

# All in the Family: a Child Welfare Perspective on Human Reproductive Cloning

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One of the chief philosophical problems raised by human cloning is the question of how we should respond to the interests of people not yet in existence.<sup>1</sup>

## Introduction

For centuries a woman who bore a child was clearly the birth mother of that child: *mater est quam gestatio demonstrat*.<sup>2</sup> However, this relationship is no longer unequivocal. The possibility of embryo transfer or egg donation separates biological motherhood into genetic and gestational components. With the announcement in 1997 of the live birth of the first cloned adult mammal using differentiated bodily (or somatic) cells from an adult organism, the prospect of creating children through somatic, cellular cloning has pushed the envelope wider than ever before.

The prospect of creating children through cloning has caused widespread concern, much of it based on the nature of fears about the possible harm to the children who may be born as a result. Concerns exist as to possible physical harms from the manipulation of the ova, nuclei and embryo as part of the process of cloning. Most scientists agree that, currently, cloning technology has not advanced enough to ensure its safe use in humans.<sup>3</sup> The long term effects on animals created through cloning have not been determined — with some literature indicating that the cells of clones age more quickly than those produced through sexual reproduction.<sup>4</sup> Similarly, other studies have suggested major long term side effects, such as the effects of mutations on the health of a clone,<sup>5</sup> as a basis for concern. Other possible physical harms relate to psychological harm in the form of a diminished

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<sup>1</sup> Justine Burley & John Harris, "Human Cloning and Child Welfare" (1999) 25 J. Med. Ethics 108 at 109.

<sup>2</sup> J.K. Mason & R.A. McCall-Smith, *Law and Medical Ethics*, 2d ed. (London: Butterworths, 1987) at 57.

<sup>3</sup> See J.A. Morris, "Effects of Somatic Cloning" (1999) 354 The Lancet 255; Jonathan R. Hill, "Abnormal In Utero Development of Cloned Animals: Implications for Human Cloning" (2002) 69:4-5 Differentiation at 174.

<sup>4</sup> For example, Paul G. Sheils *et al.*, "Analysis of Telomere Lengths in Cloned Sheep" (1999) 399 Nature 316, online <<http://www.gateway1.ovid.com/ovidweb.cgi>> date accessed 20 July 2003, copy on file with author.

<sup>5</sup> Morris, *supra* note 3. See also Jean-Paul Reynard *et al.*, "Lymphoid Hypoplasia and Somatic Cloning" (1999) 353 The Lancet 1489, online <<http://www.buffy.lib.unimelb.edu.au:2245/search/search.isa>>, [accessed 20 July 2003], copy on file with author; James F. Crow, "The Odds of Losing at Genetic Roulette" (1999) 397 Nature 293, online <[www.gateway1.ovid.com/ovidweb.cgi](http://www.gateway1.ovid.com/ovidweb.cgi)>, [accessed 20 July 2003], copy on file with author.

sense of individual and personal autonomy on the part of the cloned child.<sup>6</sup> Indeed, the American Medical Association's Council on Ethical and Judicial Affairs Position Paper argues that: "[h]uman cloning is a matter for the medical profession's attention since it would involve medical procedures and technology, and it may result in the creation of new genetic and psychological conditions that would require professional care."<sup>7</sup>

But human cloning is far more than a medical issue, it is a legal issue as well as a profoundly ethical one. The ethical concerns can be categorised into two distinct groups: The first group involves harm to procreative realism — specifically, that reproductive cloning would devalue the procreative process and degrade the parent-child relationship, as well as violate the dignity of the child as an autonomous moral agent. The second group is involved with concerns about the psychological burden on the cloned child and fears that the child would suffer, *inter alia*, from social prejudice as well as concerns as to his/her identity. It could be argued that any psychological burden on the cloned child as to issues of identity, and the like, is a sequelae that could, in turn, degrade the parent-child relationship as well as violate the child's autonomy.<sup>8</sup>

Proponents of human cloning tend to justify the use of somatic nuclear transfer on arguments rooted in autonomy, ie: freedom of reproductive choice and freedom of scientific inquiry.<sup>9</sup> A further argument that can be advanced in favour of cloning is that the psychological effects of the same referred to previously are, at best, only speculative in nature and, accordingly, give rise to the question as to whether or not it is morally right to condemn further scientific inquiry into cloning purely on the basis of such *mere* speculation. An analogy can be drawn with the concern and uncertainty that surrounded the *test-tube baby* in the early days of assisted reproductive technology.

It is the nature of this paper to examine human reproductive cloning from the perspective of the welfare of the cloned child. The paper will examine the basic science of cloning as well as the current legal framework regulating somatic nuclear transfer before examining cloning from the perspective of parental responsibility and the fiduciary nature of the family. It will ultimately be argued that there is nothing morally objectionable about cloning from a child welfare perspective *per se* and that a prohibition on cloning based on a critique that is nothing more than

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<sup>6</sup> Vernon J. Ehlers, "The Case Against Human Cloning" (1999) 27 Hofstra L. Rev. 523 at 525ff.

<sup>7</sup> American Medical Association, Council on Ethical and Judicial Affairs Report, *The Ethics of Human Cloning*, June 1999 at 1.

<sup>8</sup> Other arguments such as human cloning will signal the onset of a new form of eugenics movement as well as diminishing the diversity of the human genome is beyond the scope of this paper.

<sup>9</sup> See for example, John A. Robertson, "The Question of Human Cloning" (1994) March-April, *Hastings Center Rep.* 6, Lawrence Wu, "Family Planning Through Human Cloning: Is There a Fundamental Right?" (1998) 98 *Columbia L. Rev.* 1461, & George P. Smith II, "Intimations of Immorality: Clones, Cyrons and the Law" (1983) 6 *U.N.S..W. L. J.* 119.

speculative in nature is not morally right and that freedom of scientific inquiry provides a sound moral justification for ongoing research in this area.

This paper proceeds from the premise that, currently, somatic nuclear transfer is a clinically unsafe process.

## Science of Cloning

Cloning, as a scientific technique, is not new. Genetically identical copies of whole organisms in horticulture (known as varieties) are commonplace. In addition, some forms of invertebrates (ie earth worms, and the like), can regenerate themselves quite readily. While vertebrates do not have this ability, the “cloning” of vertebrates does occur naturally through the formation and birth of identical twins with the chance separation of a single embryo into halves during early development.<sup>10</sup>

Indeed, the first case of an artificially occurring clone dates back to the 1960s where the transplantation of cell nuclei was successfully used to clone frogs.<sup>11</sup> Although the frogs never reached adulthood, the technology was lauded as a tremendous breakthrough.<sup>12</sup>

After a drought in cloning advances in the 1980s, the world’s attention focused sharply on the Roslin Institute in Edinburgh, Scotland, when in 1997, a research team announced the successful cloning of a sheep, Dolly, by modifying the technology developed decades earlier. The technique used to create Dolly is known as nuclear transplantation cloning,<sup>13</sup> of which there are five steps:

- (i) acquiring acceptable donor and recipient eggs;
- (ii) nuclear transfer;
- (iii) cellular fusion;
- (iv) activation; and
- (v) implantation.

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<sup>10</sup>A condition known as *polyembryony* where the embryos possess separate amniotic sacs but are enclosed within a common chorion, see W.J. Hamilton & H.W. Mossman, eds., *Human Embryology*, 4th ed., (Cambridge, UK: H Heffer & Sons, 1972) at 215-6.

<sup>11</sup>J.B. Gurdon & V. Uehlinger, “‘Fertile’ Intestine Nuclei” (1966) 210 *Nature* 1240.

<sup>12</sup>See Michael Specter & Gina Kolata, “After Decades of Missteps, How Cloning Succeeded” *New York Times* (3 March 1997) A1.

<sup>13</sup>As distinct from molecular cloning where DNA fragments containing genes are copied and amplified in a host cell and cellular cloning which involves copying cells from the body by growing them in culture in a laboratory. Neither of these forms of cloning involve the use of germ cells (eggs or sperm), accordingly, resulting cloned cells from either technique do not have the capability of developing into embryos. See US National Bioethics Advisory Committee Report, *Cloning Human Beings, Report and Recommendations of the National Bioethics Advisory Committee*, Rockville, Maryland, June 1997 at 14-15 and Appendix A for a comprehensive explanation of the scientific terms.

To begin the process, donor and recipient eggs must meet certain criteria. Donor cells must be somatic cells<sup>14</sup> — hence, giving rise to the popular name for nuclear transplantation cloning, *somatic cell nuclear transfer* (SCNT). Recipient cells must be a germ cell — in the form of eggs — which need to be enucleated and unfertilized in order to be compatible with donor cells.

After acceptable donor and recipient cells are obtained, nuclear transfer must occur. At this stage it is important that the cycles of donor and recipient eggs are coordinated in order to ensure that the donor nucleus can be fully reprogrammed by the egg, thereby allowing the activation and replication of the entire complement of DNA. To achieve this level of coordination, the donor cell is starved of essential nutrients to force it into a state of hibernation. When the egg's cycle coordinates with the cycle of the hibernating donor, nuclear transfer is performed. The nuclei of both the donor cell and recipient egg are removed, and the donor cells' nucleus is then introduced into the recipient egg.<sup>15</sup>

Cellular fusion and activation are the next two stages in the cloning process. These processes are achieved by the use of electrofusion — a quick pulse of electric current serves to fuse the cells and activate the egg simultaneously. The electric current, in activating the egg, acts as a trigger to the growth process of the newly created cell. Finally, the resulting blastocyst<sup>16</sup> — the preimplantation embryo — is implanted into the surrogate's uterus following procedures commonly utilized in In Vitro fertilization technology. Advances in such technology enable scientists to perform nuclear transfer and cellular fusion outside of the female body.

The practical effect of somatic cell nuclear transfer is the embryonic development of a second organism containing the genetic code of the first organism. Accordingly it would be possible using somatic cell nuclear transfer to create an identical genetic twin separated in time.

## The Legal Framework

The birth of Dolly ignited international debate concerning the moral and ethical propriety of cloning human beings. Somatic cell nuclear transfer was seen as a variation of the general concern existing at the time amongst the international community over embryo manipulation and research.<sup>17</sup> Accordingly, international initiatives to condemn the practice moved swiftly.

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<sup>14</sup>“Of or pertaining to the body (*soma*) ... as opposed to the germ cells ... [Gk *soma* body]” *Butterworths Medical Dictionary*, 2d ed. 1566.

<sup>15</sup>For a more extensive and detailed explanation of the technique involved in somatic cell nuclear transfer, see K.H.S. Campbell *et al.*, “Sheep Cloned by Nuclear Transfer from a Cultured Cell Line” (1996) 380 *Nature* at 64.

<sup>16</sup>“The fluid-filled cavity within the morula — surrounded by the tropoblast and bearing at one place the formative mass ... [Gk *blasto* germ, *kystis* bag]”, *Butterworths Medical Dictionary*, *supra* note 14 at 235.

<sup>17</sup>Christine Willgoos, “FDA Regulation: An Answer to the Questions of Human Cloning and Germline Gene Therapy” (2001) *Am. J. L. & Med.* 101 at 101; Donald Chalmers, “The Challenges of Human

Article 11 of the UNESCO *Declaration on the Human Genome and Human Rights* provided that, “[p]ractices which are contrary to human dignity, such as reproductive cloning of human beings, shall not be permitted.”<sup>18</sup>

Similarly, the Council of Europe moved to amend its *Convention for the Protection of Human Rights and Dignity*,<sup>19</sup> by the insertion of the following Protocol dealing with the cloning of human beings:

Any intervention seeking to create a human being genetically identical to another human being, whether living or dead, is prohibited. For the purpose of this [Protocol], the term human being ‘genetically identical’ to another human being means a human being sharing with another the same nuclear gene set.<sup>20</sup>

In Britain, s. 1(1) of the *Human Reproductive Cloning Act 2001* (UK) provides that: “A person who places in a woman a human embryo which has been created otherwise than by fertilisation is guilty of an offence.”

Gogarty argues that the UK legislation avoids the use of the potentially confusing terms “genetically identical”, “cloning” and “reproductive cloning”, focusing instead on the outcome of the process — the gestation of a cloned embryo.<sup>21</sup>

In Australia, regulation exists at both State and Federal levels. Victoria,<sup>22</sup> Western Australia<sup>23</sup> and South Australia<sup>24</sup> prohibit cloning directed at producing duplicates or descendants that are genetically identical to the original. In States with no specific legislation, the National Health and Medical Research Council’s *National Statement on Ethical Conduct in Research Involving Humans, 1999* and *The Ethical Guidelines on Assisted Reproductive Technology 1996* provide some direction on prohibited and unacceptable practices in such States. These guidelines, which apply to publicly funded institutions as well as private institutions registered under the Fertility Society of Australia, prohibit the creation of two or more genetically identical individuals, as well as the development of human embryonic stem cell lines with the aim of producing a clone of individuals.

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Genetics,” in Ian Freckelton & Kerry Peterson, eds., *Controversies in Health Law* (Sydney: Federation Press, 1999) at 210-211.

<sup>18</sup> *Universal Declaration on the Human Genome and Human Rights*, UNESCO, 29<sup>th</sup> Sess. (1997).

<sup>19</sup> Council of Europe, *Convention for the Protection of Human Rights and Dignity* (1996).

<sup>20</sup> This Protocol was adopted on 22 September 1997.

<sup>21</sup> B. Gogarty, “What Exactly is an Exact Copy? And Why it Matters When Trying to Ban Human Reproductive Cloning in Australia” (2003) 29 *J. Med. Ethics* 84 at 87. See also Brendan Gogarty & Dianne Nicol, “The UK’s Cloning Laws: A View from the Antipodes” (2002) 9 *M.U.E.J.L.*, online at Murdoch University Electronic Journal of Law <<http://www.murdoch.edu.au/elaw/issues/v9n2/gogarty92nf.html>>, accessed [19 July 2003], copy on file with author.

<sup>22</sup> *Infertility Treatment Act 1995* (Vic), ss. 3, 49.

<sup>23</sup> *Human Reproductive Technology Act 1991* (WA), ss. 7(1)(d)(i), 3.

<sup>24</sup> *Reproductive Technology (Code of Ethical Research Practice) Regulations 1995* (SA), Regs 2, 6.

At the Federal level, the *Gene Technology Act 2000* (Cth.) prohibits the cloning of “whole human beings”, cloning in this context referring to the production of duplicates or descendants genetically identical to the other.<sup>25</sup> Similarly the *Prohibition of Human Cloning Bill 2002* (Cth.)<sup>26</sup> prohibits the creation of a human embryo clone by any means including somatic cell nuclear transfer and embryo splitting.<sup>27</sup> The term “human embryo clone” refers to a human embryo that is a genetic copy of another living or dead human, excluding an embryo created by sexual reproduction.<sup>28</sup>

The Canadian Government amended s. 286(1) of Canada’s *Criminal Code* to make the manipulation of an ovum, zygote or embryo for the purpose of producing a zygote or embryo that contains the same genetic information as a living or deceased human being, a criminal offence.<sup>29</sup>

Interestingly, the United States has been less hasty in introducing a complete legislative ban on cloning. In its report entitled *Cloning Human Beings*,<sup>30</sup> the National Bioethics Advisory Committee recommended the following:

Federal legislation should be enacted to prohibit anyone from attempting, whether in research or clinical setting, to create a child through somatic cell nuclear transfer cloning. It is critical, however, that such legislation include a sunset clause to ensure that Congress will review the issue after a specified time period (three to five years) in order to decide whether the prohibition continues to be needed. If state legislation is enacted, it should also contain a sunset provision. Any such legislation ... also ought to require that at some point prior to the expiration of the sunset period, an appropriate oversight body will evaluate and report on the current status of somatic cell nuclear transfer technology and on the ethical and social issues that its potential use to create human beings would raise in light of public understandings at that time.<sup>31</sup>

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<sup>25</sup> For an interesting discussion as to what constitutes “whole” under the *Gene Technology Act 2000* (Cth.) as well as the legislative position in Australia generally, see M. Slabbert, “Cloning and Stem Cell Research: A Critical Overview of the Present Legislation in Australia” (2003) 10 J. L. & Med. 514, esp at 522ff.

<sup>26</sup> See online <[www.scaleplus.law.gov.au/html/bills/0/2002/0/2002090203.htm](http://www.scaleplus.law.gov.au/html/bills/0/2002/0/2002090203.htm)>, [accessed 19 July 2003], copy on file with author.

<sup>27</sup> Clause 9.

<sup>28</sup> Clause 8.

<sup>29</sup> Bill 247, *An Act to amend the Criminal Code (genetic manipulation)*, 1<sup>st</sup> Sess., 36<sup>th</sup> Parl., 1977. Private Members’ Bill introduced in 1997, online at <[www.parl.gc.ca/commons/Bills\\_House\\_Government.asp?Language=E&Parl=378ses=1](http://www.parl.gc.ca/commons/Bills_House_Government.asp?Language=E&Parl=378ses=1)>, [accessed 19 July 2003], copy on file with author.

<sup>30</sup> *Supra* note 13.

<sup>31</sup> Recommendation II; see also, “Cloning Human Beings: Responding to the National Bioethics Advisory Commission’s Report” (1997) 27:5 Hastings Center Rep. 6.

Much academic ink has been spilt debating the US position of recommending legislation combined with a moratorium.<sup>32</sup> Given, however, that the United States has chosen not to seek a comprehensive ban on cloning,<sup>33</sup> demonstrates that new attitudes to cloning are developing. “[C]reating a clone in your own image is to curse your child by condemning it to be only an echo.”<sup>34</sup>

## The Ethics of Cloning

Human reproductive cloning raises a diverse range of serious ethical issues, some clearly defined, others more obscure. Most significant of these issues are those that relate to the impact of cloning on the children the technology helps to create. This is not to say that concerns about the needs of the *bigger picture* of society as a whole are unfounded. To the contrary, the ongoing diversification of the human genome is as important to human society as the maintenance of an individual’s right to procreative freedom and a prohibition against the violation of human dignity.<sup>35</sup> But what of the children? “Children *do* matter and are entitled to have their interests count *alongside our own*.”<sup>36</sup> Accordingly, the remainder of this paper shall examine the arguments for and against somatic cell nuclear transfer cloning from the distinct perspective of the welfare of the cloned child.

## The Case Against Cloning

Objections to cloning have generally rested on consequentialist grounds<sup>37</sup> — the harm resulting to the cloned child from a myriad of factors. The categories of harm are as follows:

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<sup>32</sup> See *e.g.*, James F. Childress, “The Challenges of Public Ethics: Reflections on NBAC’s Report” (1997) 27:5 *Hastings Center Rep.* 9; Daniel Callahan, “Cloning: The Work Not Done” (1997) 27:5 *Hastings Center Rep.* 18; Erik Parens, “Tools From and For Democratic Deliberations” (1997) 27:5 *Hastings Center Rep.* 20.

<sup>33</sup> Lest such ban will affect possible beneficial applications of the technology — the issue of “freedom of scientific inquiry” will be discussed later in this note.

<sup>34</sup> George J. Annas, “Human Cloning: A Choice or an Echo?” (1998) 23 *U. Dayton L. Rev.* 247 at 248.

<sup>35</sup> The objection based on the violation of human dignity is a consequentialist one rooted more in the potential harm to society as a whole rather than to any individual child and is, therefore, beyond the scope of this note. However, suffice it to say that Annas has argued that, “... it was unacceptably inhuman to create a clone because a person’s essential humanness requires being born from the combination of two separate sets of chromosomes, not one set, as would occur in cloning.” John Robertson cites Annas’ argument in John A. Robertson, “Liberty, Identity and Human Cloning” (1998) 76 *Texas L. R.* 1371 at 1410. In response, Robertson has argued that “appeals to human dignity, *without further specification of the content of that dignity*, so that it can be evaluated and compared to other conceptions and practices, will hardly do as a compelling justification for overriding procreative liberty.” [emphasis added].

<sup>36</sup> M. Roberts, *Child Versus Childmaker* (Lanham, Maryland: Rowman & Littlefield, 1998) at 182.

<sup>37</sup> John A. Robertson, “Two Models of Human Cloning” (1999) 27 *Hofstra L. Rev.* 609 at 614.

### a) Objectification and Commodification

Opponents of somatic cell nuclear transfer fear that the cloned child will be treated as an object rather than as an individual — or as a mere means to a parental end and not as an end in itself.<sup>38</sup> This sequelae is said to violate Kantian ethical thought which tells us that rational beings are those possessed of free will, autonomy and the right to be treated as ends, not mere means — “[a]n object [being] a non-person, not treated as a self-governing moral agent.”<sup>39</sup>

When cloning is undertaken not for the purpose of any purported benefit to the child, but to satisfy the need *inter-alia* of the nucleus donor, then it is said, it has the effect of diminishing the personhood of the cloned child created in this fashion and of turning the child into a form of means.<sup>40</sup>

### b) Kinship and Lineage

A major concern with cloning is the confusion that it could create in family lineage and kinship.<sup>41</sup> A couple’s use of their embryos or an existing child’s DNA to have another child does not seem to pose too many problems in relation to kinship vis-à-vis the rearing parents and child, for the child is clearly their genetic offspring. The issue of lineage becomes more problematic when a third person’s DNA is used in lieu of an anonymous embryo donation. In this example, the couple will gestate and rear a child with whom they have no genetic connection. The party who consents to be cloned will have a later born genetic twin with whom s/he has no rearing or social relation. The genetic parents of the donor child will likewise have no rearing or social connection with the clone of their offspring.

Potential problems also arise in circumstances where the DNA of one of the rearing parents is used to create the child whom they subsequently gestate and rear. The kinship problem lies in the fact that the donor parent is the genetic sibling of the cloned child. This has the potential for blurring the lines of kinship and of creating confusing relationships for the cloned child.

### c) Psychological Sequelae

A most significant issue in the discussion of the effect of cloning on children is the potential for psychological harm to the child. The evils that make up such harm can be identified as follows:

- (i) cloned children will be harmed by societal prejudice;

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<sup>38</sup>NBAC Report, *supra* note 13 at 72-74.

<sup>39</sup>Margaret Jane Radin, “Reflections on Objectification” (1991) 65 Southern Cal. L. Rev. 341 at 345, referring to Immanuel Kant, *Groundwork on the Metaphysics of Morals* (1785), translated by H.J. Paton, *The Moral of Law*, 1948.

<sup>40</sup>NBAC Report, *supra* note 13.

<sup>41</sup>NBAC Report, *ibid.* at 70.

- (ii) cloned children will be harmed by the demands and expectations of parents or nucleus donors who would expect a positive return on their putative investment; and
- (iii) cloned children will be harmed by their own awareness of their genetic origins, *e.g.*: in circumstances where the genetic donor is a third party.

The first objection to cloning from a child welfare perspective dictates that cloning should be disallowed because clones will be harmed by the prejudicial attitudes other people may have towards them. Deech puts the problem as follows:

Would cloned children be the butt of jibes and/or discriminated against? Would they become a sub-caste who would have to keep to each other? Would they be exploited? Would they become media objects? ...<sup>42</sup>

Burley and Harris argue that, “Deech’s objection here gives primacy to the well-being of future clones.”<sup>43</sup> They posit the analogy of the inter-racial marriage in a society hostile to mixed-race unions in support of their proposition that the harm being visited upon cloned children derives not from the parents who chose to clone but from the members of society who will practice the prejudice.

#### **d) Demands and Expectations of Parents or Nucleus Donors**

Holm argues that one reason for not cloning is that the clone will be living a “life in the shadow”<sup>44</sup> of the person from whose genes he or she was cloned. According to Holm, the clone would be, “incessantly compared to the donor”,<sup>45</sup> therefore, the clone would not have an open life that was fully his or her own. This deprivation, in turn, infringes the autonomy of the cloned child. Central to this issue is the implication that pressure will be brought to bear on the cloned child, the result of which will be a denial of an open future because of phenotypic<sup>46</sup> knowledge of the cloned source. The concern is that the cloned child will feel pressured to emulate or copy the life of the gene source.

A further sense in which it could be argued that cloning might be seen as depriving a child of its autonomy rests on what Robertson describes as a, “crude

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<sup>42</sup> Ruth Deech, “Human Cloning and Public Policy” in Justine Burley, ed., *The Genetic Revolution and Human Rights* (Oxford: Oxford University Press, 1999) and cited in Burley & Harris, *supra*, note 1 at 110.

<sup>43</sup> *Ibid.*

<sup>44</sup> S. Holm, “A Life in the Shadow: One Reason Why We Should Not Clone Humans” (1998) 7 *Cambridge Quarterly of Health Care Ethics* 160 at 162.

<sup>45</sup> *Ibid.* at 160.

<sup>46</sup> Phenotype. “The organism itself as opposed to its genetic constitution, the genotype.” Phenotypical. “Relating or belonging to phenotypes.” *Supra* note 14 at 1297-8.

form of genetic determinism.”<sup>47</sup> It is argued that by having a cloned child with only one set of genes, the parents of that child are depriving the child of the autonomy that s/he would have had if s/he possessed a different set of genes.

### e) Identity

Much opposition to human cloning has been based on concerns about a diminished sense of uniqueness and individuality in children who are cloned using the DNA of other persons.<sup>48</sup> The basis for the concern derives from the fact that a unique genome is essential to individuality and that if one has the same DNA as another, the cloned child will — at least in theory — inevitably be viewed as a copy of the person from whom the DNA came. This will produce such a diminished sense of individuality that it would not be in the cloned child’s best interests to have been born at all.<sup>49</sup>

The issue of genetic identity is a most serious problem writes Ehlers:<sup>50</sup>

All of us have had the privilege of receiving a unique combination of genes from our parents. We delight in the knowledge that we have our own genetic identity. However, a child cloned from an adult would be denied this experience. Instead, the child would live in the shadow and expectations of his [or her] predecessor. Just as many are prone to compare a younger child with his or her older sibling, the cloned child would face an even higher level of scrutiny in that he or she would be compared to the parent.<sup>51</sup>

The American Medical Association argues:

[I]f raised by the clone-parent, a clone-child could see what he or she has the potential to become. In this respect, human clones would differ dramatically from monozygotic twins who develop simultaneously. The timing of development is a key difference between monozygotic twins and human clones. Having insight into one’s potential may cause enormous pressures to live up to expectations (or inappropriately relieve pressure to do so), even more so than those generally experienced by children.<sup>52</sup>

The interesting position of monozygotic twins and clones will be discussed later in the paper.

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<sup>47</sup> Robertson, *supra* note 13 at 29.

<sup>48</sup> NBAC Report, *supra* note 13 at 29.

<sup>49</sup> Robertson, *supra* note 35 at 1411-12.

<sup>50</sup> Ehlers, *supra* note 6 at 525.

<sup>51</sup> *Ibid.*

<sup>52</sup> AMA Position Paper, *supra* note 7 at 5.

Finally, psychological harm could flow on to the cloned child as a result of the cloned child becoming aware of the existence of a predisposition towards a particular genetic condition that the child has inherited through the process of cloning. If a person with known genetic predispositions and conditions is cloned, the cloned child's genetic predispositions and conditions will, due to the very nature of cloning, also be known to a certain extent. Presently, a child's genetic predispositions can be predicted to varying degrees if the parent's genetic predispositions have been determined. Knowledge of a child's genetic predispositions raises serious concerns about the autonomy and best interests of the cloned child. The American Medical Association urged caution in this area,<sup>53</sup> arguing that the harm of preempting the child's future choice in knowing or foregoing knowledge of his/her genetic status and the danger of abrogating the child's right to privacy with respect to this status must be carefully weighed.<sup>54</sup> The harms set out above, whilst compelling at first instance, beg the question: do they provide a morally justifiable basis for an *ab initio* prohibition on all work relating to somatic cell nuclear transfer cloning, whether clinical or research-based?

### Whither Prohibition?

This paper will now critique the various harms to a cloned child set out above that have been used to justify a prohibition on cloning.

In response to the proposition that somatic cell nuclear transfer cloning amounts to the objectification and commodification of the cloned child, I argue that such objection is a symbolic one. Such a risk would be justifiable in the event that somatic cell nuclear transfer cloning was to be employed for the purpose of producing a sub-class of workers or many copies of a particular genome to serve societal utilitarian or individual goals without regard to the welfare of the rest of society, as portrayed in Aldous Huxley's, *Brave New World*, or to mass-produce an army of dictators as portrayed in Ira Levin's, *The Boys From Brazil*. But in relying upon these scenarios to justify a ban on cloning is to lose sight of the fact that in contemporary societies, cloning requires the fundamental parental elements of gestation and rearing of a child.

It is accepted that parents who choose to clone a child with DNA that they have specifically chosen can be seen as lending some credence towards the objection based on commodification, as the assumption would be that they are expecting a positive return on their putative investment — technically rendering the child as a mere means to an end. However, this argument ignores the reasons that draw people to have children in the first place. These reasons are usually many and can vary from obeying God's commandment of making "mankind in our own

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<sup>53</sup> American Medical Association Ethical Opinion 2.138, "Genetic Testing of Children", submission to National Institutes of Health Report on *Human Embryo Research*, Washington, 1994.

<sup>54</sup> *Ibid.*

image, according to our likeness,"<sup>55</sup> to nothing more than experiencing the sheer joy of having children. Many of the ulterior motives associated with somatic cell nuclear transfer cloning using chosen DNA can exist simultaneously with love for the child himself/herself together with feelings of bonding generated as a consequence of the process of gestation. Support for this view can be found in Robertson's argument, "[o]rdinarily, the existence of ulterior or mixed motives for wanting children does not cast doubt on the ethical acceptability of reproduction, for they do not prevent parents from loving children for themselves or respecting them as persons in their own right."<sup>56</sup>

Similarly, parents may choose to use a particular genome for the purpose of cloning their child because they may wish to be tied to a certain lineage (this is particularly so in the event of a couple using the husband's nucleus and the wife acting as the gestational parent), or simply in an effort to avoid the genetic lottery of unknown tissue or embryo donation.

An interesting paradigm in this area is the use of somatic cell nuclear transfer cloning with a view to creating a child for the purpose of producing solid organs and/or tissue for clinical transplantation into an existing child who is gravely ill. A compelling parallel to the use of cloning to obtain tissues and/or organs for transplantation is the case of Anissa Ayala,<sup>57</sup> who at age 18 years was diagnosed with leukaemia. Although in remission, there was a chance that the condition would recur and that eventually a bone marrow transplant would be needed. Neither of Anissa's parents nor her siblings were compatible bone marrow donors. Accordingly, Anissa's parents decided to have another child so that it might serve as a compatible bone marrow donor, if necessary. The couple conceived coitally and gave birth to a child who turned out to be a perfect tissue match for Anissa when the need for bone marrow donation arose. Some ethicists criticized the actions of Mr. and Mrs. Ayala, labelling their baby as a means to an end and not as an end in itself.<sup>58</sup> Mr. and Mrs. Ayala rejected such criticism arguing that they loved their baby and were committed to its development and upbringing notwithstanding the motivation behind its conception.

The example of Mr. and Mrs. Ayala goes a long way towards diminishing the objection to cloning based on the commodification of the cloned child. If Mr. and Mrs. Ayala had acted ethically in accepting into their bosom the child whose conception was motivated by another child's potential need for a bone marrow transplant, then using an existing child's DNA in order to have another child as a source of solid organ and/or tissue should, *ipso facto*, also be acceptable.<sup>59</sup> There-

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<sup>55</sup> Genesis 1:26 (American Standard).

<sup>56</sup> Robertson, *supra* note 35 at 1419.

<sup>57</sup> For a discussion of this case, see J. Rachels, "When Philosophers Shoot from the Hip" (1991) 5 *Bioethics* 66 at 67.

<sup>58</sup> *New York Times*, 17 February 1990 A1.

<sup>59</sup> See e.g., J. Savulescu, "Should We Clone Human Beings? Cloning as a Source of Tissue for Transplantation" (1999) 25 *J. Med. Ethics* 87.

fore, the threat of objectification or commodification is not significantly greater with the process of somatic cell nuclear transfer cloning than it is with children born as a result of coital reproduction.

Accordingly, it is argued that concerns about the objectification and commodification of the cloned child do not attract significant moral weight to the proposition that somatic cell nuclear transfer cloning should be banned on the grounds that it offends the welfare of the cloned child. It is reasonable to suggest that only couples seriously motivated towards rearing the resultant child would embark on the intrusive medical procedures, gestation and child-rearing required to have a child for an ulterior purpose in addition to advancing the interests of the child himself/herself.

In response to concerns in relation to kinship, it is argued that such concerns provide no compelling reason to justify a ban on reproductive cloning. In response to concerns arising out of the cloning of one's child, it is argued that in circumstances where the wife provides the egg into which the child's DNA is inserted, she will be the provider of both nuclear and mitochondrial DNA, whilst also acting as the gestational mother. In the event that the wife does not provide the egg, she is nonetheless the gestational mother as well as the supplier of DNA — given, however, that such supply was made at an earlier point in time.

The only “relational oddity”<sup>60</sup> arising out of such scenario is that the child will have an older sibling with an identical nuclear genome — a later born twin. Whilst this raises the novel question of the relationship between an earlier and later born twin — owing to the common strain of DNA possessed by both — there is nothing problematic in the relationship between the twins individually or as between each of them and the rearing parents.

The issue of kinship becomes more relevant when a third party's DNA is used. As indicated, the couple will gestate and rear a child with whom neither will have a genetic tie. Similarly, the clone source will have a later born identical twin with whom s/he will have no rearing nor social relation. Whilst this situation varies from the kinship arrangements that flow from families derived from coital reproduction, there continues to exist a gestational relationship with the wife and a rearing relationship with the wife and her husband.

Relationships of the types so described are not dissimilar to the social, gestational and genetic relationships that flow from various forms of socially acceptable assisted reproductive technology such as artificial insemination by donor. Cloning, as with artificial insemination by donor, maintains a gestational relation as well as a commitment on the part of the parents to rear. A similar situation exists in adoption where a couple will commit to a rearing role without a genetic nexus.

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<sup>60</sup>Robertson, *supra* note 35 at 1424.

The situation involving self-cloning and rearing — whilst raising a curious relationship between the cloned child and the parents of the clone source (ie: social/genetic grandparenthood) — can be justified with the proposition that the intention of the clone source to rear the resulting child ought to define appropriate kinship relations, with the clone source and his/her spouse recognized as rearing parents. The clone source's parents can, in turn, be properly described as grandparents. Again the analogy is drawn to the identification of inter-generational kinship roles in cases of adoption.

Accordingly, it is difficult to maintain a prohibition on somatic cell nuclear transfer cloning from the perspective that the cloned child's welfare will suffer because of problems associated with kinship and lineage. As with adoption, the aim of the couple is to create a normal family rearing situation which they typically cannot achieve by means of sexual reproduction. Indeed, with cloning, at the very least there exists the gestational relation.

In response to the fears that a cloned child will be harmed by societal prejudice, it is argued that this is not a morally sound reason to ban cloning and that society should concentrate on combatting the prejudices and attitudes that are the source of the harm to the clone. The morally responsible approach to this problem would be to educate society about the new genetics — with particular emphasis on somatic cell nuclear transfer cloning — and to propagate an attitude within the community that rejects the assaults on the personal autonomy of clones as described by Deech.

In response to the concern that a clone will live a "life in the shadows" of parental expectations, it is argued that Holm's argument is illusory as there is nothing to suggest that a child being burdened by the weight of parental expectations is something unique to children born as a result of somatic cell nuclear transfer cloning.

Parents who are motivated towards the rearing of their cloned child will in the end have to accept the cloned child as a separate and uniquely individual person with his or her own preferences and paths in life. Indeed, cloning may actually have the effect of reducing any potentially burdensome expectations on the part of the parents. For example, a clone's parent who is clumsy ought not to expect the cloned child to excel in sports. True, the same parent may harbour expectations that the child will excel in law or philosophy, however, to assert that the level and weight of expectation will be so great as to justifying an *ab initio* ban on somatic cell nuclear transfer cloning is illusory. This issue is also relevant to the concern expressed previously in this paper about a cloned child's autonomy being infringed by the child only having one set of genes. This position claims too much. The argument overlooks the fact that none of us are controlled exclusively by our parental genes. If that were the case, then no one would have autonomy because we would all be shackled by the pre-programmed expectations and determinants of our forebears, or even by our own.

Another factor that mitigates the harm that a clone will suffer — particularly from the perspective of genetic determinism — is the environment into which the clone is born. This is particularly relevant in the case of a parent cloning himself.

For example, I like football and because of the environment into which my cloned child is born s/he also develops a passion for football. However, given prevailing environmental factors such as availability of a wide coverage of games on television, peer group preferences and dislikes, and the like, my cloned child may choose to support a team different than mine. The environment is a matter of relevance to the issue of personal identity and the concern that a cloned child will suffer psychological harm from having a later born genetically identical sibling. These issues will be looked at later in this paper.

In response to Holm's argument that the weight of parental expectation will infringe upon a cloned child's autonomy by denying the clone an open future, it is suggested that such argument is founded on a set of consequences that are speculative in nature. The concept of a child's "open future" is described by Feinberg<sup>61</sup> as an obligation on the part of those charged with the responsibility of caring for a child not to close off any future possibilities that the child may have, thereby eliminating or otherwise significantly reducing the range of opportunities that the child may choose to incorporate into his/her life. Inherent in this notion are the cluster of rights that a parent will hold on trust for a child until such child is competent enough to exercise them *sui juris*. Feinberg describes these rights as "C-Rights"<sup>62</sup> or "rights-in-trust"<sup>63</sup> where he argues that these rights resemble the autonomy rights of adults with the exception that a child lacks the competence to exercise the same. Feinberg's argument rests on the proposition described by Houlgate that a child is a potential moral agent and as such s/he has the natural right to be provided with the conditions that will allow him/her to develop into a moral agent.<sup>64</sup> Feinberg describes these conditions as "anticipatory autonomy rights"<sup>65</sup> which are held in trust until a child is competent.

Inherent in this model is the fiduciary nature of the family. Traditionally, the law would yield to the rights of parents in regulating the parent-child relationship. More recently, as the emphasis of legal regulation shifted to protecting children's interests,<sup>66</sup> some critics have targeted the traditional focus of parents' rights and impeding the goal of promoting children's welfare.<sup>67</sup>

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<sup>61</sup> See J. Feinberg, "The Child's Right to an Open Future", in William Aiken & Hugh LaFollette, *Whose Child? Children's Rights, Parental Authority and State Power* (Lanham, Maryland: Rowman & Littlefield, 1980) at 124-153.

<sup>62</sup> *Ibid* at 125.

<sup>63</sup> *Ibid*.

<sup>64</sup> Laurence D. Houlgate, *The Child and the State: A Normative Theory of Juvenile Rights* (Baltimore: Johns Hopkins Press, 1980) at 56.

<sup>65</sup> *Supra* note 61 at 126.

<sup>66</sup> Such shift is clearly demonstrated in Australia with the United Nations Convention on the Rights of the Child-centered paradigm shift away from child custody towards parental responsibility and shared parenting in the mid 1990s.

<sup>67</sup> For example, Connie K. Beck *et al.*, "Rights of Children: A Trust Model" (1978) 46 *Fordham L. Rev.* 669; Elizabeth S. Scott & Robert E. Scott, "Parents as Fiduciaries" (1995) 81 *Va. L. Rev.* 2401.

One way of attempting to balance this conflict is to think of the parents' legal relationship to the child as being shaped by fiduciary responsibilities rather than inherently legal ones derived from status. Indeed, Hall argues that the, "fiduciary relationship is inherent in the structure and purpose of the social 'family unit', [and is] not [reliant upon] the biological fact of motherhood or fatherhood."<sup>68</sup>

If this is correct, then the notion of the family-as-trust applies equally to those families where the children have been created by way of somatic cell nuclear transfer cloning. Accordingly, there is nothing to suggest that a child created by the process of cloning and blessed with rearing parents who are committed to the task of rearing — including holding that child's C-Rights on trust until the child attains the age of competency — cannot have an open future in the same manner as a child born of coital reproduction.

In relation to the argument against cloning based on the psychological problems suffered by a cloned child from having a later born twin — and the issues of personal identity flowing therefrom — it is argued that such a proposition does not take into account the unique bond and relationship shared by twins. Segal reports that most psychological twin studies demonstrate greater social closeness and affiliation between monozygotic twins.<sup>69</sup> Segal goes on to report that "[i]nterestingly, some reunited monozygotic twins confessed concerns about loss of individuality prior to meeting their genetically identical twin, but admitted this concern proved groundless after reunion."<sup>70</sup>

There is nothing to suggest that twins (or even triplets) created by somatic cell nuclear transfer cloning cannot have a special closeness that will outweigh or otherwise render nugatory the risk of being confused with the older twin's phenotype. In any event, concerns of this nature are speculative. But on the basis of arguments such as those put by Segal, such concerns do not amount to an argument of sufficient moral weight to justify an *ab initio* ban on somatic cell nuclear transfer cloning. "What is parenthood, after all, but the teaching of values and knowledge to children in an act of stewardship."<sup>71</sup>

## Discussion

As my arguments have shown, concerns about cloning from the perspective that it will infringe upon the psychological welfare of the cloned child are speculative. The harms identified in this paper are harms that are not unique to children created by way of somatic cell nuclear transfer cloning.

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<sup>68</sup> Margaret Isabel Hall, "'Intuitive Fiduciaries': The Equitable Structure of Family Life" (2002) 19 Can. J. Fam. L. 345 at 355.

<sup>69</sup> Nancy L. Segal, "The Behavioural Aspects of Intergenerational Human Cloning: What Twins Tell Us" (1997) 38 Jurimetrics J. 57 at 60.

<sup>70</sup> *Ibid.*

<sup>71</sup> McGee, *supra* note 17 at 3.

At the time of writing, the legal requirements of parental responsibility would impose upon the rearing parents of a cloned child the same degree of responsibility for the day-to-day and long term care, welfare and development of that child as that imposed upon the parents of a child created through coital reproduction. Accordingly, the law will do as much as possible to ensure the welfare of the cloned child. Similarly, the fiduciary nature of the social family unit will ensure that the rights of the cloned child are held in escrow until the child is competent enough to allow him/her to exercise them as an autonomous moral agent. The dereliction of parents to discharge their fiduciary obligations towards their children is a scenario that is all too familiar in families where the children are created by sexual reproduction. Such a scenario would not be unique to a family who have chosen to use somatic cell nuclear transfer cloning as a method of reproduction.

It is anticipated that parents will generally act dutifully towards their children and in accordance with the law and within the fiduciary parameters of the social family unit irrespective of the method of reproduction. It is up to the parents to assuage any concerns or confusions that a cloned child might have in relation to issues such as personal identity, kinship or the nature of the relationship vis-à-vis the cloned child and the clone source.

To propose a ban on somatic cell nuclear transfer cloning on the basis of various perceived harms to the welfare of the cloned child is not a morally sound proposition. The harms discussed in this note are speculative only and mirror concerns mooted some 30 years ago in response to scientific developments in the area of in-vitro fertilisation and artificial insemination by donor.<sup>72</sup> Accordingly, a ban on somatic cell nuclear transfer cloning cannot be justified from a child welfare perspective *per se* and the need for further clinical scientific, behavioural scientific<sup>73</sup> and philosophical inquiry into cloning provides the moral justification for ongoing work in this area and militates against an *ab initio* ban.

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<sup>72</sup> E.g., William A.W. Walters, "Legal and Ethical Problems of *In vitro* Fertilisation and Embryo Transplants", unpublished symposium paper delivered at Family Planning and the Law Symposium, Monash University, July, 1976, and reprinted in H.A. Finlay & J.E. Sihombing, eds., *Family Planning and the Law*, 2d ed., (Sydney: Butterworths, 1978) at 197.

<sup>73</sup> For example, Segal argues that, "[i]t is currently impossible to evaluate, or to imagine, the many scenarios in which human cloning might prove either justifiable or unacceptable. ... No doubt, dialogue and discussion will continue and it is my hope that behavioral issues will move beyond speculation to increased reliance on empirical evidence", *supra* note 69 at 67.

