be avoidance of a genetic disease or use of unrelated embryo or tissue donors, or a desire for certain genetic attributes, or even as an organ or tissue donor²¹⁶ - parents will love and respect such children for themselves? As Robertson points out a 'child's genes could matter enormously for the parents without also causing the parents to deny or negate the child's own uniqueness, freedom or worth'.²¹⁷

In the Ayala case reports indicate clearly that the Ayalas loved the child conceived as an organ donor as much as they loved their other children and would have loved her even had she been unable to save her sister's life.²¹⁸ Surely the same would apply to a child whose DNA was specifically chosen to provide a tissue or organ match. As Kant's injunction states, what is crucial is that such children should not be used as a means only; it is not problematic to use them as a means provided they are at the same time treated as ends in themselves.

3.1.3.3. The problem of eugenics

The above debate is closely linked to the belief that cloning is likely to create the problem of eugenics both in the private and public spheres. Kass claims, for example, that 'thanks to our belief that all children should be *wanted* children [hence the moral permissibility and legality of contraception and abortion]...sooner or later only those children who fulfil our wants will be fully acceptable. Through cloning we can work our wants and wills on

²¹⁵ *ibid*

²¹⁶ as in the Ayala case discussed in Chapter I Section 1.4

²¹⁷ Robertson *op cit* Section 3. 5

²¹⁸ *ibid*

the very identity of our children, exercising control as never before.²¹⁹ He rejects the possibility of self-cloning as narcissistic²²⁰, claiming it to be an attempt to mould the cloned child in our own image. But is this really different from what occurs as a result of sexual reproduction?

In reality, parents all the time attempt to produce children in a particular image, that of their own. In normal sexual reproduction we already choose partners who are likely to provide us with the sorts of children we want, for example we would be unlikely to choose a partner of low intellect if intellectual ability is seen as a crucial value. Similarly we may reject partners of a different racial group, religion or culture. And in the upbringing of children parents attempt continually to instil them with their own beliefs and values. On a wider scale scenarios of *Brave New World* and *Boys from Brazil* abound, but these are fictions that ignore almost completely the fact that cloning involves gestating and rearing. What is the likelihood of procuring women in sufficient numbers who would gestate cloned children merely as instruments for some crackpot ideology? It would in fact be easier to produce a slave class or a class of crazed fanatics through brainwashing than through SCNT.²²¹ (It can be argued that the existence and doings of the Al Qaeda network substantiates this argument.) The argument that cloning technology permits a eugenic and racist selection of the human race is really a 'slippery slope' argument dependent on the possibility of abuse – and slippery slope arguments are notoriously problem fraught. It may raise the need for controls on cloning but hardly justifies a complete ban. In fact Kass himself concedes that we already practice negative selection, against a norm of health.²²² Thus we allow pre-natal testing, pre-implantation screening of embryos for I.V.F., surrogacy, egg or sperm donation and abortions to prevent the birth of damaged fetuses. Cloning is yet another step in the meliorist perspective in terms of which what is sought is the improvement of human beings. Is it morally wrong to try to produce 'optimum babies'?²²³ What worries Kass is that the

²¹⁹ Kass *op cit* 16

²²⁰ *ibid*

²²¹ U. Schuklenk quoted in Laurice Taitz 'Children of a Lesser God' Sunday Times Lifestyle 19 August 2001 11

²²² Kass *op cit* 32

²²³ Kass *op cit* 22

distinction between health and genetic enhancement may be blurred and Robertson's principle behind negative eugenics, to ensure a healthy child with a good chance in life, is too elastic. For example, some may see it important to look like Marilyn Monroe in order to have a good chance in life!²²⁴ Does the meliorist position go too far? Is abuse likely and if so, should it be controlled?²²⁵

3.1.3.4. Problems of kinship and a threat to family life

One of the major concerns with human cloning is that of the possible confusion that it could create in determining and identifying kinship and lineage. In Eiseman's survey of the views of some 30 scientific societies and professional associations in America, she reports that some feared that human cloning would have a negative impact on family relationships.²²⁶ Thus the Biotechnology Industry Organisation claimed:

These new prospects [of cloning human beings from the genetic material of an adult cell] challenge some of the most fundamental concepts we hold about ourselves as social and spiritual beings. These concepts include what it means to be a parent, brother or sister, a family.²²⁷

The American Medical Association argued that:

Unprecedented relational circumstances would or could arise. For instance, birth cousins may be genetic siblings, and marital prohibitions might be called into question.²²⁸

On the other hand the Society for Assisted Reproductive Technology rejected these positions claiming that similar arguments have been made 'with every new development

²²⁴ Kass *op cit* 32

²²⁵ This will be discussed in Chapter VI.

²²⁶ Eiseman *op cit* C21-22

²²⁷ Eiseman *op cit* C21

²²⁸ *ibid*

in the area of reproductive medicine' and that cloning would not have a negative impact on the concept of a family.²²⁹

In assessing these arguments we need to examine the relationship between the clone and the person cloned as lineage confusions differ depending on this relationship. Some but not all forms of cloning could give rise to these confusions. There are four possible scenarios: cloning one's already born child, cloning oneself, cloning a third party, (anonymous or known), and cloning one's parent.²³⁰ To simplify matters the focus will be on the effects of the transfer of nuclear DNA for although mitochondrial DNA is carried by the enucleated egg cell as discussed earlier,²³¹ it is a small percentage of the total and will be ignored for the purposes of this discussion. It does raise the possibility, however that the female genetic contribution can be separated into two parts, nuclear DNA and mitochondrial DNA contained in the egg. In sexual reproduction the same female contributes both types of DNA. SCNT permits two possible situations: where two different women are sources of DNA, or where the same woman may contribute both kinds of DNA at different times. As Robertson points out, 'cloning thus further partializes biologic motherhood by presenting the novel possibility of a third biologic mother, in addition to the separate gestating and genetic mothers that IVF technology now makes possible'.²³² In fact a cloned child could have as many as five or six 'parents': three or four mothers and two fathers, a sperm/DNA donor and a social or rearing father. Again the question is: Are confusions likely to be so detrimental to the unborn child that it would be better that such a child is not born?

- Cloning one's child.

Where a couple chooses to clone the DNA of an existing child or that of

²²⁹ Eiseman *op cit* C22

²³⁰ These have been clearly elucidated by Robertson *op cit* Section 4. 1-4.

²³¹ See this chapter: Section 3.2, and Chapter I Section 1.52

²³² Robertson *op cit* Section 3. 7

their own embryo²³³ the kinship problem does not arise, since the child is the genetic child of the social or rearing parents. If the woman provides the enucleated egg to which the child's DNA is transferred she will have provided both mitochondrial and nuclear DNA as well as being the gestating mother. And even where her egg is not used she will still be the major source of (nuclear) DNA, provided at an earlier time. The process of cloning can be understood as a form of delayed twinning and in this case the cloned child will have an older sibling who has the identical nuclear DNA. Although this may be odd it does not raise problems of kinship confusion since the cloned child is biologically their own child.

- Rearing a clone of oneself.

Where the DNA of one of the rearing parents is used to create a child a kinship problem arises in that the rearing parent is in actual fact a sibling of the child – an older identical twin. In such a case it is argued that the social parent could see the child as merely a version of him- or herself. Here the major problem could be a psychological one arising from undue expectations or excessive identification. In addition this has consequences for the clone source's own parents since the cloned child will be the genetic child of the social grandparents who now have new offspring through no decision or effort of their own, yet they may neither have consented to, nor know about, another genetic child. In dealing with these sorts of problems there seems to be agreement that the social parents should assume the rights and duties of parents while the genetic parents should fill the role of social grandparents. As Robertson points out, this is in keeping with their adult child's desire to have a child.²³⁴

²³³ Reasons for choice of whom to clone will be discussed in the next chapter.

²³⁴ Robertson *op cit* Section 4. 3

Where the male partner provides the nuclear DNA, if the female's egg is used she will be the gestating mother and the provider of mitochondrial DNA, with the result that the child will have a different nuclear genetic mother. If she gestates without providing the egg or nuclear DNA, the child will have the same gestating and rearing mother, but a different major and minor genetic mother (i.e. three mothers). Where a surrogate gestates the child a fourth aspect of motherhood comes into play. To what degree are children likely to be affected by this fragmentation? In cases of contestation who should be assigned the primary role of motherhood? Perhaps one can support Robertson's argument that in the first place there should be no cloning without rearing.²³⁵ This would either eliminate surrogate gestational mothers, especially as surrogacy in general is problematic, or would necessitate drawing up a legally binding contract determining parenthood. In addition if adequate counselling is provided, given that most parents desire the well-being of their children, undue projections or identifications could be avoided. This would make it unlikely that the harm produced from kinship confusion is so great that such children should not be born.

- Cloning an unrelated third party.

In this case, a couple will gestate and rear a child with whom they may have either only mitochondrial genetic connection, (e.g. where the gestating mother provides the egg), or no genetic connection at all. The cloned third party will have a later born identical twin but without a social relationship. Similarly the 'grandparents' or genetic parents of the clone source will have no social roles. This however is not entirely unique since similar situations arise in certain kinds of ART's, especially for example with embryo donation. And since embryo donation is accepted because of

²³⁵ Robertson *op cit* Section 4. 10

the gestational relationship and the commitment to rear²³⁶ the same should apply to 3rd party cloning where there is no (or very little) genetic connection, but there is a gestating mother and a commitment to rear. Again where donor eggs are used, (particularly as a method to obviate mitochondrial disease), the clone will have two genetic mothers as well as a gestating mother. (That is, a donor nucleus will be transferred to a donor egg cell, which will provide the mitochondria, and this will then be implanted into the gestating mother.) Also, the genetic parents of the clone source will be the genetic parents of the clone without having done anything to create a child, probably without consent, and with no rearing role. This is, however, not very different from embryo cloning and although it raises kinship issues it is hard to see that it would be unduly problematic.

- Cloning and rearing one's parent.

Where a couple uses the DNA of one of their parents to create a child gestated by the female partner and reared by both, this raises the most serious problems. In reality one could thus carry and rear a genetic copy of one's father or mother or one's partner's father or mother. Here traditional relationships between genetic children and parents could indeed become seriously confused, although with adequate counselling this is not necessarily inevitable. Certainly, however, one would want to examine the motives of couples who wish to clone parents. This could well be regarded as sufficiently strange to warrant a ban on this form of cloning, which may be regarded in the same light, for example, as a prohibition on incestuous marriage. It does not however justify a ban on all other forms of family cloning, let alone cloning in general.

²³⁶ *Robertson op cit* Section 4. 1

In conclusion it is submitted that the possibility of kinship confusions and blurring of relationships does not constitute sufficiently compelling reasons to warrant denying a family the possibility of cloning an individual of their choice in order to create offspring where normal methods of procreation are not possible, or are likely to produce damaged children. The most problematic lineage confusion arises where a parent is cloned but whether restrictions on this form of familial cloning should be imposed would require a great deal more research, as well as an examination of these aspects in terms of the notion of the right to procreative liberty, a question that will be addressed in the next chapter.

3.1.3.5. Issues of social justice

One of Beauchamp and Childress's principles of biomedical ethics is that of justice²³⁷ and a discussion of the potential harms of cloning would be incomplete without some discussion of issues of justice, in particular the question of distributive justice.²³⁸ However the account will be brief as potential harms are not specific to human cloning but could occur equally with other forms of assisted reproduction. It is intended to focus on two scenarios where social harm could occur. The first raises the problem of allocation of scarce resources since it has been argued that cloning would 'divert resources from other more important social and medical needs'.²³⁹ Undoubtedly there are more pressing needs, especially in South Africa with the current AIDS pandemic, but this is at best a reason for not making public funds available for cloning research or implementation. As Brock points out it is not a reason for prohibiting private institutions or individuals using their own resources, or a reason for justifying a complete ban.²⁴⁰ At this stage it is not known how expensive cloning would be but in fact current opinion suggests that it may in fact eventually be cheaper than IVF.²⁴¹

²³⁷ Beauchamp and Childress *op cit* 38, 326-387

²³⁸ Distributive justice refers to 'fair, equitable and appropriate distribution' (Beauchamp and Childress *op cit* 327) of goods in society and for the purposes of this paper in particular, the fair distribution of goods relating to healthcare and reproductive rights.

²³⁹ Dan W. Brock *op cit* E-19

²⁴⁰ *ibid*

²⁴¹ Professor Trefor Jenkins in a radio talk *Genesis Genes and Neugenics* – SAFM Summer Lecture Series (2002) - estimated the costs of IVF as being about R20, 000 per attempt and most times two to three attempts are made before the procedure is successful.

The second claim is that human cloning could lead to economic abuse and exploitation, especially if a commercial market in embryos is allowed, or where shysters offer cloning at exorbitant prices. DNA too could be marketed and scenarios have been conjured where celebrities sell their DNA to those desiring their idea of a perfect baby! This, however, is not very different from what happens with commercial sperm banks where sperm is sold, although the idea of a bank of embryos catalogued according to genetic make-up and potential talents and capacities may be repugnant. What is however required are laws and control, not a total prohibition on cloning. Further, just as gamete donors may be allowed to produce only five offspring in South Africa²⁴², (ten in the United Kingdom²⁴³), so too DNA donation can be limited.

Many of the potential problems envisaged by cloning are not unique to cloning. Kinship problems can arise with procedures such as surrogacy, a controversial procedure but one that is increasingly gaining moral acceptance. Even adoption is fraught with moral problems – for example those of eugenicist selection and kinship. Assisted reproduction therapies, particularly those involving gamete donation²⁴⁴ (artificial insemination by donor – AID), also produce a ‘eugenic outcome’ according to the original and broad definition of the term as ‘selective breeding’.²⁴⁵ Are children born in this way harmed? In fact, as Silver points out,²⁴⁶ they are likely to be enhanced, since they are less likely to develop disease traits that have been specifically selected against both in AID and cloning. Existing sperm banks allow infertile couples to select donors with characteristics that they find desirable, but they are not guaranteed that those same characteristics will be found in their children. Is there anything wrong with allowing parents to select the best donor possible? And if this is acceptable in these cases, why should there be a different

²⁴² M.L. Lupton ‘Artificial Fertilization’ in *Family Law: Medico-Legal Aspects* (Issue 23) Interpretation of the Human Tissue Act of 1983 ‘When it comes to the medical practitioner’s notice that five births have resulted from the gametes of a particular donor...he should then destroy all unused gametes of that donor...’ 47

²⁴³ Surveillance 1998: Report on International Legislation of ART published on the internet at: www.mnet.fr/iffs/a_surv.htm

²⁴⁴ Silver *op cit* 158-162

²⁴⁵ *ibid*

²⁴⁶ *ibid*

attitude towards cloning? Arthur Caplan, who originally criticised such eugenicist type programmes as being ‘morally pernicious’, has subsequently conceded that we:

‘mold and shape our children according to environmental factors. We give them piano lessons and every other type of lesson imaginable. I’m not sure there is anything wrong with using genetics, as long as it is not hurting anyone or...imposing [our] ideas of perfection on anybody’.²⁴⁷

It is submitted that this applies as much to ART’s as to cloning. Many of the arguments against cloning can be used equally as arguments against other forms of acquiring offspring, including adoption, procedures that are accepted as morally permissible. If they are not morally impermissible in such cases, why should they be so in respect of cloning?

3.2 Conclusion

In conclusion with the exception of physical harms that may at present result from not yet fully developed technology, it is not clear that any of the above-mentioned harms are compelling enough to prohibit human cloning altogether. Whether it is wise to impose a moratorium at present, as was recommended by the NBAC in 1997, will be discussed in chapter VI.

²⁴⁷ Arthur Caplan (1994) commenting on the California sperm bank, *The Repository for Germinal Choice*, established by Robert Graham, as quoted in Silver *op cit* 162

CHAPTER IV

4. Normative arguments in support of human cloning

Brock²⁴⁸ raises two questions that will be addressed in this chapter:

- a) What individual or social benefits might human cloning produce?
- b) Do we have a moral right to use human cloning? Or, to put it differently, would a prohibition on human cloning undermine important moral rights?

The discussion will begin with an analysis of the most common practical and ethical arguments in favour of cloning. The question of human cloning as a moral right will be analysed, with special reference to the question of the relationship between moral rights and legal or constitutional rights. Here there are two main issues. The first is the question of cloning as a reproductive right based on the notions of procreative liberty and privacy entrenched in the South African Constitution.²⁴⁹ The second is the question as to whether research and experimentation into human cloning is part of a scientist's right to academic freedom²⁵⁰, a subset of the right to freedom of expression²⁵¹, so fundamental to liberal democracy. This chapter will conclude with a brief account of religious opinions on cloning and arguments as to why these are particularly problematic.

4.1. Individual or social benefits

It is submitted that some arguments in favour of cloning are *bad* arguments based on the false belief in genetic essentialism or determinism. Such arguments include cloning a dying (or dead) much loved individual – child, spouse, parent - in order to 'replace' her or him. It is one thing for parents who have lost a child to desire another who will fill the

²⁴⁸ Dan W. Brock *op cit* E-4 -11

²⁴⁹ G.E. Devenish (1999) (note 58 above) 187

²⁵⁰ Constitution of S.A. Chapter 2 Bill of Rights Section 16 (d)

²⁵¹ Constitution of S.A. Chapter 2 Bill of Rights Section 16

void, but it would be fundamentally mistaken to assume that by cloning you are replicating the identical individual. Cloning a child who has died would not replace the child the parents had loved and lost, but would create a new numerically and qualitatively different child albeit with the same genes. This is not to say that cloning someone who has a special meaning would not produce a sense of satisfaction, thereby providing some benefit. Similarly cloning the DNA of a particularly talented or extraordinary individual – a Beethoven, Einstein, Mother Theresa or Madonna (!) - in order to procure an ‘optimum baby’ will neither produce an identically talented nor necessarily an optimum individual since that clone will grow up in a completely different environment. It is only the mistaken genetic essentialist who can conjure up eugenicist scenarios. As Brock points out, ‘...neither by cloning, nor by any other means would it be possible to replicate their environments or the historical contexts in which they lived and their greatness flourished’.²⁵²

There are, however, *good* arguments in support of human cloning that will now be explored:

4.1.1. Treatment of infertility either a) in cases of gamete insufficiency, or b) where a couple may produce viable sperm and eggs, but where IVF is necessitated.

- a) In the case of gamete insufficiency on the part of the male partner a couple at present could obtain donor sperm from a commercial sperm bank or fertility clinic. Where the female is infertile donor eggs may be obtained which are then fertilised *in vitro* with the male partner’s sperm. The child produced will thus have the DNA of only one of the partners. But since the desire for one’s own child is so strong, some couples would prefer to use the DNA of one of themselves, rather than using the gametes of an anonymous third party. Where a female is infertile and unable to provide the egg, an enucleated donor egg could be provided, and either partner could provide the DNA while she will gestate.²⁵³ If two children are produced in this way the couple could

²⁵² Dan W. Brock *op cit* E-9

²⁵³ Robertson *op cit* Section 1. 5

use the DNA of each partner thus acquiring both a son and a daughter. Where the male is infertile, the female could provide the egg and the male's DNA could be used, or she could provide the egg and DNA, or just DNA where both are infertile, in which case a donor egg would be required. In all these cases the female would gestate, and where she provides the egg she would at a minimum contribute mitochondrial DNA.²⁵⁴

- b) Another method of treating infertility, where a couple is not completely infertile but where greater enhancement is required, would be by cloning embryos. In this case the couple will have produced viable egg and sperm but will be using *in vitro* treatment. When an embryo is produced it may then be cloned, either by embryo splitting or by means of an enucleated egg/eggs to create additional embryos.²⁵⁵ A twofold purpose would be served: (i) It would ensure the creation of enough embryos to produce a pregnancy where only one or two eggs are produced given that several attempts at implantation are generally required for a successful pregnancy.²⁵⁶ (ii) It would reduce the high costs of surgical retrieval of eggs at each attempt, and would also reduce the need for medical hyperstimulation of egg production cycles (superovulation). The latter is a physical burden, particularly as the side effects of these drugs are not fully understood and there is suspicion that some of these may be carcinogenic.²⁵⁷ Fears have also been expressed that babies born by means of fertility treatments are more likely to have birth defects or low birth weights. Statistics indicate that there is an 8% risk of major defects in babies conceived either by IVF or intracytoplasmic sperm injection (sperm cells injected into the egg) as compared with a 4.2% rate in 'babies made the old-fashioned way'.²⁵⁸ Also the risk of low birth weight leading to possible cardiac and cognitive problems appears to have an increased risk of 2.6%.²⁵⁹

²⁵⁴ See discussion in Chapter III; also Robertson *op cit* Section 3. 7

²⁵⁵ Robertson *op cit* Section 1. 5

²⁵⁶ Statistics indicate that about 40% fail to implant. Jenkins *op cit*. See Chapter III.

²⁵⁷ Pence *op cit* 107

²⁵⁸ *Time Magazine* March 18 2002 report by Horowitz, Park and Song quoted in M. Lemonick 'Risky Business' 48-9

Also Gina Kolata *New York Times* March 7, 2002, a recognised authority on cloning. Published on the internet at www.nytimes.com

²⁵⁹ *Time Magazine op cit* 49

However, there is a caveat in that 91% of ART babies are likely to be born healthy – a risk most infertile couples would choose.²⁶⁰ Thus even if cloning by SCNT carries a comparable risk, if it is the only means of having a child why should it also not be offered?

The question is whether there are good reasons to refuse cloning when it may be the best or only means of overcoming infertility. Those who argue that adoption is always a possibility ignore the very real desire for a child that is biologically related. Furthermore the value of genetic connection has been recognised in law where judges have returned adopted children to their biological parent.²⁶¹ It is also manifested in the continual attempts by adopted children to seek their genetic parents.²⁶² Pence argues that downplaying the biological connection could undermine the very foundations of the family.²⁶³ Richard Dawkins has argued further that evolution points to the role of families who cherish genetic connections, taking care of their own first, in contributing to survival.²⁶⁴ John Stuart Mill's 'harm principle'²⁶⁵ draws a line between public and private life arguing for the freedom of personal actions of adults where no others are put at risk of harm.²⁶⁶ It would seem that the high costs and misery associated with the likelihood of numerous failed IVF attempts²⁶⁷, as well as risk of possible side effects, is a good utilitarian argument for cloning and accords well with the harm principle.

²⁶⁰ *ibid*

²⁶¹ Baby Richard and Baby Jessica (*De Boer v Schmidt*) cases quoted in Pence *op cit* 108. In 1991 his unmarried birth mother gave up 'Baby Richard' for adoption. The biological father later contested the adoption and the Illinois Supreme Court awarded custody to him in 1994, reported on the internet at: www.webcom.com/kmc/adoption/br-faq-3.html

The *De Boer v Schmidt* case involved a battle for custody between the De Boer family and their adopted daughter's biological father who, although regarded as 'white trash', was awarded custody. See B. Weaver-Catalana 'The Battle for Baby Jessica: A Conflict of Best Interest' *Buffalo Law Review* 43 (1995) 583

²⁶² Pence *op cit* 108-112

²⁶³ Pence *op cit* 108

²⁶⁴ Richard Dawkins *The Selfish Gene* (1989) especially Chapter 6 'Genesmanship' 88-108

²⁶⁵ John Stuart Mill (1869) *On Liberty* 'Introduction' published on the internet at www.bartleby.com/130/1/htm

²⁶⁶ If the arguments of the previous chapter are accepted there are no harms conclusive enough to prohibit cloning in the event that ultimately its risk of physical harm is reduced to acceptable levels.

²⁶⁷ Jenkins *op cit*

4.1.2. Cloning for homosexual gay and lesbian couples

Although this is not strictly a matter of infertility, since individual partners may be fertile, homosexual couples cannot for obvious reasons procreate sexually with one another. Up to now for lesbian couples AID, combined usually with IVF or embryo transfer, has been the only way to procreate, and there has been no possibility other than through surrogacy for a male couple to produce offspring. Two questions arise. If human cloning becomes feasible, should we restrict it only to married couples? If so what of homosexual marriages, which are becoming increasingly recognised? If we allow them to procreate by other means why should we not also permit procreation by means of SCNT? Would such a refusal not be in violation of the equality clause of the Bill of Rights of the South African Constitution, which states: 'The state may not unfairly discriminate directly or indirectly against anyone on one or more grounds including ... gender, sex...marital status...sexual orientation...'?'²⁶⁸

It would seem that there is no real justifiable reason constitutionally to deny lesbians the same benefits of genetic parenthood as others have. If cloning is permissible for heterosexual couples, it should be permissible for homosexuals who might otherwise be denied freedom to procreate. It is true that in the case of males there are additional problems since although one of the male partners could be cloned they would have to procure a surrogate mother to provide the oocyte and gestate, raising all the associated ethical problems of surrogacy. With lesbian couples a child could be cloned from the oocyte of one and the nuclear DNA of the other thus satisfying the desire of both to have a genetically related child – nuclear DNA of one and mitochondrial DNA of the other who would probably also gestate. If two children are desired this procedure could be reversed. The argument that such offspring would have no genetic connection to a male is of course fallacious. The father of the woman whose genotype is used would be the genetic father of the child.

²⁶⁸ Constitution of S. A. Chapter 2 Bill of Rights Section 9 (3)

An apparent limitation on SCNT by same sex couples would be if children born into such a relationship were harmed. Are there special harms apart from the general ones already discussed that may be incurred? At present, this is merely speculative. Currently there seems to be no conclusive evidence showing that children of same sex couples are worse off than children of opposite sex couples. In fact the general well-being of such children has been described.²⁶⁹ To sum up, if cloning by SCNT is permissible for heterosexual couples, it should be permitted for same sex couples too.

The above arguments fall within what Kass has termed the *technological* context of cloning,²⁷⁰ where cloning is seen as an extension of existing techniques for assisted reproduction.

4.1.3. Research on human cloning might make possible important advances in scientific knowledge

The question of the right of scientists to carry out research will be dealt with in greater depth later.²⁷¹ But at this point the argument that human cloning research may produce advances in scientific and medical knowledge cannot be dismissed. This could also be seen as an extension of Kass's technological perspective, although Kass himself does not engage with this aspect. We cannot now predict what form these advances would take but it is likely that such research would advance our understanding of the processes of reproduction with probable, if at present uncertain, benefits, particularly relating to fertility. Such research would, however, have to be compatible with standard ethical and legal requirements for research in human subjects, such as informed consent, limitations on risk, protection of experimental subjects and children, and so on.²⁷² Schuklenk and

²⁶⁹ Timothy Murphy 'Entitlement to Cloning' in McGee *op cit* 217 citing C. J. Patterson 'Lesbian and Gay Families with Children): Public Policy Implications of Social Science Research' *Journal of Social Issues* 1996; 5:29-50

²⁷⁰ Kass *op cit* 21-22

²⁷¹ In terms of the freedom of expression clause in the Constitution of S.A. Section 16 which includes '(b) freedom to receive and impart information or ideas and (d) ...freedom of scientific research'. See below Section 4.22.

²⁷² 'Human and Animal Research' in T. Mappes and D. De Grazia (eds.) (2001) *Biomedical Ethics* 225-233; also Ferdinand van Oosten 'The Law and Ethics of Information and Consent in Medical Research' *THRHR* (2000) (63) 5-31

Ashcroft claim that: ‘given there are no ‘overwhelming inherent reasons against providing ...people with access to such technology we should at the very least allow research on human cloning to go ahead’.²⁷³ This is not to say that we should allow cloning to take place at this stage – at least not until it has been proved to meet acceptable standards of risk. Wolf in a Hastings Centre Report criticising the NBAC argues that a ban on cloning and research may cause harm to infertile couples, especially if it is indefinite.²⁷⁴ Agreeing that cloning is only one of a number of different reproductive technologies that should be safe before application, she states that the task we face is to ‘devise a regulatory approach that addresses safety’ yet at the same time ‘permits research and progress in a sphere of immense importance to couples.’²⁷⁵

The arguments that follow fall within a *meliorist* perspective, in that here cloning is seen as a means of improving human beings, either by avoiding risks of genetic disease or in treating disease, illustrating the overlap between reproductive and therapeutic cloning, the aim of what Kass calls ‘valetudinarians’.²⁷⁶ It should be noted that more controversial eugenicist type arguments or attempts to produce ‘optimum babies’ also fall within the meliorist perspective.²⁷⁷

4.1.4. Reproduction without transmitting a serious hereditary disease or risk of disease

One of the most important benefits of cloning is that it makes it possible to prevent genetically transmitted harms to offspring. For example, couples who are carriers of a recessive genetic disease have a one-in-four risk of transmitting that disease to their child. In the case of an autosomal dominant genetic disease the risk increases to 50-50 or one-in-two.²⁷⁸ At present one way to prevent this is to undergo genetic testing and diagnosis

²⁷³ Schuklenk and Ashcroft *op cit* 34-35

²⁷⁴ Susan M. Wolf ‘Ban Cloning? Why NBAC Is Wrong’ in Glen McGee (ed.) *The Human Cloning Debate* *op cit* 120-121

²⁷⁵ Wolf *op cit* 121

²⁷⁶ Kass *op cit* 21

²⁷⁷ *ibid*

²⁷⁸ LeRoy Walters and Julie Gage Palmer (1997) ‘Germ-Line Gene Therapy’ in Mappes and DeGrazia (2001) *op cit* 578

during pregnancy, followed by selective abortion where tests are positive. But this is a traumatic choice for any couple, particularly as the choice to abort is not a choice against pregnancy, but a choice against a particular genetic disease.

Another means of preventing transmission of genetic disease would be determined by who the carrier is and what kind of disease. For example, some diseases that are X-linked (sex linked) at present cannot be tested pre-symptomatically making pre-natal diagnosis impossible.²⁷⁹ In the case of mitochondrial disease, passed on by the mother, the couple could avail themselves of a donor egg followed by IVF; where the husband is the carrier donor sperm could be used. But in each of these cases the problems have to be faced of introducing an anonymous third party, which many find distasteful, as well as the problems of IVF discussed above.

New techniques of gene therapy are being developed either as somatic or germ-line gene therapy.²⁸⁰ Somatic gene therapy may help the carrier (for example in Huntington's disease, a late onset disease usually affecting people in their 40's – the gene could be treated thus preventing the carrier from developing the disease, but not preventing transmission to offspring). Children, however, may still inherit the gene for the disease themselves and will thus also have to undergo gene therapy, either at the embryonic stage where tests are available, or later. For instance, Nancy Wexler, the researcher who helped discover the gene for Huntington's and who is at risk herself, chose not to have children.²⁸¹ Perhaps she would consider cloning if it becomes safe?

Germ-line therapy treats the cells before they differentiate thus preventing the disease

²⁷⁹ *ibid*

²⁸⁰ *ibid*

²⁸¹ Pence *op cit* 106

from developing²⁸² but it is still experimental and as ethically controversial as cloning.²⁸³ Pence argues that it may in fact be more risky than cloning and moreover there is always the problem of knowing whether all the targeted germ cells have been altered.²⁸⁴ Costs too may be higher than cloning. But this procedure cannot at this stage be adequately assessed and it is not known what future developments will take place.

The advantage of cloning for genetic disease impairment is that where parents have already had a disease free child, (as is possible where they are carriers of recessive genes) they may choose to clone that healthy child rather than risk having offspring with the disease. Alternatively, where one partner is disease free, a child could be cloned from that partner. If research on human cloning were encouraged, it is possible that inexpensive, reliable methods would be developed that may provide alternatives to IVF or pre-natal diagnosis and selective abortion.²⁸⁵

4.1.5. Cloning as a source of organs or tissue for transplantation

Reference has already been made to the Ayala case²⁸⁶ where a child was conceived (naturally) in the hope of providing a tissue match for the Ayala's 18-year-old daughter suffering a rare form of leukaemia who needed a bone marrow transplant. In the Ayala case the new baby was in fact a good match but there was no guarantee at the time of conception. A clone of the girl would have been guaranteed a perfect tissue match.

²⁸² Wilmut et al *op cit* 345 'The germ cells, which give rise to the gametes, develop separately from the body [somatic] cells. Thus changes made in the body cells do not affect the germ cells and are not passed on to the next generation. Changes made in the germ cells are passed on, however – and in turn manifest both in the body cells and in the germ cells of the following generation. Thus genes are in effect transmitted from the germ cells of one generation to the germ cells of the next, and this succession of cells is the "germ-line".'

²⁸³ It may also contravene the Human Tissue Act 65 of 1983 and the Human Tissue Amendment Act No. 51 of 1989, 39(a), in that it may involve 'genetic manipulation outside the human body of gametes or zygotes'. This will be discussed later in this chapter.

²⁸⁴ John A. Robertson 'When Cloning is Safe and Effective' in B. Mackinnon (ed) *Human Cloning op cit* 146

²⁸⁵ More controversial, however, would be cloning not merely to avoid disease, but cloning to improve the genetic inheritance of children, since here the choice is not merely cloning to have children, but cloning to have children with a particular DNA. For Kass this would constitute the eugenicist aspect of the meliorist perspective. This has already been discussed in the previous chapter Section 3.1.

²⁸⁶ See Chapter I Section 1.4

Similar situations can be envisaged where tissues – skin, blood etc. – or even organs are required for transplant, although in the case of organs it would be illegal and immoral in most cases for an organ of a minor – even a duplicate organ such as a kidney – to be used.²⁸⁷ Needless to say, it is not always possible to wait for cloning, gestation and development of the later born twin.

This raises the moral problem of using people as a means,²⁸⁸ but it has been argued²⁸⁹ that parents will come to love such a child equally or even more, and that although the child may be conceived as a means, it is not only a means, but becomes an end in itself, as was clearly the case with the Ayala family. Cloning aside, there are mixed motives for procreating, children often being conceived in the interests – sometimes selfish – of the parents (for example to satisfy desires, to have someone to look after us in our old age, etc.) rather than of the children themselves. As Brock points out, if one accepts the right to procreative liberty²⁹⁰ ‘public policy does not assess prospective parents’ motives and reasons for procreating as a condition of their doing so’.²⁹¹ Procreative choice belongs in the private sphere²⁹²; and it is not the role of government or public policy to determine it.²⁹³

²⁸⁷ Human Tissue Act 1983 and Human Tissue Amendment Act 51 of 1989. See also issues of consent.

²⁸⁸ contrary to Kant’s second formulation of the Categorical Imperative. See Chapter II.

²⁸⁹ See Chapter III Section 3.1.3.2. Objectification and instrumentalisation.

²⁹⁰ Constitution of S.A. Chapter 2 Bill of Rights Section 12 (2a) ‘Everyone has the right to bodily and psychological integrity which includes the right (a) to make decisions concerning reproduction’

²⁹¹ Brock *op cit* E-9

²⁹² Constitution of S.A. Chapter 2 Bill of Rights Section 14 ‘Everyone has the right to privacy’

²⁹³ Although it lies beyond the ambit of this paper, reference must be made to the breakthrough that has been made with human stem cells whereby it has become possible that cloned embryonic stem cells can be grown to produce tissues or organs for transplantation, to repair or replace damaged ones. The process would allow stem cells to differentiate into specific organs or tissues but with no intention of developing into a fully-fledged human being. The cloned cells would develop up to the blastocyst stage, embryonic stem cells would be removed prior to differentiation and the stem cells would be stimulated to produce the required organ or tissue. (Human Cloning Foundation: ‘The Benefits of Human Cloning’ published on the internet at: <http://www.humancloning.org/benefits.htm>) It is believed that this method is a potential source of stem cells for the regeneration of all the tissue and organs of the body – the road to immortality? There is controversy over stem cell cloning which is banned in many countries including the U.S.A. although the U.K. has just recently passed legislation allowing it. Legislation will be discussed in the next chapter. The ethical issues of stem cell cloning differ from those of reproductive cloning requiring separate evaluation.

4.2. Do we have a moral right to clone or would a prohibition on human cloning violate important moral rights?

In this section cloning in the context of rights, Kass's so-called *liberal* perspective, will be examined. The question that arises is: what is a moral right and is there a valid distinction between moral and legal rights? Rights-based ethics²⁹⁴ is a modern form of deontological ethics and rights are generally accepted as fundamental to modern western liberal democracy. There has, however, by no means been consensus as to the status of moral rights. As stated previously,²⁹⁵ Bentham, the arch utilitarian, regarded rights as 'nonsense on stilts'²⁹⁶ arguing that the only rights that existed were those enforced by positive law. Mill, however, argued for a distinction between moral and legal rights,²⁹⁷ on the basis that some legal rights are unconscionable and contrary to morality. He claimed that from the truism that unjust laws exist there might be bad positive law contrary to natural justice.²⁹⁸ Following this it could be argued that rights entrenched by the law or by constitutions ought to be justified and supported by moral arguments. It has already been argued that there are in principle no valid moral objections to cloning sufficient to warrant a total prohibition.²⁹⁹ On the assumption that the rights entrenched in the S.A. Constitution are indeed justified moral rights,³⁰⁰ (an assumption that would seem to be reasonable, given that the S.A. Constitution is generally regarded as one of the most advanced and just constitutions in the world), then the question arises as to whether a prohibition of the right to clone would in fact undermine the fundamental moral rights entrenched in the Constitution.

According to Section 7 of the Constitution, the Bill of Rights is one of the cornerstones of democracy in South Africa, affirming 'the democratic values of human dignity, equality

²⁹⁴ See Chapter 2 above

²⁹⁵ See Chapter 2 above

²⁹⁶ Jeremy Bentham 'Anarchical Fallacies' in J. Waldron (ed) *Nonsense Upon Stilts* (1987) 53

²⁹⁷ James Stuart Mill 'On the Connection between Justice and Utility' – extracts from *Utilitarianism* (1861) in Richard E. Flathman (ed) *Concepts of Social and Political Philosophy* (1973) 389-404

²⁹⁸ *ibid*

²⁹⁹ See Chapters III and IV above

³⁰⁰ or at least legal rights based on justifiable moral rights

and freedom'.³⁰¹ Furthermore these, it would seem, are not merely negative but positive rights in that the state must not merely 'respect' and 'protect' these rights but must 'promote' and 'fulfil' them.³⁰² It has previously been submitted that human cloning would *not* undermine important moral rights including in particular the right to human dignity. If in addition a *prohibition* on human cloning can indeed be shown to violate important moral rights that are entrenched in the constitution as legal rights, then it can be argued that such a prohibition would be unconstitutional.

One of the most fundamental rights entrenched in the Bill of Rights is the right to human dignity,³⁰³ cognate with which are rights to privacy, personal autonomy, equality and freedom. (It can be argued that respect for human dignity is dependent on the recognition of these other rights.) In exploring the question of whether a ban on cloning would violate some or all of these rights, arguments will be put forward based on personal autonomy and freedom of inquiry, as they emphasise the importance of maintaining individual choice.

The NBAC executive summary describes five separate grounds for arguments based on individual liberty as follows:³⁰⁴

- 1.) There is a general presumption in favour of individual liberty.
- 2.) Certain actions, such as human reproduction, are particularly personal and should remain free of constraint.
- 3.) As a society we ought not to limit the freedom of scientific inquiry.
- 4.) There are some reasons to create a child through somatic cell nuclear transfer so compelling they should transcend objections to the practice even if it should otherwise be prohibited.
- 5.) Many of the objections to this technique are largely speculative and unproven.

³⁰¹ Constitution of S. A. Section 7(1)

³⁰² Constitution of S. A. Section 7(2)

³⁰³ Constitution of S. A. Chapter 2 Bill of Rights Section 10.

³⁰⁴ NBAC Report 'Executive Summary Chapter 4 'Ethical Considerations' (note 14 above)

Grounds 4 and 5 were dealt with above.³⁰⁵ In this section the focus will be on the presumption of individual liberty³⁰⁶ and the particular rights entailed by this, as they are incorporated into the Bill of Rights of the South African Constitution. This presumption is supported in the United States where one of the most important values upheld in the field of medical ethics is a commitment to personal autonomy.³⁰⁷ Two questions will be addressed:

(i) Is a ban on cloning unconstitutional in terms of the right to privacy and the right to procreative liberty?

(ii) Is a ban on cloning unconstitutional in terms of a scientist's guaranteed right to freedom of scientific research?

Singh has put forward an argument for a constitutional right to procreate through the use of cloning technology, in terms of the fundamental right to privacy.³⁰⁸ This claim will now be examined.

4.2.1. Right to Privacy

Singh's claim is that the right to procreate through the use of cloning falls within the ambit of a right to privacy, the latter being one of mankind's most cherished rights.³⁰⁹ Privacy is seen as indispensable for the realisation of personal autonomy, which means 'the individual's right to choose how, within the parameters of the law, to live his or her life'.³¹⁰ Singh goes on to state: 'A personal procreative decision is without doubt or dispute a matter that falls within an individual's right to autonomy to make decisions

³⁰⁵ Chapter IV Section 4.1 – 4.15

³⁰⁶ Grounds 1, 2 and 3, which are entrenched in the Constitution of S. A. discussed above.

³⁰⁷ See for example discussions in Mappes and DeGrazia *op cit* 67 ('The patient has the right to make decisions regarding the health care that is recommended...' American Medical Association 1993); also 71-80. See also Beauchamp and Childress *op cit* 120-181

³⁰⁸ J.A.Singh 'Mankind's Right to Privacy in the Context of Procreative Liberty and Cloning' (unpublished) (2001)

³⁰⁹ Devenish *op cit* 135

³¹⁰ Devenish *op cit* 135-137

about their own reproductive conduct without interference from the state.’³¹¹ Devenish, quoting Thomas Emerson³¹² argues that the purpose of constitutionalising this right is to ‘protect certain areas of autonomy, identity and intimacy from intrusion by society at large’. Singh claims that cloning ‘falls within the ambit of reproductive conduct and thus by implication, procreative autonomy and liberty’.³¹³

Various international declarations and conventions provide evidence that reproductive rights and the right to privacy are globally recognised as highly respected rights.^{314 315 316}

³¹⁷ In the case of *Griswold v Connecticut*, the statute prohibiting contraception was invalidated by the United States Supreme Court.³¹⁸ In *Eisenstadt v Baird* Justice Brennan stated: ‘If the right to privacy means anything, it is the right of the individual, married or single, to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child.’^{319 320}

There are a number of questions that arise from the above discussion: (a) Is cloning a form of reproduction, falling within the ambit of the right to procreative liberty? (b) If it is, is the right to procreate an affirmative or positive act that protects procreative *acts*

³¹¹ Singh *op cit* 8

³¹² Thomas Emerson ‘The Right to Privacy and Freedom of the Press’ *Harvard Civil Rights-Civil Liberties Review* (1979) 341 in Devenish *op cit* 137

³¹³ Singh *op cit* 8

³¹⁴ European Convention for the Protection of Human Rights and Fundamental Freedoms Article 8 ‘Everyone has the right to have his or her private and family life...respected.’ cited in Devenish (note 58 above) 144 -5

³¹⁵ The Universal Declaration of Human Rights 1948 Article 16.1 refers to the ‘right to marry and found a family’

³¹⁶ The International Conference on Population and Development Programme of Action Cairo (1994) paragraph 7.3 provides that couples and individuals have the right to make decisions concerning reproduction free of discrimination, coercion and violence, cited in Singh *op cit* 9

³¹⁷ The Fourth World Conference on Women Platform for Action Beijing 1995 Paragraph 96: ‘Human rights of women include their right to have control over and decide freely and responsibly on matters related to their sexuality, including sexual and reproductive health.

³¹⁸ *Griswold v Connecticut* 381 U.S. 479 (1965)

³¹⁹ *Eisenstadt v Baird* 405 U.S. 438 (1972)

³²⁰ The right to privacy is entrenched in the Bill of Rights of the South African Constitution although reproductive rights are specified only under the right to bodily and psychological integrity. Nevertheless the rights listed under the right to privacy do not comprise a *numerus clausis* (as indicated by the term ‘includes’) and therefore it is submitted that reproductive rights could also fall under the right to privacy in the South African Constitution. See discussion below.

including both sexual reproduction and ART, or does it protect only sexual capacity – that is, from state mandated sterilisation or contraception.³²¹ (c) If it is a positive right is the State obliged to provide facilities for procreation, including ART's? (d) Does reproductive freedom entail both the right to choose not to have a child and thus the right to terminate a pregnancy,³²² as well as the right to choose to have a child by any means whatsoever? Commentators³²³ in their testimony presented to the NBAC argued that 'a commitment to individual liberty requires that individuals be left free to create children using somatic cell nuclear transfer if they so choose and if their doing so does not cause significant harm to others'.³²⁴ (d) Would there be a justifiable limitation on these rights, in terms of the limitation clause of the Constitution³²⁵ whereby a limitation on rights specified in the Bill of Rights must be 'reasonable and justifiable in an in an open and democratic society based on human dignity, equality and freedom'? Critics of cloning argue, justifiably, that important as personal autonomy is, competing values cannot be ignored. The principle needs to be weighed against competing principles such as beneficence and non-maleficence, as well as equality, virtue and dignity, which might justify the application of the limitation clause.³²⁶ What constitutes a legitimate limitation will be defined largely by the *boni mores* of the community.³²⁷

Singh states that in assessing government legislation concerning procreative liberty and cloning the courts are likely to question whether or not a fundamental right is involved.³²⁸ Given that some individuals can procreate in no other way than by cloning, is cloning not an ART deserving of procreative liberty protection? Is the right to clone not merely part and parcel of the right to make reproductive choices? And if so is the limitation clause applicable?

³²¹ Singh *op cit* 16

³²² Choice on Termination of Pregnancy Act of 1996

³²³ John Robertson 'A Ban on Cloning and Cloning Research is Unjustified' and Ruth Macklin 'Why We should Regulate - But Not Ban - the Cloning of Human Beings' NBAC Report (1997)

³²⁴ NBAC Report 'Executive Summary' *op cit* 75

³²⁵ Constitution of S. A. Section 36

³²⁶ These objections have largely been dealt with in the preceding sections of this paper.

³²⁷ Devenish *op cit* (148)

³²⁸ Singh *op cit* 26

One of the provisions of the Constitution is that which relates to freedom and security of the person, which provides that everyone has the right to bodily and psychological integrity, which includes the right to make decisions concerning reproduction.³²⁹ In addition section 14 states that: 'Everyone shall have the right to privacy'. A number of rights are included under this and although the right to privacy in reproductive matters is not expressly listed, it is not an exclusive list.³³⁰ Together these rights may be seen to confer procreative liberty on individuals. A category of actionable invasion of privacy is that of 'unreasonable intrusion into the private sphere'.³³¹ Would conceiving a child by means of cloning be considered an intimate aspect of personal life? If so, would banning of human cloning constitute unreasonable invasion into the private sphere and therefore be unconstitutional?

It has been pointed out above that no right is absolute but 'its scope is already delimited by the rights of the community as a whole,'³³² limited, that is, by every other right accruing to other citizens. This implies that while privacy is recognised in the 'truly personal realm',³³³ as a person moves into the community the scope of personal space diminishes.³³⁴ The question is whether or not procreative liberty falls entirely within the private realm – the inner sanctum of family life. Here opponents of cloning might argue that cloning is a violation of human dignity and therefore goes beyond the private realm. It is apparent from this that the constitutionality of cloning is to a large extent dependent on prevailing moral attitudes. Thus it could be argued that personal liberty and privacy should be constrained if a particular action, such as cloning, violates fundamental moral social values or conventions, and that *regulation* of such an action may produce less harm than *allowing* it. The invalidity of this position will be discussed in the following chapters of this paper. Moreover attitudes are constantly changing and courts should not be so

³²⁹ Constitution of S. A. Section 12 (2) (a)

³³⁰ The use of the term 'included' indicates it is not a *numerus clausis* Devenish *op cit* 138

³³¹ Singh *op cit* 24

³³² *Bernstein v Bester NO* (1996) 4 BCLR 449 (CC) Ackermann J. at 490D-e.par.79

³³³ *Bernstein v Bester op cit* Ackermann concluded that the right to privacy 'relates only to the most personal aspects of a person's existence, and not to every aspect within such a person's knowledge and experience'

³³⁴ As the saying goes, 'my right to swing my fist stops at someone else's nose'. Oliver Wendell Holmes.

shortsighted as to base restrictions on procreation on current negative sentiments.³³⁵ It was not so long ago that revulsion was felt at artificial insemination, test-tube babies,³³⁶ surrogacy³³⁷ and the like. Is cloning not merely a development of existing and currently acceptable artificial reproduction technology that has assisted thousands of parents in bringing much wanted children into the world? If so, the procreative rights of individuals to clone themselves or their partners should be protected against community or state interference. Can it not be argued that a prohibition of cloning would interfere with an individual's right to privacy in the sphere of human reproduction?

Opponents of this have claimed, for example, that SCNT is not covered by the right to procreative liberty because whereas assisted reproduction technologies are remedies for inability to produce sexually, SCNT is an entirely new means of bringing children into the world – asexual reproduction – ‘manufacture’, ‘making’ rather than ‘begetting’ and therefore immoral.³³⁸ But is this anything more than semantics? Surely the moral and ontological status of a child produced by means of cloning is no different from that of a child conceived sexually. And even if cloning is a completely different means of reproduction from sexual reproduction, it can serve an individual's interest in reproducing. New technology should not be rejected merely because it severs procreation from sex.

The question of the applicability of the limitation clause in allowing the State to prohibit cloning needs to be addressed. While it is clear that, like all rights, the rights to privacy and to procreative liberty may be legitimately limited in terms of the needs and *boni mores* (including moral values) of the community, there does not appear to be a reasonable and justifiable limitation on the right to cloning, in terms of the right to privacy. The arguments put forward in support of a justifiable application of the limitation - including the need to prevent harm - physical and psychological - to cloned

³³⁵ See discussion on changing ethical perspectives in Chapter II.

³³⁶ e.g. Pence *op cit* 26; Leon Kass ‘The New Biology: What Price Relieving Man's Estate?’ *Journal of the American Medical Association* 174 (November 1971) 779-788

³³⁷ Silver *op cit* 141

³³⁸ Gilbert Meilander ‘Begetting and Cloning’ in *Flesh of My Flesh* (note 10 above) 39-44

children; the need to protect existing family structures and values; and the necessity of avoiding abusive applications of human cloning; the question of an affront to human dignity, have already been dealt with above.³³⁹

While the current inadequacy of technology justifies the exercise of caution on human cloning this should not constitute a permanent limitation if cloning techniques are perfected. This is the reason for the introduction of the sunset clause proposed by the American National Bioethics Advisory Commission.³⁴⁰ It is submitted that other potential harms discussed above³⁴¹ do not provide good enough reasons for imposing a ban on cloning. Procreative cloning offers individuals who might otherwise never have offspring the opportunity for producing a family and producing a child with a genetic and biological link to themselves, without some of the difficulties attached to surrogacy and the problems of IVF especially in the case of third party donors.

³³⁹ Chapters III and IV.

³⁴⁰ *NBAC Report* Chapter 6 'Recommendations of the Commission' The Commission recommended that legislation prohibiting the creation of a child using somatic cell nuclear transfer should include a sunset clause to ensure that congress will review the issue after a specified time period (three to five years)' *op cit* 109

³⁴¹ Chapter III.

4.2.2. Right to Freedom of Scientific Research

A different moral right that may be at stake in the dispute about human cloning is the right to freedom of scientific inquiry and research in the acquisition of knowledge.³⁴² The issue is whether a legal prohibition on research into and the practice of human cloning would violate this right, which is entrenched in the Constitution.³⁴³ Furthermore, it has been argued that the Human Tissue Act³⁴⁴ as amended by the Human Tissue Amendment Act³⁴⁵ prohibits the cloning of a human being. In this connection two questions will be discussed: Does the Human Tissue Act indeed entail such a prohibition? Secondly, even if it does, does this clash with the constitutional right of scientists to freedom of scientific research?

The World Conference on Human Rights, Vienna Declaration and Programme of Action June 1993 states in Paragraph 11 that ‘everyone has the right to enjoy the benefits of scientific progress and its applications’ although there is a caution that ‘certain advances...in the biomedical and life sciences...may have potentially adverse consequences for the integrity, dignity and human rights of the individual.’³⁴⁶ In a report to the NBAC Andrews acknowledges that the U.S. places ‘great social import on the sanctity of knowledge and the value of intellectual freedom’.³⁴⁷ She cites United States senator, Tom Hankin who defends cloning research, stating that there are not

‘any appropriate limits to human knowledge. None whatsoever...to my friends Senator Bond and President Clinton who are saying, “Stop. We can’t play God,” I say “Fine. Take your ranks alongside Pope Paul V who in 1616 tried to stop Galileo”’.³⁴⁸

³⁴² Dan W. Brock ‘Cloning Human Beings’ *op cit* E-6

³⁴³ Act 108 of 1996 Section 16

³⁴⁴ Act 65 of 1983

³⁴⁵ Act No. 106 of 1984 Section 39A.

³⁴⁶ Published on the internet at: <http://www.igc.org/habitat/undocs/vienna/html>

³⁴⁷ Lori B. Andrews, ‘Cloning Human Beings: The Current and Future Legal Status of Cloning’ NBAC commissioned paper (1997) F-36

³⁴⁸ *ibid*

Hankin sees a limitation or ban on cloning research as demeaning to human nature.³⁴⁹

Section 16 of the Bill of Rights of the South African Constitution guarantees all citizens the right to freedom of expression, which includes 'freedom to receive or impart information and ideas' and 'academic freedom and freedom of scientific research'.³⁵⁰ Accordingly it can be argued that if scientists are prohibited from research in the field of their choice this would violate this clause of the Constitution.

Singh states that to claim this it must be asked: What is the ambit and scope of the right to freedom of expression?³⁵¹ Although freedom of expression is regarded as one of the most central rights to liberal democracy, no rights are absolute and again we may question whether it may be possible to invoke the limitation clause of the Constitution, especially in terms of the cautionary statement expressed above.³⁵²

Devenish, citing Tribe,³⁵³ discusses two jurisprudential justifications that have been offered for protecting freedom of speech and expression, a freedom fundamental to liberal democracy. These are:

- (a) The 'instrumental approach' whereby freedom of speech is not valued in itself but is regarded as a means to some further end, such as social stability or good government; and
- (b) The 'purposive approach' – whereby freedom of speech is valued as an end in itself with its own intrinsic value, reflective of what we perceive to be a good society.³⁵⁴

While there are limitations on the right to freedom of expression (in terms of prohibitions

³⁴⁹ *ibid*

³⁵⁰ Act 108 of 1996

³⁵¹ J.A.Singh 'Freedom of Expression: The Constitutionality of a Ban on Human Cloning in the Context of a Scientist's Guaranteed Right to Freedom of Scientific Research' (1999) 62 *THRHR* 577-591

³⁵² See note 320

³⁵³ Laurence Tribe *American Constitutional Law* (1998) 785

³⁵⁴ Devenish (1999) 'Freedom of Expression: The Marketplace of Ideas' *op cit* 189

of incitement to violence, advocacy of hatred etc.) Devenish argues that the framers of the South African Constitution did not intend to restrict the protection of freedom of expression 'to what was necessary for ensuring only democratic and accountable government'. This would constitute an instrumental approach. Rather, to allow the express recognition of artistic creativity as well as scientific freedom, a purposive approach has been adopted.³⁵⁵

Devenish and Singh³⁵⁶ include among the values and purposes of freedom of expression the following principles based on the writings of Thomas Emerson:

- i) developing individual self-fulfilment, intrinsic to the highly prized value of authenticity;
- ii) advancing knowledge;
- iii) discovering truth;
- iv) strengthening the ability to participate in decision-making;
- v) maintaining a stable community, reasonably balanced with social change through rational open decision-making processes, and balanced open discussion.

Singh argues that if the principle of developing individual self-fulfilment is applied to the question of the right to scientific research, where a scientist's interests are in genetics, a ban on research into cloning could constitute interference with self-fulfilment.³⁵⁷

However, given that rights are not absolute, are there justified limitations on this right? Any limitation must be 'reasonable' and 'justifiable', based on human dignity, equality and freedom in an open democratic society. Can the limitation of this right be justified?

A balance must be sought between the advancement of science and protection of the dignity and integrity of the individual. While it has already been argued that cloning itself

³⁵⁵ Devenish *op cit* 190

³⁵⁶ Devenish *ibid*; Singh (note 179 above) 581-2

³⁵⁷ Singh (1999) *op cit* 582

is not an affront to the dignity of the individual cloned, or the cloning source, nevertheless if cloning is to take place this will inevitably involve some experimentation. It is important that international declarations such as the Nuremberg Code and the Helsinki Declaration on Ethical Principles for Medical Research involving Human Subjects,³⁵⁸ to which South Africa is a signatory, be respected. Of particular importance for the issue of cloning research are the basic principles 16 – 19 in the Declaration. These principles state:

16. Every medical research project involving human subjects should be preceded by careful assessment of predictable risks and burdens in comparison with foreseeable benefits to the subject or others.

17. Physicians should abstain from engaging in research projects...unless they are confident that the risks have been adequately assessed and can be satisfactorily managed. Physicians should cease any investigation if the risks are found to outweigh the potential benefits or if there is no conclusive proof of positive and beneficial results.

18. Medical research...should only be conducted if the importance of the objective outweighs the inherent risks and burdens to the subject.

19. Medical research is only justified if there is a reasonable likelihood that the populations on which the research is carried out stand to benefit from the results of the research.

Another aspect crucial to any experimentation is the notion of voluntary informed consent. Singh suggests that for the right to conduct scientific research, the following tests must be met: (i) Is there voluntary consent from the test subject/donor of the somatic or germline cell? (ii) Is this *informed* consent? (iii) Is the procedure for therapeutic

³⁵⁸ World Medical Association Declaration of Helsinki, adopted by the 18th WMA General Assembly and most recently amended by the 52nd WMA general Assembly, Edinburgh, Scotland, October 2000.

purposes? (iv) Is there protection of the inherent dignity of the test subject/donor/clone? (v) Has an ethics committee approved the procedure? (vi) Is there an alternative viable and safe procedure?³⁵⁹ These tests seem to accord with Burchell's submission that medical experimentation demands a balance between the need to advance medical science and the need to protect the dignity and integrity of the individual.³⁶⁰ If answers to any of the first five questions are negative or the sixth is positive the scientist's right of freedom of scientific research into cloning may, Singh argues, be limited as reasonable and justifiable in an open democratic society based on human dignity, equality and freedom.³⁶¹

The requirement of approval by an ethics committee and the therapeutic requirement may cause problems. The research proposal would have a greater chance for approval if it can be shown that it is necessary to save a life, alleviate suffering or re-establish health. In this regard, it could be argued that restoration of reproductive ability is part of re-establishing health, or alleviating the suffering and mental anguish of childlessness. Where cloning is the only viable method of reproduction it should therefore be allowed, again with the proviso that risks are established as reasonable.

Brock entertains a somewhat different view. Agreeing that 'prohibiting and stopping scientific research and inquiry is a serious matter and precedent which should only be undertaken when necessary to prevent grave violations of human rights or to protect fundamental interests',³⁶² he nevertheless questions whether the fundamental moral issue is not *acquiring* the knowledge that would make cloning possible, but *using* that knowledge to effect cloning.³⁶³ Thus he argues that it would be possible to allow cloning research but prohibit cloning itself, a position that would not limit scientific freedom of research. If this argument is accepted, one would have to agree with Brock that the

³⁵⁹ Singh (1999) *op cit* 587.

³⁶⁰ Burchell 'Experimentation in Human Subjects: Protecting Dignity and Advancing Medical Science' 1988 *Acta Juridica* 216 cited in Singh (1999) *op cit* 586

³⁶¹ Constitution of S. A. Chapter 2 Bill of Rights Section 36

³⁶² Dan W. Brock 'Cloning Human Beings' *op cit* E-6

³⁶³ *ibid*

fundamental right that provides moral and legal support for permitting the *use* of human cloning is the right to procreative liberty in the context discussed above.³⁶⁴ However, it seems to lead to a rather untenable position, since it is questionable whether research into human cloning can in fact be carried out fully without at least some experimentation on the process itself, not just on animals, but on human beings.

An additional problem is section 39(A) of the Human Tissue Act ³⁶⁵, which prohibits 'genetic manipulation outside the human body of gametes or zygotes'.³⁶⁶ The first question is whether this in itself constitutes a prohibition of human cloning? Secondly, even if it does, if the Constitution itself does not prohibit cloning and, further, if such a prohibition can be shown to be unconstitutional, would the Human Tissue Act not then be in violation of the Constitution?

The purpose of the Human Tissue Act, as set out in the Preamble, is to provide for the removal of tissue, blood and gametes from living persons for medical purposes, as well as for the control of 'artificial fertilisation'. The latter is defined as 'the introduction by other than natural means of a male gamete or gametes into the internal reproductive organs of a female person for the purpose of human reproduction'.³⁶⁷ Section 39(A) states that 'no provision in this Act shall be so construed as to permit genetic manipulation outside the human body of gametes or zygotes'. Does this entail a prohibition, then, on human cloning?

In interpreting the Act it is necessary to determine its purpose, which Singh submits 'was only to regulate the process of the artificial fertilisation of a human being more efficiently'.³⁶⁸ If the courts were to use the purposive approach to interpretation of section 39(A) Singh argues that the purpose of this section could not be regarded as limiting the right to freedom of scientific inquiry.³⁶⁹ Furthermore, it is not clear that cloning involves

³⁶⁴ See above Section 4.2.1. Right to Privacy

³⁶⁵ Inserted into Act 65 of 1983 by Section 26 of The Human Tissue Amendment Act 51 of 1989

³⁶⁶ Act 65 of 1983 and Act 51 of 1989

³⁶⁷ Human Tissue Act 1983 *op cit* Preamble

³⁶⁸ Singh (1999) *op cit* 588

³⁶⁹ *ibid*

genetic manipulation of gametes or zygotes. Firstly, for artificial fertilisation the gametes of both sexes are required. The process of cloning by SCNT³⁷⁰ may not involve the use of gametes at all, or where gametes are used they may not be those of both males and females.³⁷¹ Moreover, even where the cell of an embryo is used, this cell is not a zygote. Thus it seems that cloning by SCNT would not contravene section 39(A) of the Act and therefore would not provide grounds for limitation of the right of scientists to freedom of research and inquiry.³⁷²

Furthermore, it can be argued that even if section 39(A) were interpreted as prohibiting human cloning, if a prohibition on cloning violates fundamental rights entrenched in the Constitution, then proponents of cloning could invoke the supremacy clause, which states that the 'Constitution is the supreme law of the Republic; law or conduct inconsistent with it is invalid, and the obligation imposed by it must be fulfilled'.³⁷³

Thus it could be concluded that neither the Human Tissue Act nor the Constitution itself directly prohibits cloning and that the right of scientists to freedom of research is acknowledged, including research into cloning, albeit for 'therapeutic' purposes only. Singh argues however that the courts are at present likely to adopt a more conservative position³⁷⁴, particularly in the light of current international legislation, which will be surveyed briefly in the next chapter. At present there is little consensus on the morality of cloning and a great deal of antipathy towards it. The prospects for stem cell cloning as therapeutic measures are better, however, and the United Kingdom has recently recommended legislation allowing this³⁷⁵. A more tolerant attitude to the latter may well promote a more positive attitude to cloning by SCNT.

³⁷⁰ as described in Chapter I

³⁷¹ *ibid*

³⁷² Constitution of S. A. Chapter 2 Bill of Rights Section 16 (d)

³⁷³ Constitution of S. A. Section 2

³⁷⁴ Singh (1999) *op cit* 590

³⁷⁵ 'U.K. Parliament Approves Cloning and Stem cell Research' (December 2000) published on the internet at: www.euthanasia.com/stemuk2.html

4.3 Religious perspectives on human cloning

A discussion of normative issues for and against human cloning would be incomplete without some mention of religious attitudes since there is no doubt that the moral views entertained by many people are underpinned by their religious beliefs. The central question is: to what extent should policies on cloning take cognisance of religious views?

In this regard there are a number of problems. Firstly, an essential feature of Western liberal democracy (of which South Africa professes to be an example) is the separation of Church and State.³⁷⁶ Such a state cannot for example espouse a single religious view, but on the contrary entrenches freedom of religion and freedom of conscience. Thus section 15 of the Bill of Rights³⁷⁷ states: '(1) Everyone has the right to freedom of conscience, religion, thought, belief and opinion.' It allows that 'religious observances may be conducted at state or state-aided institutions',³⁷⁸ but these must be 'conducted on an equitable basis' and attendance at them must be 'free and voluntary'.³⁷⁹ From this it seems clear that nobody should be forced to adopt any one religious approach, whether on cloning or any other matter. Thus even if all religions espoused the same views on cloning, for example, the view that reproductive cloning should be banned, this would not *in itself* be a sufficient basis for the implementation of a cloning prohibition.

This issue is further complicated in pluralistic societies such as South Africa where a multiplicity of religions and religious views prevail. Literature on religious attitudes towards human reproductive cloning reveals a diversity of positions even within a single religion and opinions vary dramatically. Illustrative of this is the NBAC commissioned paper, *Religious Perspectives on Human Cloning*,³⁸⁰ as well as the *NBAC Report*³⁸¹ in

³⁷⁶ Charles Taylor 'The Public Sphere' in *Philosophical Arguments* (1997) *op cit* 257-271

³⁷⁷ Constitution of S. A. Chapter 2 Bill of Rights

³⁷⁸ Constitution of S. A. Section 15 (2)

³⁷⁹ *ibid*

³⁸⁰ Courtney S. Campbell *NBAC Report op cit* D1-40

³⁸¹ *NBAC Report* Executive Summary: Chapter 3 'Religious Perspectives' *op cit* 39-42

which it is pointed out that although there are several major themes³⁸² prominent in Protestantism, Catholicism, Judaism and Islam, nevertheless ‘positions on human cloning are pluralistic in their premises, modes of argument, and conclusions’.³⁸³

Campbell³⁸⁴ summarises the diversity of views, dividing responses into four categories, which she applies both to research and to reproductive cloning itself. Using the metaphor of a traffic light, various religious traditions are analysed and the following are possible responses posited:

Red indicates a rejection of cloning and/or research. The accompanying policy would be a permanent prohibition or moratorium.³⁸⁵

Flashing red indicates the need to stop to evaluate risks before proceeding. The policy would be a temporary moratorium pending further inquiry into scientific and social questions.³⁸⁶

Amber indicates the need to proceed with caution, halting or slowing research and practice if necessary. The accompanying policy would be a regulatory model with the adoption of guidelines by relevant professional bodies.³⁸⁷

Green indicates permission for cloning research and / or cloning, provided those involved abide by norms of professional and social responsibility.³⁸⁸
(For example the general norms of biomedical research should be

³⁸² These include the view of human beings as created in the image of God; the belief in responsible human dominion over nature (including warnings ‘not to play God’); the belief in human dignity and destiny; and views about procreation and family life.

³⁸³ NBAC Executive Summary *op cit* Chapter 3

³⁸⁴ Campbell *op cit* D 19

³⁸⁵ Campbell *op cit* D 20

³⁸⁶ *ibid*

³⁸⁷ *ibid*

³⁸⁸ *ibid*

followed.) The policy adopted should be that of following professional guidelines.³⁸⁹

The following is a summary of the results of her survey:

(a) African - American Churches:³⁹⁰

cloning research – flashing red; cloning – red

(b) Hinduism:³⁹¹

cloning research – flashing red; cloning – flashing red

(c) Buddhism:³⁹²

cloning research – flashing red; cloning – amber

(d) Islam:³⁹³

cloning research – amber; cloning – flashing red

(e) Judaism:³⁹⁴

cloning research – amber; cloning – amber

(f) Native American culture:³⁹⁵

cloning research – flashing red; cloning – flashing red

(g) Orthodox Christianity:³⁹⁶

cloning research – red; cloning – red

(h) Protestant Christianity (Conservative Evangelical - about 15% of the American religious population, of which the largest body is the Southern Baptist Convention):³⁹⁷

cloning research – red; cloning – red

(i) Protestant Christianity (Mainline – the seven principal denominations being: Protestant (American Baptist), Christian Church (Disciples of Christ), Episcopal, Evangelical Lutheran, United Methodist, Presbyterian, United Church of Christ):³⁹⁸

³⁸⁹ Campbell *op cit* D 20-21

³⁹⁰ Campbell *op cit* D 21-22

³⁹¹ Campbell *op cit* D 25-27

³⁹² Campbell *op cit* D 22-25

³⁹³ Campbell *op cit* D 27-28

³⁹⁴ Campbell *op cit* D 28-30

³⁹⁵ Campbell *op cit* D 30-32

³⁹⁶ Campbell *op cit* D 32-33

³⁹⁷ Campbell *op cit* D 33-35

³⁹⁸ Campbell *op cit* D 35-37

cloning research – green/amber; cloning- amber

(j) Roman Catholic Christianity:³⁹⁹

cloning research – red ; cloning – red

The constraints of this paper do not permit an examination into the reasons for these positions, but for the purposes of the argument the survey has been quoted to indicate how varied religious views are. In fact the issue is more complex than the above indicates since even within each religious group there are differing attitudes, (for example, within Judaism there some scholars who would reject human cloning, while others would not explicitly condemn it)⁴⁰⁰. The survey indicates merely the main trends. It is therefore clear that religion offers no clear policy guidelines either for research or reproductive cloning itself.

To conclude this discussion of religious perspectives on human cloning mention must be made of a philosophical problem concerning the nature of religion itself, in particular the nature of religious justification. One of the most vexing claims to substantiate among religious arguments is that God would not or does not approve of a particular action, in this case human cloning. Apart from the obvious problem that the notion of cloning is not even mentioned in religious texts - the Bible, Koran etc. - with the result that any decisions in this regard are a matter of interpretation, rather than fact, the question arises as to what makes something good or just. Are things good because God approves of them or does God approve of them because they are good in themselves? This problem was identified far back in history by Plato in his Socratic dialogue *Euthyphro*⁴⁰¹ where Socrates claims that it is not the gods' approval of things that makes them good or just or holy.⁴⁰² Rather things are first in their very nature good or just or holy, or, conversely, evil, unjust and unholy; for this reason the gods approve or disapprove of them.⁴⁰³ Consequently it is our responsibility to decide whether something – human reproductive

³⁹⁹ Campbell *op cit* D 37-39

⁴⁰⁰ Campbell *op cit* D 30

⁴⁰¹ Plato 'Euthyphro' in *Greek Philosophy: Thales to Aristotle* R.E. Allen (ed) 1966 59-74

⁴⁰² Plato *op cit* 67-69

⁴⁰³ Plato *op cit* 69

cloning or research – is in itself good or just, independently of reference to God. The moral arguments that have been advanced in the preceding sections of this paper aim to do just that, making religious perspectives redundant, except in so far as they are indicative of the views of people in general. And even if a majority of religious views were anti-cloning (which is not conclusive from the NBAC survey or other literature) to appeal to the majority would be to commit a logical fallacy.⁴⁰⁴

A parallel can be drawn with the Choice on Termination of Pregnancy Act,⁴⁰⁵ which allows women to choose whether or not to have an abortion, but under no conditions makes abortion mandatory. Thus if abortion is contrary to one's religious beliefs it would not be considered, but it would be allowed for those who have no moral or religious objections. Similarly, if cloning or cloning research were to be made legal, nobody would be forced to submit to such procedures if they are contrary to moral or religious convictions. It would become a matter of choice.

On the basis of the above arguments it is submitted that there are so many differing religious views on human cloning that no clear policy emerges sufficient to justify a ban on cloning. Furthermore, even if there were consensus, this would not be sufficient to justify a particular policy since this would merely be appealing to majority opinion, which would not entail that this opinion is correct. It has been claimed that morality should be determined independently of religious opinions.

4.4 Conclusion

In this chapter it has been argued that an analysis of ethical arguments produces substantial support for human cloning. It is also submitted that a ban on cloning is

⁴⁰⁴ The fallacy involved in an appeal to the majority – *argumentum ad populum* – is a fallacy of relevance. The fact that a majority of people hold a certain view does not make it correct. The majority may be wrong.

⁴⁰⁵ Act 92 of 1996

unconstitutional and therefore illegal. In addition it has been submitted that although the moral views of many people are underpinned by their religious beliefs, the controversial nature of religious views precludes using religion to justify a ban on human cloning. The next chapter provides a brief account of current international cloning legislation in the United States, the United Kingdom, Australia and selected countries in Europe.

CHAPTER V

5. International Legislation

According to the Constitution of South Africa, when interpreting the Bill of Rights international and foreign law should be considered.⁴⁰⁶ For this reason a brief survey of current international human cloning legislation will be offered even though it will be submitted that South African legislators should not necessarily follow international trends.

Cloning legislation falls mainly into two categories, stem cell cloning for therapeutic purposes, and cloning for the purposes of creating a human being. The latter will be the focus of this chapter although reference will be made to stem cell cloning where more permissive policies are in place.

5.1. United States of America

Following the birth of Dolly in 1997, the National Bioethics Advisory Commission (NBAC) concluded that at that time (i.e. 1997) it was 'morally unacceptable for anyone in the public or private sector, whether in a research or clinical setting, to attempt to create a child using somatic cell nuclear transfer cloning.'⁴⁰⁷ The Commission recommended that federal legislation should be enacted to this effect, but with the inclusion of a sunset clause to enable Congress to review the situation after a specified period – three to five years.⁴⁰⁸ It was further recommended that any legislation enacted should not interfere with other areas of scientific research, in particular cloning of human DNA sequences and stem cell lines.⁴⁰⁹ In the event of such a legislative ban not being enacted, or if such a ban were enacted but subsequently lifted, it was recommended that

⁴⁰⁶ Constitution of S. A. Chapter 2 Bill of Rights Section 39(1) (b) and (c)

⁴⁰⁷ *NBAC Report* Chapter 6 'Recommendations of the Commission' *op cit* 109

⁴⁰⁸ *ibid*

⁴⁰⁹ *NBAC Report* Chapter 6 *op cit* 109

any attempt to clone a human child should be preceded by research trials governed by independent review and informed consent.⁴¹⁰ President Clinton banned federal funds for cloning research and called for a private sector moratorium, and proposed a Bill to Congress banning human cloning.⁴¹¹

Despite these recommendations, however, and despite the continued outcry against human cloning, the United States Congress has failed to enact legislation to ban or regulate human cloning. Moreover, it is apparent that attempts to clone human embryos by SCNT⁴¹² are being made in the United States at present. In July 2002 it was reported that six couples were trying to become parents of the first clones in an experiment led by the American fertility expert, Dr Panos Zavos.⁴¹³ Prior to this his Italian colleague, Dr Severino Antinori, a gynaecologist who in 1994 had used donor eggs and *in vitro* fertilisation to make a sixty-two-year-old woman pregnant,⁴¹⁴ had already claimed that a woman patient was eight weeks pregnant with a cloned baby.⁴¹⁵ More recently, Antinori claimed that the world's first cloned human baby will be born in January 2003.⁴¹⁶ In July 2002 the United States firm, Clonaid, run by the spiritual sect, the Raelian Movement, claimed to have implanted a cloned embryo in a Korean woman, resulting in a demand by the media in Seoul to pass laws against human cloning.⁴¹⁷ On the 27th December 2002 the Raelians announced that a cloned human baby, a little girl known only as 'Eve', had been born by Caesarean section, a clone of the woman who gave birth to her. The DNA fingerprinting is at present still to be verified.⁴¹⁸

⁴¹⁰ *ibid*

⁴¹¹ See above Introduction 3

⁴¹² Somatic Cell Nuclear Transfer

⁴¹³ *The Mercury* (Durban) 22 July 2002 6

⁴¹⁴ Robert A. Weinberg 'Of Clones and Clowns' *The Atlantic Monthly* 1 June 2002 published on the internet at: <http://www.theatlantic.com/issues/2002/06/weinberg.htm>

⁴¹⁵ *The Sunday Argus* (Cape Town) 7 April 2002 21; *Sunday Times* 7 April 2002

⁴¹⁶ *The Mercury* (Durban) 27 November 2002 8

⁴¹⁷ Reported on the internet by CNN.com/WORLD at <http://asia.cnn.com/2002/WORLD/asiapcf/east/07/25/korea.clone.rent/>

⁴¹⁸ *The New York Times* 27 December 2002. 'Religious Sect Says It Will Announce the First Cloned Baby' published on the internet at: <http://www.nytimes.com/2002/12/27/science/27CLON.html?todaysh headlines>

Following the Clinton proposals a number of Bills have been proposed but so far although there has been approval by the House of Representatives, no anti-cloning Bill has yet received Senate approval. These proposals include the following:

- a) The Feinstein-Kennedy Bill (1998), co-sponsored by Senators Dianne Feinstein and Edward Kennedy, which permits the creation of cloned embryos by SCNT for research purposes only, but prohibiting implantation for reproduction.⁴¹⁹
- b) The Specter-Harkin Bill (2001), proposed by Senators Arlen Specter and Tom Harkin, which bans implantation of human embryos produced by SCNT.⁴²⁰

Cloning legislation considered by the 107th Congress included the following:

- a) The Cloning Prohibition Act of 2001 (Greenwood)⁴²¹
- b) The Human Cloning Prohibition Act of 2001 (Brownback / Weldon)⁴²²
- c) The Human Cloning Prohibition Act of 2001 (Ehlers)⁴²³
- d) The Human Cloning Prohibition Act (Campbell) 2001⁴²⁴
- e) The Human Cloning Research Prohibition Act (Stearns) 2001⁴²⁵
- f) The Ban On Human Cloning Act (Kerns) 2001⁴²⁶
- g) The Human Cloning Prohibition Act of 2001 (Weldon).⁴²⁷

In essence all the above suggested legislation proposed a ban on reproductive human cloning or research into reproductive human cloning. To date only the Human Cloning Prohibition Act of 2001 proposed by Weldon has been passed by the House of

⁴¹⁹ S.1758 D. Hunt 'The Cloning Landscape: A Look at Impending Legislation' published on the internet at: www.gene-watch.org/magazine/vol15/15-3cloning.html 1

⁴²⁰ S.1893 *ibid*

⁴²¹ proposed by Rep. Greenwood [HR2172] published on the internet at: www.faseb.org/opar/ppop/cloningleg107.html

⁴²² proposed by Senator Brownback (S780) and Rep. Weldon [HR1644] *ibid*

⁴²³ proposed by Rep. Ehlers [HR1608] *ibid*

⁴²⁴ proposed by Senator Campbell (S704) *ibid*

⁴²⁵ proposed by Rep. Stearns [HR1372] *ibid*

⁴²⁶ proposed by Rep. Kerns [HR1260] *ibid*

⁴²⁷ proposed by Rep. Weldon [HR2505] *ibid*

Representatives (July 2001), but it has still not been approved by the Senate,⁴²⁸ cloning legislation being in a holding pattern in the Senate behind energy, the budget and other matters still pending.⁴²⁹

Stem cell cloning has also been debated but as yet there are no clear policy decisions. In August 2001 President Bush spoke out in favour of allowing the government, with certain restrictions, to fund embryonic stem cell research.⁴³⁰ In April, however, he rejected both human reproductive cloning and therapeutic cloning,⁴³¹ revealing a somewhat ambiguous position. This ambivalence is further reflected in the recommendations made on 9 July 2002 by the President's Council on Bioethics for a total ban on reproductive cloning and a four-year moratorium on therapeutic cloning.⁴³²

The Senate hearings reflect the difficulties that arise in trying to draw a distinction between embryos created for the purpose of implantation and gestation - reproductive cloning - and embryos created for the purposes of research.⁴³³ It is apparent that Senators are reluctant to impose a ban on human cloning that would interfere with scientific research, or would, by slowing efforts to clone human embryos, deny lifesaving treatment to sufferers everywhere. Senators are ambivalent since they do not wish to be seen as 'one of the cloners',⁴³⁴ nor do they wish to be accused of obstructing research that may produce cures for numerous dreaded diseases.⁴³⁵ Hunt points out that an attempt to allow cloning of embryos merely for research is likely to produce thousands of cloned embryos which, without careful overseeing and regulation, will inevitably be used for reproductive

⁴²⁸ D. Hunt *op cit* 30 July 2002 1;

Washington Post 19 June 2002 'Human Cloning Ban Sidetracked' published on the internet at: www.washingtonpost.com/wp-dyn/articles/A7667-2002Jun18.html

⁴²⁹ *ibid*

⁴³⁰ 'Bush OKs Stem Cell Funding' Wired News published on the internet at: www.wired.com/news/medtech/0,1286,45975,00.html

'U.S. Rule on Stem Cell Studies Lets Researchers Use New Lines' *The New York Times* 7 August 2002 published on the internet at: www.nytimes.com/2002/08/07/politics/07STEM.html?todaysh headlines

⁴³¹ 'Bush Comes Out Against Cloning' 11 April 2002 published on the internet at <http://iafrica.com/news/worldnews/925740.htm>

⁴³² 'Human Cloning: Recent Developments - 1997 to the Present Time' published on the internet at: www.religioustolerance.org/clo_rece.htm

⁴³³ D. Hunt *op cit* 1

⁴³⁴ D. Hunt *op cit* 2

⁴³⁵ *ibid*

cloning.⁴³⁶ Hence the difficulty in allowing research without reproduction. How can one avoid throwing out the baby with the bathwater?

As Francis Fukuyama points out, the debate about biotechnology is polarised. Libertarians argue that society should not put constraints on new technology, while others with moral concerns about biotechnology, including those with strong religious convictions, environmentalists, opponents of new technology or those with eugenicist concerns, have proposed banning not just human reproductive cloning, but even *in vitro* fertilisation and stem cell research.⁴³⁷

In conclusion, although the United States has so far failed to enact Federal legislation prohibiting human cloning, some nineteen states have introduced anti-cloning bills,⁴³⁸ and several, including California, Louisiana, Michigan and Rhode Island, have passed anti-cloning laws.⁴³⁹ California, for example, has penal prohibitions on 'cloning a human being',⁴⁴⁰ as well as an interim five-year moratorium to allow for further reflection on policy issues.⁴⁴¹ Cloning, according to California law, is defined as the process of 'creating or attempting to create a human being by transferring the nucleus from a human cell from whatever source'⁴⁴² into a human egg cell from which the nucleus has been removed for the purpose of initiating a pregnancy.⁴⁴³ The inclusion of the phrase 'from whatever source' effectively prohibits embryo, foetal and adult cell nuclear transfer. Bonnicksen points out that there is considerable variation in cloning bills and laws in

⁴³⁶ *ibid*

⁴³⁷ Francis Fukuyama (2002) 'How to Regulate Science' published on the internet at: www.thepublicinterest.com/current/article1.html 1-11. See also his testimony at the House of Representatives Hearing of the Human Cloning Prohibition Act of 2001 and the Cloning Prohibition Act of 2001 published on the internet at: <http://energycommerce.house.gov/107/action/107-41.pdf> 87-91

⁴³⁸ Andrea L. Bonnicksen 'Crafting Cloning Policies' in B. MacKinnon (ed.) *Human Cloning op cit* 119

⁴³⁹ N.M.de S. Cameron: The Wilberforce Forum 'On the Cloning of Human Beings: Some International Perspectives' published on the internet at: <http://www.breakpoint.org/WilberforceForum/ChannelRoot/Initiative.../On+The+Cloning+Of+Human+Beings.ht> 10 August 2002

⁴⁴⁰ 'Laws, Conventions & Guidelines: Human Cloning: Cloning Legal Summary' published on the internet at: <http://strategis.ic.gc.ca/SSG/bb00003e.html> 1-3 (site visited 15 March 2002)

⁴⁴¹ *ibid*

⁴⁴² emphasis added

⁴⁴³ Cal. Statutes 1997, Chapter 688 (S.B. 1344), Section 5 cited in Bonnicksen *op cit* 119

different states, as well as varied definitions of cloning,⁴⁴⁴ with the result that it is not always clear what exactly is prohibited, thus adding to the confusion.

5.2. United Kingdom legislation

In 1998, a year after the birth of Dolly, the Human Genetics Advisory Commission (HGAC) and the Human Fertilisation and Embryology Authority (HFEA) undertook a public consultation on human cloning,⁴⁴⁵ particularly in the context of the Human Fertilisation and Embryology Act of 1990.⁴⁴⁶ The HFEA was set up as a statutory body following the passage of the latter act, its chief tasks being to license and monitor clinics that carry out *in vitro* fertilisation, donor insemination and human embryo research.⁴⁴⁷

Section 3 (3) (d) of the 1990 Act prohibits the nuclear substitution of any cell while it is part of an embryo,⁴⁴⁸ but the technique used to create Dolly involves nuclear substitution into an egg, not an embryo. Thus it is not clear that cloning by SCNT is specifically covered by this clause.⁴⁴⁹ Nevertheless the Department of Health and the HFEA took legal opinion from Counsel and were satisfied that the Act does allow the HFEA to regulate (not necessarily ban) SCNT, through its licensing system.⁴⁵⁰ The *Report* concluded that the Human Fertilisation and Embryology Act was effective in dealing with new developments relating to human cloning and that the safeguards in the Act were adequate to prohibit human reproductive cloning in the U.K.⁴⁵¹ The *Report* suggested further that the U.K. Government consider the possibility of introducing legislation that would explicitly ban human reproductive cloning irrespective of the technique used, in order that 'the full ban would not depend upon the decision of a statutory body (the

⁴⁴⁴ Bonnicksen *op cit* 120

⁴⁴⁵ *Human Genetics Advisory Commission (HGAC) Report: Cloning Issues in Reproduction, Science and Medicine* (December 1998) published on the internet at: http://www.dti.gov.uk/hgac/papers/papers_d.htm 1-36

⁴⁴⁶ *ibid*

⁴⁴⁷ *HGAC Report* (1998) *op cit* 4

⁴⁴⁸ *HGAC Report* (1998) *op cit* 8

⁴⁴⁹ *ibid*

⁴⁵⁰ *ibid*. (Parallels can be drawn with debates surrounding the interpretation of the South African Human Tissue Act of 1983. See above Chapter IV)

⁴⁵¹ *HGAC Report* (1998) *op cit* 2

HFEA) but would itself be enshrined in statute'.⁴⁵² The *HGAC Report* also recommended that consideration should be given to specifying in regulations under the 1990 Act two further purposes for the use of human embryos in research, namely the development of methods of therapy for mitochondrial disease,⁴⁵³ and the development of therapeutic treatments for diseased or damaged tissues or organs.⁴⁵⁴

In a response to the *HGAC Report* the Government reaffirmed its 'unequivocal position that the deliberate cloning of individual humans is ethically unacceptable'.⁴⁵⁵ It stated its intention to review the possible need for legislation⁴⁵⁶ and expressed confidence in the ability of the HFEA to monitor embryo research.⁴⁵⁷

In December 2000 British lawmakers approved a government move to allow research into the use of human embryos as a source of stem cells despite earlier opposition from the European Union.⁴⁵⁸ A vote by members of parliament approved the proposal by 366 – 174 votes.⁴⁵⁹ Subsequently, however, the U.K. government enacted The Human Reproductive Cloning Act of 2001,⁴⁶⁰ which declared: 'A person who places in a woman a human embryo which has been created otherwise than by fertilisation is guilty of an offence'.⁴⁶¹

Baroness Mary Warnock, whose 1984 Warnock Report formed the basis of the Human Fertilisation and Embryology Act of 1990,⁴⁶² criticised the way the government rushed to outlaw reproductive human cloning although she said that it would be wrong to attempt

⁴⁵² *ibid*

⁴⁵³ See Chapter I 16

⁴⁵⁴ *HGAC Report* (1998) *op cit* 2

⁴⁵⁵ 'Government Response to the Report by the HGAC and HFEA on Cloning Issues in Reproduction, Science and Medicine' June 1999 published on the internet at: <http://www.doh.gov.uk/cloning.htm> 1-4

⁴⁵⁶ Government Response *op cit* 3

⁴⁵⁷ *ibid*

⁴⁵⁸ 'European Deputies Slam British Embryo Cloning Call' published on the internet at: <http://www.bioindustry.org/newscast/current/83.html>

⁴⁵⁹ 'UK Parliament Approves Cloning and Stem Cell Research' 16 September 2000 published on the internet at: <http://euthanasia.com/stemuk2.html>

⁴⁶⁰ Human Cloning Reproductive Act of 2001 c. 23 published on the internet at: <http://www.hmsa.gov.uk/acts/2001/20010023.htm>

⁴⁶¹ *ibid*

⁴⁶² *HGAC Report* (1998) *op cit* 7

human cloning at present because it is unsafe.⁴⁶³ Nevertheless, she said that in some cases of infertility where other methods had failed, it should be allowed and was of the opinion that it would inevitably happen one day.⁴⁶⁴

5.3 Australia

Australia has in place some laws concerning human cloning at national and provincial level. At national level cloning processes are excluded from patent laws on the grounds that it 'would either be immoral or contrary to public order or public policy'.⁴⁶⁵ *The Code of Ethical Practice for Biotechnology* in Queensland attempts to strike a balance in prohibiting cloning of a complete human being but making provision for research, stating:

'We will not conduct research into the cloning of entire human beings. However, we understand that research may continue into cloning genes and cells for medical purposes, for example in connection with the possible regeneration of damaged or diseased tissue, where such research has been approved by the relevant Human Research Ethics Committee and conforms with relevant State and Commonwealth Laws.'⁴⁶⁶

Section 64 of the *Queensland Code* notes that Queensland was in the process of drafting The Cloning of Humans Bill 2001 to prohibit cloning of human beings and imposing high penalties for breaches.⁴⁶⁷ In a commentary on this *Code* it is stated that 'Australian health Ministers have agreed to ensure a comprehensive ban on cloning of human beings within their jurisdictions'.⁴⁶⁸

⁴⁶³ 'UK Fertility Expert Envisages Limited Human Cloning' Reuters Wire 27 July 2002 published on the internet at: <http://www.miami.com/mld/miami/news/politics/3747668.htm>

⁴⁶⁴ *ibid*

⁴⁶⁵ 'Laws, Conventions and Guidelines: Human Cloning' *op cit* 2

⁴⁶⁶ *Code of Ethical Practice for Biotechnology in Queensland* Section 63 published on the internet at : http://www.biotech.qld.gov.au/corporate/coe_pt3.pdf

⁴⁶⁷ *Code of Ethical Practice for Biotechnology in Queensland op cit* Section 64

⁴⁶⁸ *Code Of Ethical Practice for Biotechnology in Queensland op cit* 06

At a Council of Australian Governments' meeting in April 2002 the Council agreed on the introduction of nationally consistent legislation 'to ban human cloning and other unacceptable practices.'⁴⁶⁹ The following were the terms of the agreement concerning cloning:⁴⁷⁰

1.1 A person must not:

- a) create, or attempt to create, a human clone by means of a technological or other artificial process; or
- b) cause a human embryo clone to be placed in the body of a human or animal for any period of gestation.⁴⁷¹

1.2 For the purposes of establishing that a human clone or human embryo clone is a genetic copy:

- a) it is sufficient to establish that the set of genes in the nucleus of the human cell has been copied; and
- b) it is not necessary to establish that the copy is an identical genetic copy.

1.3 It is not a defence that the human clone or human embryo clone did not or could not survive.

'Human clone' means a human that is a genetic copy of another living or dead human.

'Human embryo clone' means a human embryo that is a genetic copy of a living or dead human.

'Embryo' is a developing organism from the completion of fertilisation, or initiation of development by any other means, until eight weeks when the organism becomes known as a foetus.

⁴⁶⁹ Council of Australian Governments' Meeting: April 2002 published on the internet at: http://www.dpmpc.gov.au/docs/coag050402_cloning.cfm

⁴⁷⁰ *ibid*

⁴⁷¹ Does this mean that if a human clone could be brought to term in a laboratory or artificial uterus this would be acceptable? This would not seem to be the intention but the wording leaves this open as a possibility.

Provision is made for the use of excess embryos produced by ART for research purposes, as well as for the use of stem cells.⁴⁷² Prime Minister John Howard and eight state and territory leaders agreed that research would initially be limited to 16000 frozen embryos no longer needed for IVF programmes, provided consent has been obtained in accordance with general ethical guidelines.⁴⁷³ These policies are indicative of an attempt to strike a balance between a prohibition of reproductive cloning while allowing research and its benefits. Can this be done?⁴⁷⁴

5.4. European countries, other than the United Kingdom – selected examples:

The Council of Europe Additional Protocol to the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine on the Prohibition of Cloning Human Beings was opened for signature on 12 January 1998.⁴⁷⁵ As of 11 August 2002 twenty-nine countries of Europe had signed the declaration and eleven had ratified it.⁴⁷⁶ Article 1 of the Protocol states:

1. Any intervention seeking to create a human being genetically identical to another human being, whether living or dead is prohibited.
2. For the purpose of this article, the term human being 'genetically identical' to another human being means a human being sharing with another the same nuclear gene set.⁴⁷⁷

⁴⁷² Council of Australian Governments' meeting *op cit* Sections 5-10

⁴⁷³ *Health Canada* (discussing the Australian developments): 'Proposed Act Respecting Assisted Reproduction - The International Scene' published on the internet at: http://www.hc-sc.gc.ca/english/media/releases/2002/2002_34bk7.htm 30 July 2002

The Canadian Parliament itself after many years of debate agreed on a Human Reproduction Research Act 9 May 2002 in which human cloning is prohibited but stem cell research on embryos is permitted, but this attempt at a compromise has antagonised anti-abortionists. Wayne Kondro 'Canadian Parliament Finally Agrees Human Reproduction Research Act' *Lancet* (25 May 2002) Vol. 359 Issue 8320 1839

⁴⁷⁴ See Hunt's comments above.

⁴⁷⁵ <http://conventions.coe.int/treaty/EN/STEList.asp?CM=8>

⁴⁷⁶ 'Council of Europe – Chart of Signatures and Ratifications of a Treaty' published on the internet at: <http://conventions.coe.int/Treaty/EN/searchsig.asp?NT=168+CM=8+DF=11/08/2002>

⁴⁷⁷ <http://conventions.coe.int/Treaty/en/Treaties/Html/168.htm>

As stated in the preamble to the Protocol, reproductive cloning is prohibited in terms of the problems of 'instrumentalisation of human beings', 'serious difficulties of a medical, psychological and social nature' and 'to protect the dignity and identity of all human beings',⁴⁷⁸.

There is debate as to whether the Protocol is legally binding. Bonnicksen argues that it would be legally binding on the nations that sign and ratify it.⁴⁷⁹ Andrea Dahmen, however, spokesperson for the Commission, stated:

'This is an area reserved for the member states themselves...member states have full...and sole competence when it comes to policing, law enforcement and creating laws and it's up to them to follow their responsibility.'⁴⁸⁰

Moreover, it is submitted that, in terms of arguments put forward in Chapters III and IV, the difficulties that are the basis of the above Protocol are surmountable. For example, the Protocol recognises that cloning by SCNT does not in fact produce genetically identical individuals, and it has been argued that identity is not a serious moral problem. Certainly individuals that may be produced by SCNT would be less identical than identical twins.⁴⁸¹

Denmark

Denmark, one of the signatories to the above Protocol, already had in place the Danish Act on Assisted Procreation,⁴⁸² which states:⁴⁸³

⁴⁷⁸ *ibid*

⁴⁷⁹ Bonnicksen *op cit* 121

⁴⁸⁰ European Centre for Law and Justice: Europeans Want to Draw up Global Cloning ban published on the internet at: http://www.eclj.org/news/euro_news_010813_europeans.asp 16 October 2001 1-2

⁴⁸¹ See Chapter I Section 1.5

⁴⁸² Act No. 460 of 10 June 1997

⁴⁸³ *Cloning – Statement from the Danish Council of Ethics* Appendix 1: Legal basis for Reproductive and Therapeutic Cloning published on the internet at: http://www.etiskraad.dk/publikationer/Kloning_UK/app1.htm 17 October 2001 1-7

‘It shall be prohibited simultaneously or subsequently to implant identical unfertilised or fertilised ova into one or several women for the purpose of procreation’.⁴⁸⁴

The interpretation offered by the Danish Council on Ethics is that this is sufficient to prohibit a doctor from treating a woman with reproductive cloning. The Council submits that the above provision covers cases not only of embryo splitting but also cases ‘in which it is attempted to induce cells from an individual already alive to resume production of tissue in a fertilised egg with a view to giving birth to an individual that is genetically (almost) identical with an individual already alive (somatic cell nuclear transfer)’.⁴⁸⁵ The Act does not mention therapeutic cloning and the Council states that according to the present legal position a doctor will be able to offer treatment with therapeutic cloning without contravening existing Acts.⁴⁸⁶ The Act further permits experiments on human fertilised ova and reproductive cells ‘when they serve to improve assisted reproduction techniques or pre-implantation diagnosis’.⁴⁸⁷ In terms of the current legal position a doctor will also be able to offer treatment involving therapeutic cloning using embryonic stem cells from aborted fetuses⁴⁸⁸ but, paradoxically according to the interpretation, research using embryonic stem cells is not permitted.⁴⁸⁹ In its summary the Danish Council expresses awareness of these contradictions and indicates that some legal resolution of this conflict is required.⁴⁹⁰ This is indicative of the general problems facing legislators trying to formulate a balanced policy.

⁴⁸⁴ *ibid* 1

⁴⁸⁵ *Cloning – Statement from the Danish Council of Ethics op cit 2*

⁴⁸⁶ *Cloning – Statement from the Danish Council of Ethics op cit 3*

⁴⁸⁷ *Cloning – Statement from the Danish Council of Ethics op cit 3*

⁴⁸⁸ *Cloning – Statement from the Danish Council of Ethics op cit 4*

⁴⁸⁹ *ibid*⁴⁸⁹ *Cloning – Statement from the Danish Council of Ethics op cit 5*

⁴⁹⁰ *Cloning – Statement from the Danish Council of Ethics op cit 5*

France

France, also a signatory to the above Protocol⁴⁹¹, in June 2001 adopted a draft law to ban reproductive human cloning.⁴⁹² The draft law, if passed, would permit therapeutic cloning and would also allow, with controls, scientific research in embryo and stem cells.⁴⁹³ The French and German governments have together requested the United Nations to negotiate an international treaty banning human cloning world-wide.⁴⁹⁴

Germany

The Germans banned anything resembling human reproductive cloning more than ten years ago in terms of the Embryo Protection Act of 1990⁴⁹⁵ and have strict rules on embryo research, probably due to the overall German backlash against the previous Nazi-era eugenics research.⁴⁹⁶ In May 2002 Chancellor Gerhard Schroder argued in favour of research on in vitro embryos and suggested that testing of pre-born embryos could prevent the birth of sick or deformed babies.⁴⁹⁷ President Rau, on the other hand rejected these proposals stating that: 'Eugenics, euthanasia and selection are labels that are linked to bad memories in Germany'.⁴⁹⁸ In the meantime Schroder has set up a commission of scientists, philosophers, clergymen and other experts to debate these issues.⁴⁹⁹

⁴⁹¹ Council of Europe Additional Protocol to the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine on the Prohibition of Cloning Human Beings 1998. See 5.4.

⁴⁹² Cnn.com – 'International Opposition to Cloning' published on the internet at:

<http://www.cnn.com/2001/WORLD/europe/09/07/clone.legislation/>

⁴⁹³ The Slavic Centre for Law and Justice 'France and Germany Seek International Cloning Ban' published on the internet at: http://www.sclj.org/news/nr_010823_intl_cloning.asp 1-2

⁴⁹⁴ The European Centre for Law and Justice *op cit* 1

⁴⁹⁵ Slavic Centre for Law and Justice *op cit* 1-2

⁴⁹⁶ Slavic Centre for Law and Justice *op cit* 1

⁴⁹⁷ Slavic Centre for Law and Justice *op cit* 2

⁴⁹⁸ *ibid*

⁴⁹⁹ *ibid*

Norway

Norway, also a signatory to the Council of Europe Additional Protocol,⁵⁰⁰ has legislation prohibiting human cloning in terms of the Norwegian Act Relating to the Application of Biotechnology in Medicine.⁵⁰¹ The 1998 Amendment to the Act Relating to the Application of Biotechnology in Medicine⁵⁰² bans human reproductive cloning.

According to a report by the Center for Genetics and Society (U.S.A.) as of March 2002 some 33 countries have formally banned reproductive human cloning, but this represents only 16% of all countries and less than one third of the world's population.⁵⁰³

5.5 Other approaches

A different approach to cloning policy is what Bonnicksen describes as one that would 'appeal to aspirational principles or voluntary limits that would guide action'⁵⁰⁴ but would allow space for adjustment as technology develops and in the likelihood that cloning becomes safer. Examples of such an aspirational approach include moves by the World Medical Association and the General Assembly of the World Health Organisation (WHO) to call for a moratorium, but not a ban, on human cloning, although the latter declared that cloning to replicate⁵⁰⁵ individuals is 'ethically unacceptable and contrary to human integrity and morality'.⁵⁰⁶

Another significant aspirational document is the Universal Declaration on the Human Genome and Human Rights, a UNESCO⁵⁰⁷ document prepared in time for the Fiftieth Anniversary Celebration of the Universal Declaration of Human Rights in 1998.⁵⁰⁸ The

⁵⁰⁰ Council Of Europe 'Chart of Signatures' *op cit* See footnote 474

⁵⁰¹ No. 56 of 5 August 1994 cited in 'Laws, Conventions and Guidelines: Human Cloning' – link published on the internet at: <http://strategis.ic.gc.ca/SSG/bb00009e.html#norl.55> 5 December 2000

⁵⁰² Act No. 22 of 27 March 1998

⁵⁰³ <http://www.genetics-and-society.org/policies/other/cloning.html> site visited 11 August 2002

⁵⁰⁴ Bonnicksen *op cit* 120

⁵⁰⁵ It has already been argued in earlier chapters of this paper that cloning by SCNT is not replication.

⁵⁰⁶ cited in Bonnicksen *op cit* 120

⁵⁰⁷ United Nations Educational, Scientific and Cultural Organisation

⁵⁰⁸ published on the internet at: <http://www.un.org/rights/50/decla.htm>

aim of the document is to balance scientific advancement with human rights and dignity.⁵⁰⁹ One of its recommendations is that 'practices contrary to human dignity, such as cloning, shall not be permitted'⁵¹⁰ but generally the document's concern is with principles rather than specific techniques or practices, and there is no mention, for example, of germ-line genetics or therapy. It is also only aspirational in that it is not legally binding on the 186 nations that were signatories.⁵¹¹ In any event this paper argues that cloning is not contrary to human dignity.

5.6. Relevance of Foreign Law

The purpose of this chapter has been to illustrate that although there is a general trend world-wide to prohibit human cloning, at least at present, legislation varies substantially from country to country and it is evident that considerable difficulty is being experienced in drawing up legislation that will prohibit reproductive cloning yet will not interfere with potential benefits of cloning research and therapeutic cloning.

A further question to be examined is to what extent South African courts need take cognisance of the above attempts in foreign and international law to prohibit human reproductive cloning, in accordance with the requirement that such laws should be considered when interpreting the Bill of Rights of the South African Constitution.⁵¹²

It has already been argued⁵¹³ that a prohibition on cloning in South Africa may be unconstitutional in terms of the right to privacy, which incorporates procreative liberty, and the right of scientists to freedom of research, a subset of academic freedom. If these rights are entrenched in the constitutions of the states mentioned above, would a ban on cloning in these states be unconstitutional, and therefore relevant for consideration by South African courts? Two questions must be asked: (i) Are these rights recognised?

⁵⁰⁹ Bonnicksen *op cit* 121

⁵¹⁰ *ibid.* This was not incorporated into the Universal Declaration on Human Rights when the latter was introduced in 1948 when cloning was unheard of.

⁵¹¹ *ibid*

⁵¹² Constitution of South Africa Chapter 2 Bill of Rights Section 39 (1) (b) and (c)

(ii) If they are, can a ban on cloning be justified? It is submitted that South African courts may take such bans into account only if these two requirements are met. These issues will be discussed in relation to the above-mentioned states.

5.6.1. United States of America

The first ten amendments to the U.S.A. Constitution constitute the Bill of Rights.⁵¹⁴ The First Amendment, which guarantees the right to freedom of speech,⁵¹⁵ may be interpreted as protecting a right to scientific inquiry and research. Thus a lower federal court has suggested that scientists and academics have 'a right to do research and advance the state of man and knowledge'.⁵¹⁶ But Andrews claims that even if the First Amendment is found to be applicable to scientific inquiry, research could be regulated to prevent undue risk of harm without being unconstitutional.⁵¹⁷ This entails the question of harm being assessed in order to justify such a prohibition. One of the aims of this paper has been to argue that the likelihood of harm as a result of research into, and implementation of, human cloning is insufficient to justify a total ban. Hence even if the U.S.A. courts decide that cloning research is unconstitutional it is submitted that this is based on faulty reasoning that should not be applied in South Africa.

A second question is whether reproductive rights are constitutionally protected and if so does this include reproduction by cloning? According to the Fourth Amendment⁵¹⁸ people have a right 'to be secure in their persons, houses, papers and effects...' and this has been used as the basis for judgements by the U.S. Supreme Court to the effect that reproductive decisions are constitutionally protected under constitutional rights to

⁵¹³ See Chapter IV above

⁵¹⁴ A.P. Blaustein & G.H. Flanz *Constitutions of the Countries of the World: United States of America* (1990) (viii)

⁵¹⁵ Article [I] Amendment to the Constitution of the United States of America 1787

⁵¹⁶ *Henley v Wise* 303 F.Supp.62 (N.D. Ind.1969) cited in Lori B. Andrews (1997) 'Cloning Human Beings: The Current and Future Legal Status of Cloning' *NBAC Commissioned Paper F-6*

⁵¹⁷ Andrews *op cit* F-6

⁵¹⁸ Article [IV] Amendment to the Constitution of the United States of America 1787

privacy⁵¹⁹ and liberty.⁵²⁰ For example in *Roe v Wade*⁵²¹ the right to privacy was used as the basis for the judgement that women have a right to terminate a pregnancy. In *Griswold v Connecticut*⁵²² the right to marital privacy was defended and laws imposing criminal sanctions on distribution of information concerning birth control were declared unconstitutional. Bloustein regards an invasion of privacy as a dignitary wrong.⁵²³ Robertson argues that if women have constitutional rights to birth control, by analogy they have similar rights to procreative decisions free from unnecessary government intrusion in accordance with privacy rights, and further that this would include decisions of a couple to undergo cloning.⁵²⁴ A Federal district court declared that the right to make reproductive decisions encompasses the right of infertile couples to undergo mechanically assisted reproduction, such as by I.V.F. or embryo donation.⁵²⁵ In terms of the arguments of this paper it would be illogical to exclude reproduction by cloning. There is however no consensus, some arguing that cloning as a-sexual reproduction goes beyond constitutional protection.⁵²⁶

Ultimately, if reproductive rights fall within the private realm it is submitted that a prohibition on the choice to clone would be an infringement of privacy, and hence dignity, and therefore unconstitutional, unless it could be shown that cloning is likely to produce such harm – physical, psychological etc. – that the state would be justified in banning it. The purpose of this paper has been to show that the risk of such harm is not sufficiently compelling to justify a total ban. From the above, together with the fact that as yet the U.S. Senate has not yet enacted a cloning prohibition,⁵²⁷ it is apparent that the present American legal position should not significantly influence South African policy,

⁵¹⁹ According to D. J. McQuoid-Mason *The Law of Privacy in South Africa* (1978), American courts recognise the constitutional right of privacy 41

⁵²⁰ Article [V] Amendment to the Constitution of the United States of America 1787

⁵²¹ *Roe v Wade* (1973) 410 U.S. 113

⁵²² *Griswold v Connecticut* (1965) *op cit*

⁵²³ E.J. Bloustein 'Privacy as an Aspect of Human Dignity: An Answer to Dean Prosser' (1964) 39 *NYULR* 62 cited by McQuoid-Mason *op cit* 41

⁵²⁴ Robertson in a statement to the NBAC March 1997 *op cit* 83

⁵²⁵ *Lifchez v Hartigan* 735 F.Supp. 1361 (N.D.Ill.), *aff'd without opinion, sub nom., Scholberg v Lifchez*, 914 F.2d 260 (7th Cir.1990), cert. denied, 498 U.S. 1069 (1991) cited in Andrews (1997) *op cit* F 60

⁵²⁶ Andrews (1997) *op cit* F 6

⁵²⁷ They appear to have difficulty agreeing on the constitutionality of cloning – see above.

especially since both reproductive rights and the rights of scientists to research are expressly protected by the Bill of Rights of the S.A. Constitution.⁵²⁸

5.6.2. Other States

Unlike the U.S.A. all the other states mentioned above have enacted a ban on reproductive cloning. Earlier most of these rejected embryo stem cell cloning too,⁵²⁹ but just recently the European parliament rejected a ban on therapeutic stem cell cloning indicative of a relaxation of anti-cloning attitudes.⁵³⁰ In assessing the constitutionality of the ban on reproductive cloning the question arises as to whether these states recognise the right of privacy, and if so to what extent this includes human cloning as a form of reproductive freedom, and the right of scientific freedom.

To a greater or lesser extent all recognise some degree of privacy rights. The United Kingdom has no written constitution or comprehensive Bill of Rights,⁵³¹ the constitution being found partly in statute, partly in conventions and customs.⁵³² Although English courts have until recently shown a reluctance to recognise a tort of privacy,^{533 534 535} nevertheless the U.K. is a signatory to and is bound by the Council of Europe's 1953 'European Convention for the Protection of Human Rights and Fundamental Freedoms'.⁵³⁶ According to the Human Rights Act⁵³⁷ primary and subordinate legislation 'must be read and given effect in a way compatible with the Convention rights'.⁵³⁸

⁵²⁸ Constitution of South Africa Chapter 2 Bill of Rights Sections 12, 17

⁵²⁹ A procedure, it has been argued, which is morally more problematic than stem cell cloning. See Chapter II: discussion of therapeutic cloning

⁵³⁰ <http://news.bbc.co.uk/1/hi/sci/tech/1682591.stm>

⁵³¹ Other than the Act of 1689 known as the Bill of Rights which deals mainly with succession to the Crown and exercise of the royal prerogative

⁵³² 'United Kingdom – "Constitution"' published on the internet at:

<http://www.uni-wuerzburg.de/law/uk00000.html> 1

⁵³³ McQuoid-Mason *op cit* 49

⁵³⁴ See also Lord Justice Glidewell 'It is well-known that in English law there is no right to privacy and accordingly there is no right of action for breach of a person's privacy.' *Kaye v Robertson* [1991] FSR 62

⁵³⁵ Recent acts passed such as the Data Protection Act of 1998 deal largely with privacy of information.

See: <http://www.hmsa.gov.uk/acts/acts/1998.htm>

⁵³⁶ United Kingdom – "Constitution" *op cit* 1

⁵³⁷ Human Rights Act 1998 <http://www.hmsa.gov.uk/acts/acts/1998.htm>

⁵³⁸ *ibid*

Among the rights recognised by the Convention are dignity,⁵³⁹ personal integrity,⁵⁴⁰ the right to marry and found a family,⁵⁴¹ privacy⁵⁴² and freedom of expression.⁵⁴³

Article 8 states:

- (1) Everyone has the right to respect for his private and family life, his name and his correspondence.
- (2) There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the protection of disorder or crime or for the protection of health or morals, or for the protection of the rights and freedoms of others.⁵⁴⁴

Reproductive rights and academic freedom⁵⁴⁵ are not mentioned explicitly. In deciding whether or not a ban on human reproductive cloning would be unconstitutional what is ultimately at stake are questions of the morality of cloning and safety. That is to say, if it can be shown that cloning is not immoral, nor so unsafe that a total ban is warranted⁵⁴⁶ - the purpose of this paper - then it could be argued that a ban would be unconstitutional and that South Africa should not be influenced by such legislation. Similar arguments can be applied to Denmark, Germany and France and Norway, who are also signatories to the European Convention on Human Rights and Fundamental Freedoms.

Denmark adopted its Constitution in 1849. Citizens' rights are dealt with in Chapter 8 and include the rights to privacy, freedom of speech and information, but there is no

⁵³⁹ Section 3 European Convention on Human Rights and Fundamental Freedoms *op cit*

⁵⁴⁰ Section 5 *ibid*

⁵⁴¹ Section 8 *ibid*

⁵⁴² Section 16 *ibid*

⁵⁴³ Section 19 *ibid*

⁵⁴⁴ <http://www.pfc.org.uk/legal/echrtxt.htm>. Emphasis added.

⁵⁴⁵ *ibid*. Article 10 deals with freedom of expression, but there is no mention of scientific or academic freedom.

⁵⁴⁶ Recommendations regarding safety will be discussed below in Chapter VI.

specific mention of reproductive rights or scientific freedom.⁵⁴⁷ But according to Morten Kjaerum, Director of the Centre for Human Rights in Denmark, the Danish catalogue of rights is limited and international human rights conventions have played a more significant role than the Constitution⁵⁴⁸ in the development of human rights policies and legislation⁵⁴⁹.

In France and Germany a Bill of Rights is constitutionally entrenched. Chapter I of Basic Law for the Federal Republic of Germany⁵⁵⁰ is a statement of Basic Rights. These include:

Article 1 - protection of human dignity

Article 2 - personal freedom, which includes the right to self-fulfilment

Article 5 - freedom of expression, which includes freedom of scholarship, research and teaching

Article 6 - marriage and family, which should have the special protection of the state

French rights are contained in the 1789 Declaration of the Rights of Man.⁵⁵¹ Included are the following:

Article 4: Liberty consists in the freedom to do everything which injures no one else; hence the exercise of the natural rights of each man has no limits except those which assure to the other members of the society the enjoyment of the same rights. These limits can only be determined by law.

Article 5: Law can only prohibit such actions as are hurtful to society. Nothing may be prevented which is not forbidden by law, and no one may be forced to do anything not provided by law.

⁵⁴⁷ Morten Kjaerum 'Denmark: Constitution Poor on Human Rights'

<http://www.ms.dk/Kampagner/Old/grundlov/constitution/Denmark.htm> 1-3

⁵⁴⁸ Constitution 5 June 1953. Part VIII deals with individual rights and guarantees protection of personal liberty, inviolability of the home (mainly secrecy of information), and freedom of speech. See

http://www.uni_wuerzburg.de/law/da00000_.html

⁵⁴⁹ Kjaerum *op cit* 3

⁵⁵⁰ Blaustein and Flanz *Constitutions of the Countries of the World op cit* Germany

⁵⁵¹ <http://www.yale.edu/lawweb/avalon/rightsof.htm>

Article 11: The free communication of ideas and opinions is one of the most precious of the rights of man. Every citizen may, accordingly, speak, write, and print with freedom, but shall be responsible for such abuses of this freedom as shall be defined by law.

These rights in relation to human reproductive cloning are subject to the same arguments as above. In addition, while the Bills of Rights of both France and Germany do not explicitly mention privacy,⁵⁵² the rights mentioned above, which emphasise personal liberty and freedom of expression, could be seen to support rather than prohibit the practice of and research into human reproductive cloning, provided that it can be shown to be neither immoral, nor harmful. Thus there are strong arguments suggesting the unconstitutionality of a prohibition on cloning, although Germany's rejection of cloning can be understood in the light of its past history of eugenic experimentation during the Nazi era, as mentioned above.

Australia has no Bill of Rights and the Australian Constitution offers largely implicit rather than explicit protection of individual rights.⁵⁵³ Neither the Australian Federal Constitution nor the Constitutions of the six states have express provisions relating to privacy,⁵⁵⁴ and the Privacy Act of 1988 gives only 'partial effect to Australia's commitment to the International Covenant on Civil and Political Rights'.⁵⁵⁵ Areas covered, however, focus largely on privacy of information rather than privacy of family life and reproduction. Express constitutional guarantees of individual rights are limited to acquisition of property, trial by jury, free trade, freedom of religion and non-discrimination.⁵⁵⁶ In these terms a ban on cloning could hardly be seen as unconstitutional or an infringement of protected rights. It is submitted, however, that

⁵⁵² *Privacy and Human Rights* 2001 published on the internet at:

<http://www.privacyinternational.org/survey/phr/2001.pdf> 111 The French Constitutional Court ruled in 1994 that the right of privacy was implicit in the Constitution (Decision 94 – 352 du Conseil Constitutionnel du 18 Janvier 1995)

⁵⁵³ Michael Lee 'After the Republic a Bill of Rights' published on the internet at:

<http://www.onlineopinion.com.au/July99/Lee.htm> 1-5

⁵⁵⁴ *Privacy and Human Rights* 2001 *op cit* 66

⁵⁵⁵ *Privacy and Human Rights* *op cit* 67

⁵⁵⁶ Lee *op cit* 1

because the South African Constitution gives explicit protection to privacy including reproductive rights, as well as to scientific freedom, policy makers should not follow Australia in prohibiting human reproductive cloning.

5.7. Conclusion

It is submitted that despite the existence of foreign legislation banning human reproductive cloning, South Africa should not be influenced by these laws. It is the argument of this paper that the justification given by most states that have enacted such laws is based on a false conception of the nature of human cloning resulting in beliefs that cloning is, *inter alia*, a threat to individuality and an affront to human dignity. It has been argued that this is not the case. Further, it may well be that in cases of infertility or disease, reproductive cloning may foster rather than impede human dignity, enabling those who would otherwise be unable to reproduce to satisfy a desire to have a child, thereby achieving self-fulfilment. In the light of this South African law should not follow foreign legal policies and principles.

The chief difficulty for South African legislators lies in drafting legislation that will not interfere with constitutional rights, as discussed in Chapter IV, but will at the same time offer protection from harm that might ensue if uncontrolled experimentation takes place. In the next chapter recommendations on appropriate guidelines will be made.

CHAPTER VI

6. Conclusion and Recommendations

6.1 Summary

The aim of this paper has been to explore the reasons for the near hysterical reactions to what seemed a revolutionary event in 1997, the cloning of Dolly. This was the year when science fiction became fact. It has been suggested that the ensuing ethical dilemmas raised by the prospect of human cloning are exaggerated and rest on false assumptions of genetic essentialism or genetic determinism. It has been argued that cloning by somatic cell nuclear transfer does not produce identical individuals, and that it is a mistake to believe that genes alone determine personhood. Clones produced by SCNT share only nuclear DNA and it is believed that mitochondrial DNA plays a role in determining identity, and even subtle changes in the environment, including the intra-uterine environment, play a role in the development of an individual.

If this is understood, then many of the fears concerning cloning can be seen to be unfounded, and the ‘repugnance’ expressed is not ‘wisdom’⁵⁵⁷ but a misconception of the nature and purposes of cloning. Concerns raised about psychological harm resulting from lack of individual identity and uniqueness, loss of autonomy and the right to an open future all depend on the mistaken belief in genetic determinism. We are not merely the sum of our genes.

It has been submitted that so-called cloning should be viewed in the same light as other artificial reproduction therapies and that the mere fact that it is a form of a-sexual reproduction is not a sufficient basis for rejecting the technology as immoral. Perhaps if the term ‘cloning’ were itself dropped from the debate and the technology referred to as

⁵⁵⁷ Kass ‘The Wisdom of Repugnance’ in Pence (ed.) *Flesh of My Flesh op cit* 13-37

SCNT then reactions to the procedure might be viewed similarly, for example, to IVF, which in its early years created almost as much hysteria⁵⁵⁸ as the prospect of human cloning has since 1997.

The possibility of social harms, such as that of the threat of eugenics and the threat to the diversity of the gene-pool, have been shown to be unrealistic, since it is highly unlikely that people who are able to reproduce normally would choose to reproduce by cloning, even for the purposes of producing a 'perfect' baby. This in turn rests on the mistaken belief that we are our genes and that mere selection of genes is sufficient to produce a child with all the characteristics desired. Cloning offers no such guarantees.

A criticism has been levelled that the ability to select a child's genome would result in objectification or instrumentalisation of that child, contrary to the Kantian maxim that we should respect the dignity of individuals by treating them as ends and never as a means only. This has also been shown to be invalid, since even in the ordinary course of events parents have numerous reasons for having offspring, many of which can be seen as serving instrumental purposes.⁵⁵⁹ Yet we do not deny such parents the right to reproduce.

It has been submitted that there are numerous individual and social benefits that human cloning would produce, both directly as a reproductive tool, and indirectly as a therapeutic measure. In particular, reproductive cloning would provide a means of treating infertility, a means of avoiding transmission of genetic diseases, and could also provide organs or tissues for transplantation, avoiding the problems of rejection because of mismatch of tissue. Research on human cloning may also have other spin-offs for the advancement of science.

One of the most comprehensive explorations of ethical, legal and policy issues of human cloning is the report and commissioned papers of the NBAC in 1997. Despite strong

⁵⁵⁸ See Jean Beth Elstain 'To Clone or Not to Clone' in *Clones and Clones op cit* 126; Pence (1998) *Who's Afraid of Human Cloning? op cit* 5

⁵⁵⁹ See discussion 3.1.3.2.

claims that human cloning is unethical and immoral, the Commission concluded that the primary objection to cloning was not in terms of morality, but rather in terms of the possibility of physical harm since cloning technology is still in its experimental stage, and numerous attempts at animal cloning by SCNT have either failed to produce, or have produced abnormal, offspring. Furthermore it was argued that a ban on human cloning might be an infringement of fundamental moral rights such as the right to reproduce, the right to privacy in one's reproductive decisions and the right of scientists to engage in research. These arguments have been examined in the light of the South African Constitution and Bill of Rights and it has been contended that a ban on cloning, both as a reproductive and a therapeutic measure, is not only an infringement of moral rights but may well be interpreted as unconstitutional and therefore illegal.

Chapter V surveyed current cloning legislation from which it is clear that there are major disagreements not only as to whether or not cloning in any or all of its forms – for example, reproductive cloning, therapeutic cloning, stem-cell cloning, or even cloning research - should be prohibited, but there is even disagreement regarding the very nature of cloning and how it should be defined. There appears to be growing awareness of the medical benefits that will probably ensue from cloning research, and it is also clear that it will be increasingly difficult to ban one aspect of cloning completely without making it very difficult to encourage technological development in other areas. Research into reproductive cloning will undoubtedly produce valuable information for therapeutic aspects, yet can one merely carry out research without at some stage testing that research in practice? A fine balancing act is required so that the benefits may be enjoyed without serious physical harm or infringement of moral or legal rights.

The possibility of physical harm is, however, at this time very real and it is therefore necessary that some controls should be put in place and that cloning policies should be established to prevent such harm, while at the same time recognising the possibility of great benefits in the future. This paper will thus conclude with some recommendations.

6.2 Recommendations

Many critics whose major concern is the risk of physical harm to cloned individuals have called for a cloning ban. It is the claim of this paper, however, that a total ban or criminalisation of cloning is neither desirable, nor likely to prove effective. Historical evidence supports the latter contention. When, for example, abortion was illegal in South Africa thousands of women procured back-street abortions resulting in large numbers of deaths and serious infections, often resulting in permanent infertility.⁵⁶⁰ In addition many of these women were subsequently admitted to state hospitals for treatment at considerable financial cost to the state. That is to say, a prohibition on abortion did not prevent women from having abortions. From a consequentialist or utilitarian perspective the Choice on Termination of Pregnancy Act of 1996 has eliminated many of the serious problems that resulted from prohibiting it, and at the same time recognises women's autonomy and reproductive rights. Similarly, the Prohibition period (1920–33) in America,⁵⁶¹ during which an attempt was made to regulate the production and distribution of alcohol by heavy taxation and penalties, did not achieve its aim. Smuggling and bootlegging were rife and notorious gangsters such as Al Capone flourished.⁵⁶²

1. Control

It is submitted that because cloning is still in the experimental stage, it should be subject to controls that are already in place for research using human subjects. Such controls are the subject of the Nuremberg Code,⁵⁶³ the World Medical Association Declaration of Helsinki^{564 565} and, in South Africa, the Medical Research Council's (MRC) *Guidelines*

⁵⁶⁰ *Medical Research Council Report* cited in *The Mercury* (Durban) 1st October 2002 2

⁵⁶¹ 'Clash of Cultures in the 1910s and 1920s' at:

www.history.ohiostate.edu/projects/clash/Prohibition/prohibition-page1.htm

⁵⁶² 'Clash of Cultures in the 1910s and 1920s' op cit 4

⁵⁶³ Nuremberg Code (1947), published on the internet at: ohsr.od.nih.gov/nuremberg.php

⁵⁶⁴ Current version adopted by the 52nd WMA General Assembly, Edinburgh, Scotland, October 2000 at: <http://www.wits.ac.za/bioethics/helsinki.htm>.

⁵⁶⁵ South African research committees appear to consider these as binding. See Van Oosten 'The Law and Ethics of Information and Consent in Medical Research' op cit 6-7

on *Ethics for Medical Research* (1993).⁵⁶⁶ Van Oosten contends that any medical research undertaken must conform to the research guidelines of the institution concerned, and that where there are no such guidelines, those of the MRC should be followed on the basis that (i) the MRC is a national medical research institution and (ii) that the MRC has statutory authority⁵⁶⁷ in accordance with the South African Medical Research Council Act.⁵⁶⁸

Crucial aspects of research using human subjects include informed consent,⁵⁶⁹ and the level of risk. If cloning research and experimentation is conducted cognisance of these aspects must be taken seriously.

(i) Informed consent:

Consent is a central aspect of the recognition of the ethical principle of respect for autonomy. For consent to be lawful, it must be informed, and this entails that the subject of research or experimentation knows and appreciates what it is that is consented to. Informed consent is entrenched explicitly in the Constitution of South Africa,⁵⁷⁰ in which it is stated that everyone 'has the right to bodily and psychological integrity, which includes the right not to be subjected to medical or scientific experiments without their informed consent'⁵⁷¹. Knowledge and appreciation depend in turn on adequate information.⁵⁷² Regarding cloning this means that any person who chooses cloning either as a reproductive or therapeutic measure must be properly informed about the nature of the

⁵⁶⁶ South African Medical Research Council. *Guidelines on Ethics for Medical Research*, revised edition 1993.

⁵⁶⁷ Van Oosten *op cit* 9

⁵⁶⁸ Act 58 of 1991

⁵⁶⁹ emphasis added

⁵⁷⁰ Act 108 of 1996

⁵⁷¹ Section 12(2)c; emphasis added

⁵⁷² *Castell v DeGreeff* 1994 (4) SA 408 (C) 425

procedure, and, in particular about the possibility of the risks involved.⁵⁷³

(ii) Risk

According to medical research guidelines, whether research is for therapeutic or non-therapeutic purposes any procedures performed should not carry more than minimal risk.⁵⁷⁴ 'Minimal risk' according to the MRC guidelines covers both the situation (i) 'where there is a small chance of a recognised reaction which is itself trivial' and (ii) where there is a very remote chance of injury or death'.⁵⁷⁵ The latter situation is the one that at present has likely application to cloning, where the major risk is that of damage to the cloned individual. If, as seems the case with cloning at present, risk is greater than this, (i.e. the chance of harm is greater than 'very remote') such procedures would be unlawful. 'Risk' is thus material to consent and people should not in general be exposed to risk greater than that specified.⁵⁷⁶

It is submitted that fulfilment of the above requirements is a necessary condition for the permissibility of cloning or cloning research. Current success rates in animal cloning appear to be too low to fulfil the requirement of minimal risk, particularly as although Dolly appears quite normal, except for the suspicion that she is ageing prematurely,⁵⁷⁷ other efforts have produced abnormal offspring.⁵⁷⁸ This therefore would be sufficient risk to disallow human cloning at present among medical researchers who are subject to the Nuremberg, Helsinki and, in South Africa, the MRC Guidelines.

⁵⁷³ *ibid*

⁵⁷⁴ Van Oosten *op cit* 11-12

⁵⁷⁵ cited in van Oosten *op cit* 12

⁵⁷⁶ *ibid*

⁵⁷⁷ See Section 3.1 Physical Harm

⁵⁷⁸ e.g. Some calves that have been produced by SCNT were abnormally large, weighing 150 pounds as opposed to the normal weight of 90 pounds; others were slow to nurse, and were metabolically abnormal with low blood glucose levels at birth. See Seidel *op cit* 31

A problem arises, however, in that not all cloning research or attempts to clone human beings are undertaken by medical professionals, and there is a danger that maverick scientists⁵⁷⁹ who are not subject to the above codes of practice will initiate cloning. There is, therefore, a need for further controls that can be extended beyond the field of medicine. What is required is a statutory body with an interest in assisted reproduction technology, such as the U.K. Human Fertilisation and Embryology Authority (HFEA),⁵⁸⁰ that will oversee all institutions or clinics engaged in cloning research or practice ensuring that they too are subject to medical research guidelines. Andrews has suggested similar provisions to address the problems of research (and, one can add, cloning practice) oversight and suggests that in the United States federal regulations should cover all human research.⁵⁸¹ She further recommends the appointment of institution review boards, which would scrutinise the scientific merits of every study before research begins, with built in safeguards requiring voluntary participation and adequate information.⁵⁸² This accords with the requirements of informed consent discussed above.

Bonnicksen warns against crafting single cloning laws – such as a total ban on cloning – under a false sense of urgency.⁵⁸³ Instead she favours crafting a cloning policy where multiple interest groups play a role.⁵⁸⁴ As she points out, despite numerous claims⁵⁸⁵ so far no human being has been successfully cloned⁵⁸⁶, and although the prospect of cloning is drawing closer, Bonnicksen suggests that there are scientific hurdles and ethical reservations sufficient to put a brake on the process.⁵⁸⁷ She claims further that if cloning is not really imminent, pre-emptive laws may not be useful or sufficiently flexible in the light of developing science.⁵⁸⁸

⁵⁷⁹ for example Richard Seed, a biophysicist – see Introduction

⁵⁸⁰ See Chapter V Section 1.2

⁵⁸¹ Lori B. Andrews *The Clone Age* (1999) 267

⁵⁸² *ibid*

⁵⁸³ Bonnicksen *op cit* 123

⁵⁸⁴ *ibid*

⁵⁸⁵ e.g. by Richard Seed, Panos Zavos, Severino Antinori and even South African scientists (see *Saturday Paper* (Durban) 14 February 1998 ‘World’s First Human Clone’ in which it was reported that Dr Mohammed Cassim was seeking permission to clone a human being).

⁵⁸⁶ The latest claim by the Raelians is still to be verified – see above

⁵⁸⁷ Bonnicksen *op cit* 123

⁵⁸⁸ Bonnicksen *op cit* 127

Huttner,⁵⁸⁹ too, warns against over hasty policies and rejects a technique-based government oversight of technology, an example of which is the NBAC moratorium on the technique of nuclear transfer. Oversight, she argues, should focus on ‘outcomes and defined risks’, a policy that is less likely to have adverse effects on the development of science.⁵⁹⁰

Andrews, originally a vociferous opponent of cloning, who urged a ban on it in her report in 1997 for the NBAC,⁵⁹¹ had by 1999 recognised that cloning is gaining increasing ethical acceptability.⁵⁹² This is illustrated by the fact that in 1997 at the First International Congress on Mammalian Cloning anti-cloning sentiments were general; opponents included Ian Wilmut, Ron James, (the venture capitalist behind Wilmut), Alex Capron, (a member of the NBAC), and Andrews herself. At the Second International Congress on Mammalian Cloning in 1999, Gregory Pence, Richard Seed and Lee M. Silver were among several who supported it,⁵⁹³ recognising that ‘you can’t stop science’.⁵⁹⁴ Andrews’s own views are ambivalent.⁵⁹⁵ She states:

‘That is how I feel about my work in reproductive technology and genetics.
No defined boundary.’⁵⁹⁶

As Andrews explains, history has shown that new reproductive technologies and arrangements have always been greeted initially with shock, before they are gradually accepted. She says:

⁵⁸⁹ Susanne L. Huttner, Director of the Systemwide Biotechnology Research and Education Program, University of California ‘Cloning and Public Policy’ in MacKinnon (ed.) *Human Cloning* *op cit* 153-160

⁵⁹⁰ Huttner *op cit* 159-160

⁵⁹¹ Andrews (1997) *op cit* F54

⁵⁹² Andrews (1999) *op cit* 258-260

⁵⁹³ Andrews (1999) *op cit* 259

⁵⁹⁴ Andrews (1999) quoting Brigitte Bosselier, the scientific director of Clonaid *op cit* 260

⁵⁹⁵ *ibid*

⁵⁹⁶ Andrews (1999) *op cit* 11

‘With artificial insemination, acceptance took decades; with in vitro fertilisation it took years.’⁵⁹⁷ The attitude toward cloning shifted in a matter of months.’⁵⁹⁸

Bonnicksen points out that ‘cloning’ is an umbrella for a number of different procedures (such as SCNT, stem-cell cloning, embryo twinning etc.) with the result that policy choices go beyond the oversimplified choice between banning cloning outright or doing nothing. The above recommendations are an attempt to steer a middle ground between these two poles.

6.3 Additional Policy Recommendations ‘when cloning is safe and effective’⁵⁹⁹

Given the likelihood that human cloning will one day be both effective and safe, in addition to meeting the requirements of informed consent and not more than minimal risk the following are some further suggestions on how cloning should be regulated:

(i) Consent of the clone source:

Apart from the need for informed consent on the part of those who will gestate cloned offspring the question arises as to whether the cloned source, i.e. the source of the DNA, must also give consent. According to Robertson⁶⁰⁰ this does not apply in the case where embryos are cloned, nor even in the case of a minor child, since children do not have a right to determine whether or not their parents have additional offspring. Moreover the fact that the child produced is a (delayed) twin should not constitute a burden for the earlier born child, as long as the procedure of collecting DNA is not invasive.⁶⁰¹ However, it is proper

⁵⁹⁷ Changing attitudes to surrogacy could also be included.

⁵⁹⁸ Andrews (1999) *op cit* 260

⁵⁹⁹ John A. Robertson ‘Human Cloning: Public Policy When Cloning Is Safe and Effective’ in MacKinnon (ed.) *Human Cloning op cit* 132-152

⁶⁰⁰ Robertson *op cit* 139

⁶⁰¹ *ibid*

to obtain consent from an adult person whose DNA is used if he or she is still alive. Robertson argues that this would recognise a limited property right to control the use of one's DNA to create another person.⁶⁰² It would also eliminate crazy scenarios such as that of cloning teams of Michael Jordan.⁶⁰³ Robertson suggests further that a legal remedy for damages should be in place for those whose DNA is used without consent.⁶⁰⁴ In addition it is submitted that the sale of DNA should be prohibited to prevent abuse.⁶⁰⁵ Where DNA of deceased persons is desired, this should be subject to approval by next-of-kin, as is the case in South Africa with organ donation where no explicit donation has been made prior to death.⁶⁰⁶

(ii) Consent of the clone source's genetic parents:

A problematic aspect of cloning is that the genetic parents of the clone are in fact the parents of the clone source, and the child born is the later born twin of the clone source. This means in effect that additional genetic offspring would be produced for the clone source's parents. The question is: should their consent be obtained? In the normal course of events parents have no right to make reproductive decisions for their children or decide whether they wish to be grandparents or not. Here, however, such parents, although the social grandparents, would be the genetic parents. It is submitted that regulations should be drawn up to cover such a situation to avoid inter-generational conflict. Despite the genetic link it seems unfair to allow parental interference and thus consent should not be required. The social role in this case

⁶⁰² Robertson (2000) *op cit* 140

⁶⁰³ See above Introduction

⁶⁰⁴ Robertson (2000) *op cit* 140

⁶⁰⁵ cf. South African Human Tissue Act Chapter I Section 2

⁶⁰⁶ Human Tissue Act Chapter II Section 28

should be definitive and the genetic parents should have no rearing duties imposed on them.⁶⁰⁷

(iii) Psychological screening and counselling:

Apart from medical risks that always accompany ART procedures, cloning does pose particular psychological and social problems⁶⁰⁸ such as those of individuality, autonomy and kinship. Even if some of these problems are based on a misconception of the nature of cloning, in particular the mistaken belief that a clone is an identical copy, it is important that parents receive proper counselling and adequate information so that they do not entertain undue expectations concerning the child-to-be. Robertson suggests further that couples (or single parents if, as seems likely, it would be regarded as discriminatory to allow cloning for couples only⁶⁰⁹) undergo psychological screening so that those who seem unstable or unable to deal with the special challenges will be excluded.⁶¹⁰

(iv) Need for clarification of parental rights and duties:

Because of possible complications and confusions of kinship⁶¹¹ it is clear that parental rights and duties should be specified and regulated in order to prevent the sorts of custody battles that have already arisen in the case of surrogacy⁶¹², and even adoption when biological parents attempt to revoke adoption agreements.⁶¹³ Either pre-cloning

⁶⁰⁷ Robertson (2000) *op cit* 141

⁶⁰⁸ See Chapter III Sections 3.1.2. and 3.1.3.4.

⁶⁰⁹ South African Constitution Chapter 2 Bill of Rights Section 9 (3)

⁶¹⁰ Robertson (2000) *op cit* 142

⁶¹¹ See above Chapter III

⁶¹² The case of Baby M reported as *re Baby 'M'* 217N.J.Super.372.525A.2d 1157 (1987) is a prime example of a surrogacy dispute.

⁶¹³ See discussion of Baby Jessica and Baby Richard cases in Chapter IV Section 4.1.1.

agreements should be drawn up which should be given legislative recognition, or relationships should be specified in law.⁶¹⁴ This will assist in reducing the kinds of relationship problems that are likely to arise in human cloning.

- (v) Limit on number of clones born with the same DNA and limit on number of third party DNA donations:

(a) Although 'clones' are not identical, nevertheless the degree of similarity may be sufficient to create some problems of identity, which will be exacerbated if a large number of clones are produced all with the same nuclear DNA. Therefore there should be limits on such numbers. Robertson suggests that a limit of three would still be consistent with reproductive rights allowing couples who have either frozen embryos produced by splitting or have cloned a child by means of SCNT to have up to three offspring with the same DNA.⁶¹⁵ ⁶¹⁶Further, this would prevent the production of multiple 'copies' of the same individual, thus eliminating one of the popular (although mistaken) perceptions that has filled people with horror.

(b) It has already been indicated that gamete donation is limited in many countries⁶¹⁷ and it is submitted that a similar limit should be imposed on the number of eggs donated by a single donor, particularly when acting as a third party. The main reason for this would be to prevent the possibility of marriages between those who are too closely related, half-siblings.⁶¹⁸ In addition it is recommended that a register

⁶¹⁴ Robertson (2000) *op cit* 142

⁶¹⁵ Robertson (2000) *op cit* 144

⁶¹⁶ cf. restriction to 5 on the number of donations of gametes that can be made for AID in accordance with the Human Tissue Act. M.L. Lupton: 'Interpretation of the Human Tissue Act of 1983': 'When it comes to the medical practitioner's notice that five births have resulted from the gametes of a particular donor...he should then destroy all unused gametes of that donor...' *op cit* 47

⁶¹⁷ See above Chapter III Section 3.1.3.5. Issues of Social Justice

⁶¹⁸ This problem would not arise when egg donations are made within the family relationship.

should be set up of all children created by cloning.⁶¹⁹ This would serve a dual purpose since it could be used to prevent consanguineous marriages, but would also make it possible to conduct research into the effects of cloning on those children.⁶²⁰

The above are merely guidelines for future cloning policies should cloning prove safe. Finally mention should be made of what Charo⁶²¹ terms a 'relational' policy based on the view that intrinsically cloning is neither good nor bad. When performed for good reasons it is ethical. When motives for cloning are bad, cloning is bad also. For example, when cloning is used to circumvent infertility it is ethical. When performed for eugenic purposes it is not. On this basis it could be recommended that cloning be allowed in some circumstances, but not in those that are regarded as unethical. As a view about the morality of cloning this may have validity, but problems arise if this view is to be implemented as public policy.

A parallel can be drawn with abortion policy. While some may feel that abortion should be allowed for example when a woman is not in a financial position to sustain a child, but might reject it when it is performed for the purposes of selecting the sex of a child, it would not, Charo argues, be feasible to implement this as policy. Such a policy would require 'an inquiry into the hidden psyches'⁶²² of those wanting an abortion, an inquiry that is both intrusive and an infringement of privacy, as well as being subject to 'fraud and manipulation'.⁶²³ This is recognised in the Choice on Termination of Pregnancy Act, which allows abortion to be performed for whatever reason in the first trimester.⁶²⁴ It is purely the choice of the pregnant woman.

⁶¹⁹ This may raise a problem in terms of the right to privacy but it could be argued that an infringement of this right would be morally justifiable and reasonable in terms of the limitation clause of the Constitution. See Chapter IV Section 4.2.1.

⁶²⁰ Robertson (2000) *op cit* 145

⁶²¹ R. Alta Charo (2000) 'Cloning and the Ethics of Public Policy' in Mackinnon (ed.) *Human Cloning op cit* 108

⁶²² *ibid*

⁶²³ *ibid*

⁶²⁴ Choice on Termination of Pregnancy Act *op cit* Section 2 (1) (a)

Similar difficulties will arise if an attempt is made to implement policy on human cloning based on such a relational ethic. In addition, too much would depend on putting forward a sufficiently persuasive case to the courts, leaving too much space for a degree of arbitrariness in decision-making unless there are clear criteria..⁶²⁵

6.4 Conclusion

The development of cloning as a new reproductive technology forces us to think deeply about fundamental questions concerning the very nature of human existence. It forces us to reconsider the meanings of parenting, offspring, kinship and family relationships, as well as questions of identity and the role of genes. This paper has argued that although initial responses greeted human cloning with horror, when the processes are fully understood enormous benefits can be anticipated, and if it indeed becomes a safe technology, most of the ethical problems to which human cloning gives rise can be overcome. Furthermore these debates are taking place within the context of liberal decision-making where freedom of choice, privacy and respect for autonomy are regarded as fundamental rights that should not be violated unless harms that might ensue justify such infringement of liberty.

There is, however still a long way to go before such debates are closed. In the meantime caution should be exercised so that over-hasty decisions are not made either to prohibit cloning or to allow too great a licence. The importance of scientific progress must be balanced against the protection of human beings from fundamental harm. In the words of Philip Kitcher,⁶²⁶ it is our duty 'to think through the implications of time-honored moral principles and to design a coherent use of the new genetic information and technology for human well-being'. We must separate science from fiction.

⁶²⁵ Charo *op cit* 108-109

⁶²⁶ Kitcher *op cit* 67

SELECTED BIBLIOGRAPHY

Andrews, Lori B. *The Clone Age* (1999).

Annas, George J. 'Why We Should Ban Human Cloning' *The New England Journal of Medicine* Vol. 339 No. 2 (1998).

Baier, Annette 'The Need for More Than Justice' (1988) in Olen, J. and Barry, V. (eds.) *Applying Ethics* (1996).

Beauchamp, Tom L. and Childress, James F. *Principles of Biomedical Ethics* (1994).

Bentham, Jeremy *Introduction to the Principles of Morals and Legislation* (1787).

Berry, Sir Colin 'Risk, Science and Society' Address to the Royal Institution, London (2001).

Blaustein, A.P. and Flanz, G.H. (1990) *Constitutions of the Countries of the World* (2001).

Buchanan, A., Brock, D.W., Daniels, N. and Wikler, D. *From Chance to Choice: Genetics and Justice* (2000).

Caplan, Arthur 'Do Not Copy Without Permission' in *Am I My Brother's Keeper?* (1997).

Dawkins, Richard *The Selfish Gene* (1989).

Devenish, G.E. *A Commentary on the South African Bill of Rights* (1999).

Dick, Philip K. *Do Androids Dream of Electric Sheep?* (1968).

Feinberg, Joel 'The Child's Right to an Open Future' in Aiken, W. and LaFollette, H. (ed.) *Who's Child? Children's Rights, Parental Authority and State Power* (1980).

Fukuyama, Francis 'How to Regulate Science' at:
www.thepublicinterest.com/current/article1.html (2002).

Giesen, Dieter *International Medical Malpractice Law* (1988).

Gilligan, Carol *In a Different Voice* (1982).

Human Genetics Advisory Commission (HGAC)(U.K.) 'Cloning Issues in Reproduction, Science and Medicine' (1982).

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

Jenkins, Trefor *Genesis, Genes and Neugenics* Radio SAFM Summer Lecture Series (2002).

Jonas, Hans *Philosophical Essays: From Ancient Creed to Technological Man* (1974).

Kant, Immanuel *Groundwork of the Metaphysic of Morals* (1785).

Kass, Leon 'The Meaning of Life in the Laboratory' at:
www.thepublicinterest.com/currentarticle.3.html (2002).

- 'The New Biology: What Price Relieving Man's Estate?' *Journal of The American Medical Association* 174 (November 1971).

Kuhse, H. and Singer, P. (eds.) *Bioethics* (1999).

- Harris, John 'Goodbye Dolly? The Ethics of Human Cloning'.
- Rachels, James 'When Philosophers Shoot From the Hip'.

Lemonick, Michael D. *Time Magazine* 'Risky Business' (18 March 2002).

Levin, Ira *Boys From Brazil* (1978).

Lupton, M.L. 'Artificial Fertilisation' *Family Law: Medico-Legal Aspects* (1985) Issue 230.

MacKinnon, Barbara (ed.) *Human Cloning: Science, Ethics and Public Policy* (2000).

- Bonnicksen, Andrea L. 'Crafting Cloning Policies'.
- Charo, R. Alta 'Cloning and the Ethics of Public Policy'.
- Huttner, Susanne L. 'Cloning and Public Policy: Biotechnology Lessons'.
- Kitcher, Philip 'There Will Never Be Another You'.
- Lewontin, Richard C. 'Cloning and the Fallacy of Biological Determinism'.
- Robertson, John A. 'Human Cloning: Public Policy When Cloning is Safe and Effective'.

- Seidel, George E. 'Cloning Mammals: Methods, Applications, and Characteristics of Cloned Animals'.

Mappes, T. and DeGrazia, D. (ed.) *Biomedical Ethics* (2000).

- 'Human and Animal Research'.
- Wachbroit, Robert, 'Genetic Encores: The Ethics of Human Cloning'.
- Walters, LeRoy and Palmer, Julie Gage 'Germ-line Gene Therapy'.

McGee, Glenn (ed.) *The Human Cloning Debate* (2000).

- Caplan, Arthur 'If Ethics Won't Work Here, Where?'.
- Cohen, Jonathan R. 'Creation and Cloning in Jewish Thought'.
- Eisenberg, Leon 'Would Cloned Humans Really Be Like Sheep?'.
- Kitcher, Philip 'Human Cloning'.
- Lewontin, Richard, 'The Confusion over Cloning'.
- McGee, Glenn and Wilmut, I. 'A Model for Regulating Cloning'.
- Murphy, Timothy E. 'Entitlement to Cloning?'.
- Robertson, John A. 'The Question of Human Cloning'.
- Strong, Carson 'Cloning and Infertility'.
- Meilander, Gilbert 'A Protestant Perspective on Human Cloning'.
- Wickware, Potter 'The Science of Cloning'.

McQuoid-Mason, David J. *The Law of Privacy in South Africa* (1978).

Midgely, Mary *Evolution as a Religion: Strange Hopes and Stranger Fears* (1985).

Mill, J.S. *Utilitarianism* (1861).

- *On Liberty* (1859).

National Bioethics Advisory Commission (NBAC) *Cloning Human Beings* (1997).

Volume I: Report and Recommendations

Volume II: Commissioned Papers

Nussbaum, Martha and Sunstein, Cass (eds.) *Clones and Clones: Facts and Fantasies about Human Cloning* (1998).

- Dawkins, Richard 'What's Wrong with Cloning?'
- Elshtain, Jean Bethke 'To Clone or Not to Clone'.
- Epstein, Richard A. 'A Rush to Caution: Cloning Human Beings'.
- Gould, Stephen J. 'Dolly's Fashion and Louis's Passion'.
- Johnson, George 'Soul Searching'.
- Tribe, Laurence 'On Not Banning Cloning for the Wrong Reasons'.

Pence, G.E. (ed.) *Flesh of My Flesh* (1998).

- Kass, Leon 'The Wisdom of Repugnance'.
- Meilander, Gilbert 'Begetting and Cloning'.

Pence, G.E. *Who's Afraid of Human Cloning?* (1998).

Plato *Euthyphro* c.385 B.C. in R.E. Allen (ed.) *Greek Philosophy: Thales to Aristotle* (1966).

Rantala, M.L. and Milgram, Arthur J. (eds.) *Cloning For and Against* (1999).

- Bonnicksen, A. 'A False Sense of Urgency has Driven the Cloning Debate'.
- Callahan, Daniel 'The Cloning Issue Reveals Shortcomings in Bioethics'.
- Harkin, Tom 'There Are No Appropriate Limits to Human Knowledge'.
- Kennedy, Edward 'Vital Medical Research is Threatened by a Proposed Cloning Ban'.
- Krauthammer, Charles 'Nothing Can Stop the Cloning of Humans'.
- Macklin, Ruth 'There's No Justification for an Outright Ban on Cloning'.

- Wolf, Susan M. 'A Proposed Cloning Ban Unconstitutionally Restricts Scientific Research'.
- Wright, Robert 'Our Genes Are Not Us'.

Robertson, John A. 'Liberty, Identity and Human Cloning' (1998) 76 *Texas Law Review* 1371.

Schuklenk, U. and Ashcroft, R. 'The Ethics of Reproductive and Therapeutic Cloning (Research)' (2000) 2 *Monash Bioethics Review* 19.

Silver, Lee M *Remaking Eden: Cloning and Beyond in a Brave New World* (1997).

Singh, J. A. 'Mankind's Right to Privacy in the Context of Procreative Liberty and Cloning' (unpublished) (2001).

- 'Freedom of Expression: The Constitutionality of a Ban on Cloning in the Context of a Scientist's Guaranteed Right to Freedom of Scientific Research' (1999) *THRHR* 62.

Taylor, Charles *Philosophical Arguments* (1997).

Temkin, O. and C.L. (eds.) *Ancient Medicine: Selected Papers of Ludwig Edelstein* (1967).

Van Oosten, Ferdinand 'The Law and Ethics of Information and Consent in Medical Research' *THRHR* (2000) 63.

Van Wyk, Dawid, Dugard, John, de Villiers, Bertus and Davis, Dennis *Rights and Constitutionalism* (1994).

Waldron, J. (ed.) *Nonsense Upon Stilts* (1987).

Weinberg, Robert A. 'Of Clones and Clowns' *The Atlantic Monthly* (1 June 2002).

Weldon, Fay *The Cloning of Joanna May* (1989).

Willgoos, Christine 'FDA Regulation: An Answer to the Questions of Human Cloning and Germline Gene Therapy' (2000) *American Journal of Law and Medicine*.

Wilmut, I., Schnieke, A.E., McWhit, J., Kind, A. and Campbell, K. 'Viable Offspring Derived from Fetal and Adult Mammalian Cells' (1997) *Nature* 385.

Wilmut, I., Campbell, K. and Tudge, C. *The Second Creation* (2000).

STATUTES

South Africa

Choice on Termination of Pregnancy Act 92 of 1996

Constitution of the Republic of South Africa Act 108 of 1996

Human Tissue Act 65 of 1983

Human Tissue Amendment Act No. 51 of 1989

South African Medical Council Research Act 58 of 1991

U.S.A.

The Human Cloning Prohibition Act of 2001

United Kingdom

Human Cloning Reproductive Act of 2001

Human Fertilisation and Embryology Act of 1990

Canada

Human Reproduction Research Act 9 May 2002

Denmark

Act on Assisted Procreation, No. 460 of 1997

France

Act of 1689, Bill of Rights

Germany

Embryo Protection Act of 1990

Norway

Act Relating to the Application of Biotechnology in Medicine, No. 56 of 1994

Amendment to the Act Relating to the Application of Biotechnology in Medicine 1998,

Act No. 22 of 1998

International

Human Rights Act 1998

CASES

South Africa

Bernstein v Bester NO (1996) 4 BCLR 449 (CC)

U.S.A.

Baby Richard v Kirchner (1994) 649 NE 2d 324

De Boer v Schmidt (502 NW 2d 649, 442 Mich. 648; Mich. App. 501 NW 2d. 198.199 MichApp 10)

Eisenstadt v Baird 405 U.S. 438 (1972)

Griswold v Connecticut 381 U.S. 479 (1965)

Henley v Wise 303 F.Supp.62 (N.D. Ind.1969)

Lifchez v Hartigan 735 F.Supp. 1361 (N.D.I ll.) (1990); *Scholberg v Lifchez*, 914 F.2d 260 (7th Cir.1990), cert. denied, 498 U.S. 1069 (1991)

Re 'Baby M' 217 N.J. Super. 372. 525 A.2d 1157 (1987)

Roe v Wade (1973) 410 U.S. 113

U.K.

Kaye v Robertson [1991] FSR 62

INTERNATIONAL CODES AND CONVENTIONS

Council of Europe Additional Protocol to the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine on the Prohibition of Cloning Human Beings (1998)

European Convention for the Protection of Human Rights and Fundamental Freedoms (1953)

Hippocratic Oath

Nuremberg Code (1947)

Universal Declaration of Human Rights (1948)

Universal Declaration on the Human Genome and Human Rights (1998)

World Medical Association Declaration of Helsinki: Declaration on Ethical Principles for Medical Research involving Human Subjects (2000)