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REPRODUCTIVE CLONING: CAN CLONING HARM THE CLONE?

SHAUN D. PATTINSON

I. INTRODUCTION

Since the creation of Dolly the sheep was reported in February 1997, the possibility of a cloned child has elicited powerful declarations of condemnation. A widely held view is that cloning a human being would be immoral and ought to be prohibited by legislation. This paper outlines the regulatory approaches taken in the EU countries (with particular reference to the UK), Canada and the US, before examining the claim that creating a clone would be a wrong to the resultant clone. It is argued that advocates of right-based moral theories must reject this claim, even if the clone is likely to have a terrible life.

For the purposes of this paper, I use ‘cloning’ and related terms to refer to the deliberate creation of a human being that is genetically identical to another human being or has the same nuclear gene set. This paper is only concerned with cloning aimed at producing a child, often called ‘reproductive’ cloning.¹ It is not, therefore, concerned with the creation of a human embryo by use of a cloning technique for other purposes, such as obtaining embryonic stem cells for the treatment of an existing person—often referred to as ‘therapeutic cloning’.

II. REGULATORY APPROACHES TOWARDS CLONING

Although the 17 countries under study take divergent approaches to the regulation of cloning, what legislation does exist tends to be prohibitive.² The majority of this legislation was, however, drafted before the creation of Dolly the sheep and, in consequence, much of it needs to be interpreted rather broadly if it is to encompass the technique used to create Dolly (hereafter the ‘Dolly technique’). As is now well known, this technique involved the removal of an egg nucleus and its replacement with the nucleus of a somatic (body) cell taken from an adult.³

The regulatory history of cloning in the UK is particularly illustrative. The Human Fertilisation and Embryology Act 1990 prohibited only one form of cloning—granting a licence for the nuclear transplantation of an embryo.⁴ Other forms of cloning are only covered by the Act if their use requires a licence, as a licensing requirement is imposed on the storage, use, or creation of an embryo outside the body.⁵ This led the licensing authority, the Chief Medical Officer’s Expert Group, and

¹ See Human Genetics Advisory Commission (HGAC) and Human Fertilisation and Embryology Authority (HFEA), *Cloning Issues in Reproduction, Science and Medicine: A Consultation Document* (HMSO 1998), para. 1.3.

² A more comprehensive summary and analysis of the laws governing cloning can be found in S.D. Pattinson, *Influencing Traits Before Birth* (Ashgate 2002) (forthcoming), Appendix 4.

³ See I. Wilmut *et al.*, ‘Viable Offspring Derived from Fetal and Adult Mammalian Cells’ (1997) 385 *Nature* 810.

⁴ S.3(3)(d).

⁵ More precisely, the Act imposes a licensing requirement on the

(a) creation of an embryo outside of the body (ss.3(1)(a) & 1(2));

(b) storage or use of *in vitro* embryos (ss.3(1)(b) & 1(2));

(c) storage of gametes (s.4(1)(a)); and

(d) use of gametes, unless ‘services are provided for the woman and man together’ (s.4(1)(b)).

the government to the view that, depending on the method used, cloning was either prohibited or subject to a licensing requirement.⁶ However, the Act states that ‘embryo means a live human embryo where fertilisation is complete’, including ‘an egg in the process of fertilisation’.⁷ Therefore, interpreted literally, this Act does not encompass the creation of an embryo using the Dolly technique as this technique does not involve fertilisation or the process of fertilisation.⁸ Aware of this possibility I (with a co-author) expressed the view elsewhere that, as the courts now tend to construe statutes purposefully, the courts were likely to construe this provision to encompass the Dolly technique.⁹ However, in November 2001, the High Court ruled that the Dolly technique was not covered by the Act.¹⁰ The UK government acted quickly and passed the Human Reproductive Cloning Act. Section 1(1) of which declares that, ‘A person who places in a woman a human embryo which has been created otherwise than by fertilisation is guilty of an offence.’¹¹ In January 2002, however, the Court of Appeal reversed the decision of the High Court and held that the Dolly technique was encompassed by the 1990 Act.¹² The appeal court adopted a purposive construction implying a phrase into the relevant sub-section, so that it is read as defining an embryo as ‘a live human embryo where [*if it is produced by fertilisation*] fertilisation is complete’¹³. (The pro-life group who brought the action have been granted leave to appeal by the House of Lords.)¹⁴

Therefore, as the law stands at the time of writing, cloning (as defined above) is prohibited if it involves the nuclear replacement of an embryo or the implantation of an embryo created by a means other than fertilisation, and any other activity involving the use or creation of a cloned embryo is subject to a licensing requirement.

The pre-Dolly legislation of four other European countries also has to be read broadly if it is to encompass the Dolly technique.

First, Sweden’s Law No. 115 of 14 March 1991 only regulates experiments performed on ‘fertilised ova’ or gametes ‘before fertilisation’.¹⁵ As a result, the

⁶ See HGAC and HFEA, n. 1 above, para. 2; HGAC and HFEA, *Cloning Issues in Reproduction, Science and Medicine: A Consultation Document* (HMSO 1998), para. 3.4; and Department of Health, *Stem Cell Research: Medical Progress with Responsibility. A Report from the Chief Medical Officer’s Expert Group Reviewing the Potential of Developments in Stem Cell Research and Cell Nuclear Replacement to Benefit Human Health* (HMSO 2000), para. 5.10.

⁷ S.1(1).

⁸ Wilmut and Bulfield are quoted by a House of Lords Select Committee as stating that the egg ‘has not been fertilised and it never is fertilised because the nucleus is transferred to it’: Science and Technology Committee *Fifth Report: The Cloning of Animals from Adult Cells*. Session 1996–97; HC 373–I (HMSO 1997).

⁹ See D. Beylveled and S.D. Pattinson, ‘Legal Regulation of Assisted Procreation, Genetic Diagnosis, and Gene Therapy’ in H. Haker and D. Beylveled (eds.), *The Ethics of Genetics in Human Procreation* (Ashgate 2000) 215–276, at 233. For a slight misinterpretation of our position see 375 H.C. Deb. 1144 (29 November 2001). For a later view, written in the period between the decisions of the High Court and Court of Appeal, see Pattinson, n. 2 above, 5.4.

¹⁰ *R (on application of Quintavalle) v. Secretary of State for Health* [2001] EWHC 918, [2001] 4 All E.R. 1013.

¹¹ I have expressed the view elsewhere that it would have been better to have modified the definition of an embryo under the 1990 Act so that it covered any human embryo or equivalent capable of implantation: see Pattinson, n. 2 above, 5.4. (Some minor tinkering with the Act’s other provisions would also be required.)

¹² *R (on application of Quintavalle) v. Secretary of State for Health* [2002] EWCA Civ 29.

¹³ *Ibid.*, para. 20. Original emphasis. I had suggested that the court might construe the term ‘embryo’ to encompass the Dolly technique (see Pattinson, n. 2 above, 5.4).

¹⁴ Information provided by the Pro-Life Alliance.

¹⁵ Ss.2 and 4, respectively. For an English translation see Ministry of Health and Social Affairs, *Swedish Act concerning Use of Gene Technology on Human Beings and Experiments with*

National Council of Medical Ethics and the National Board of Gene Technology has suggested that cloning using the Dolly technique might not be encompassed by the Swedish legislation.¹⁶ Also, cloning by embryo splitting appears to be permitted up to 14 days after fertilisation, because such experiments escape the prohibition (in s.2 of Law 115) on experiments that have the purpose of developing methods for achieving potentially hereditary genetic effects. The Swedish law is currently under consideration by a parliamentary commission.¹⁷

Second, section six of the German Embryo Protection Act 1990 renders it an offence to create an embryo that is 'genetically identical' to another embryo, fetus, or any living or dead person.¹⁸ The term 'genetically identical'¹⁹ is not defined and, interpreted literally, it does not encompass a clone produced using the Dolly technique, as the mitochondrial DNA of a clone created using this technique will not be identical to that of the nuclear DNA donor.²⁰

Third, the French Bioethics Law 1994 is much more indirect,²¹ as cloning is only regulated insofar as it involves the creation of an *in vitro* embryo for research or experimentation.²² Nonetheless, the view that the Dolly technique is encompassed has been expressed in the Parliamentary preliminary works²³ and opinion No. 54 of the National Consultative Ethics Committee (CCNE).²⁴ Later opinions of the CCNE have, however, recommended a more explicit legislative prohibition,²⁵ which seems to be sensible advice. (Although France was due to revise its 1994 bioethics law in 1999, at the time of writing, the proposed legislation is still being considered by Parliament. This proposed legislation will ban all forms of cloning.²⁶)

Fourth, the regulation of creating embryos using the Dolly technique is also only indirectly covered by the Austrian federal law of 1992.²⁷ Section 2 of Law No. 275

Fertilised Ova (The Printing Works of the Cabinet Office and Ministries 1991), Appendix 2.

¹⁶ Information provided by Elisabeth Rynning.

¹⁷ *Ibid.*

¹⁸ For an English translation see Bulletin of Medical Ethics, 'German Law Protects Embryos' (1990) *Bulletin of Medical Ethics* December, 9.

¹⁹ As translated in S.F. Winter, 'The Cornerstone for a Prohibition of Cloning Human Beings Laid Down in the European Convention on Human Rights and Biomedicine' (1997) 4 *European Journal of Health Law* 189, at 191. This phrase is translated as 'with the same genetic information' in the Bulletin of Medical Ethics, *supra* n. 18, at 10; and as 'having the same genetic information' in European Parliament, *Embryos, Scientific Research and European Legislation*. Briefing Note No. 14/2001.

²⁰ Unless the recipient denucleated egg is from the same maternal line as the nuclear donor.

²¹ For an English translation see Bulletin of Medical Ethics, 'Bioethics Has Become Law in France' (1994) *Bulletin of Medical Ethics*, September, 11.

²² Under Article 152-8 of (what is now) the Public Health Code, the creation of human embryos *in vitro* for study, research, or experiments is prohibited. 'Exceptionally' the couple may permit studies to be carried out on the embryo, provided they give written consent, and the studies have a medical purpose, do not impair the embryo, and have the approval of the National Committee for Medicine and Biology of Reproduction and Antenatal Diagnosis.

²³ Information provided by Pierre Langeron.

²⁴ CCNE, *Reply to the President of the French Republic on the Subject of Reproductive Cloning*. No. 54 (1997).

²⁵ See CCNE, *Re-Examination of the Law on Bioethics*. No. 60 (1998); and *Opinion on the Preliminary Draft Revision of the Laws on Bioethics*. No. 67 (2001).

²⁶ A number of sources report that the bill was passed in the National Assembly in January 2002, but is unlikely to be considered by the Senate until after the presidential and parliamentary elections. See, e.g., <http://www.hhmi.org/bulletin/mar2002/stemcells/global.html>.

²⁷ For an English translation see International Digest of Health Legislation, 'Austria. Federal Law of 1992 (Serial No. 275) regulating medically assisted procreation (the Reproductive Medicine Law), and amending the General Civil Code, the Marriage Law, and the Rules of Jurisdiction. Date of

prohibits all forms of ‘medically assisted procreation’ (MAP),²⁸ unless ‘all other possible and reasonable treatments aimed at achieving pregnancy by means of sexual intercourse have proved unsuccessful or are doomed to failure’.²⁹ Also, gametes and unimplanted embryos are only permitted to be medically examined and treated to the extent necessary to establish a pregnancy.³⁰ Thus, the research on cloned embryos necessary to perfect the creation of a cloned child is prohibited and it is widely held that cloning as such is prohibited.

Thus, the Dolly technique is arguably not encompassed by a literal interpretation of the Swedish, French, German, and Austrian legislation. The courts in these countries are, however, likely to construe legislation purposively. Moreover, the last three countries at least are widely regarded as having successfully prohibited cloning even using the Dolly technique.

More explicit legislation has been adopted in Denmark, Finland, and Spain. In Denmark, under Law No. 460 of 1997, assisted fertilisation must aim to unite a genetically unmodified egg with a genetically unmodified sperm cell, the implantation of genetically identical (fertilised or unfertilised) eggs is prohibited, and experiments intended to produce genetically identical individuals are prohibited.³¹ These provisions appear to catch all forms of cloning. Similarly, the Spanish legislation not only renders it an offence to create identical human beings where it is aimed at race selection, it also renders it an offence to create ‘human beings by cloning in any of the variants or any other procedure capable of originating several identical human beings.’³² Also, in Finland, all research conducted with the aim of cloning a human being is prohibited.³³

Italy, a country renowned for political problems enacting primary legislation in this area, issued a Ministerial Decree on 5 March 1997 prohibiting all forms of experimentation and intervention aimed at (even indirectly) cloning a human. This decree was renewed after the 90 day period for which such decrees have force,³⁴ and it is likely to have been continually renewed since.

In general, where legislation exists it has attempted to prohibit cloning. Even those countries without legislative provisions addressing cloning—such as in Belgium, Canada, Greece, Ireland, Luxembourg, and the US³⁵—often have regulatory

entry into force: 1 July 1992. (Bunestgesetzblatt für die Republik *Österreich*, 4 June 1992, No. 105, pp. 1299-1304)’ (1993) 44 *International Digest of Health Legislation* 247–248.

²⁸ Defined as ‘the application of medical methods in order to induce pregnancy by means other than sexual intercourse’: s.1, as translated in *ibid.*

²⁹ As translated in *ibid.*

³⁰ S.9(1).

³¹ Ss.2, 4, and 28. For an English translation see *International Digest of Health Legislation*, ‘Denmark. Law No. 460 of 10 June 1997 on artificial fertilization in connection with medical treatment, diagnosis, and research, etc. (*Lovtidende*, 1997, Part A, 11 June 1997, No. 84, pp. 2195-2198)’ (1997) 48 *International Digest of Health Legislation* 321. See also Danish Council of Ethics, *Cloning – Statement from the Danish Council of Ethics* (Copenhagen 2001), Appendix 1.

³² S.20(2)(B) of Law 35 of November 1998, as translated in the *Official Bulletin of the State*, No. 282, Thursday 24 1988.

³³ S.26, Medical Research Act No. 488 of 1999. For an English translation see (2000) *Bulletin of Medical Ethics*, February, 7.

³⁴ Information provided by Roberto Mordacci.

³⁵ The Food and Drug Administration (FDA) claims regulatory jurisdiction over human cloning and has indicated that it will not permit the creation of a cloned child because of ‘unsolved safety questions...at this time’: FDA, ‘Statement by Kathryn C. Zoon, Director, Center for Biologics Evaluation and Research, Food and Drug Administration, Department of Health and Human Services Before the Subcommittee on Oversight and Investigations Committee on Energy and Commerce United States House of Representatives’ (2001). In 2000, the House of Representatives

mechanisms pointing towards prohibition. In Canada, for example, there has been a voluntary moratorium on the cloning of human embryos since July 1995, although the effectiveness of this moratorium is questionable.³⁶ Also, in Portugal, there are constitutional provisions in the Fourth Revision of 1997 that seek to protect human dignity.³⁷ The first of these, Article 26.3, states that,

The law shall guarantee the personal dignity and genetic identity of the human being, particularly in the creation, development and use of technology and in scientific experimentation.

The second, Article 67.2(e), places a duty on the State to protect the family by 'regulating assisted procreation, in such terms as safeguard human dignity'. Given the widespread belief that cloning violates human dignity, these provisions might affect the legality of cloning.

All the countries examined that do not currently have legislation are in the process of considering prohibitive legislation. Moreover, there are many international instruments pointing towards prohibition. For example, ten of the fifteen EU countries have signed the European Convention on Human Rights and Biomedicine and its additional protocol on the prohibition of cloning human beings.³⁸ Canada and the US could also sign this Convention, but are unlikely to do so.³⁹ Article 1(1) of this protocol makes what was arguably implicit in the Convention⁴⁰ explicit, by stating that 'Any intervention seeking to create a human being genetically identical to another human being, whether living or dead, is prohibited.' Since 'genetically identical' is defined, under Article 1(2), as 'sharing with another the same nuclear gene set,' use of the Dolly technique on humans is included within this prohibition.

Interestingly, the term 'human being' is not defined in the Convention, so the Netherlands, when it signed the Convention and its protocol, added an interpretative statement.

In relation to Article 1 of the Protocol, the Government of the Kingdom of the Netherlands declares that it interprets the term 'human beings' as referring exclusively to a human individual, i.e., a human being who has been born.⁴¹

passed the Human Cloning Prohibition Bill, which if passed by the Senate will prohibit the cloning of human beings for any purpose. There is also some state legislation: see National Bioethics Advisory Commission, *Cloning Human Beings: Report and Recommendations of the National Bioethics Commission* (NBAC 1997), ch. 5, table 1, 104.

³⁶ See T. Caulfield, M. Hirtle, and S. Le Bris, 'Regulating NRGs: Is Criminalization the Solution in Canada' (1997) 18 *Health Law in Canada* 3, at 8.

³⁷ For an English translation see http://www.parlamento.pt/leis/constituicao_ingles/crp_uk.htm. João Carlos Loureiro kindly drew my attention to these provisions.

³⁸ The Convention opened for signature on the 4.4.97 (and its additional protocol opened for signature on the 12.1.98). The ten EU signatories are Denmark, Finland, France, Greece, Italy, Luxembourg, the Netherlands, Portugal, Spain, and Sweden. Four of these countries have now also ratified the Convention (*i.e.*, Denmark, Greece, Portugal, and Spain). Of these four, all but Denmark have also ratified the Additional Protocol.

³⁹ Article 33(1). For a discussion of the possible reasons why Canada has not signed the Convention, despite being directly involved in its framing, see P.A. Molinari, 'The Convention on Human Rights and Biomedicine: A Canadian Perspective' (1998) 5 *European Journal of Health Law* 349.

⁴⁰ Provisions capable of being read as implicitly prohibiting cloning include Article 1, which requires parties to the Convention to 'protect the dignity and identity of all human beings,' and Article 18, which states that the creation of human embryos for research purposes is prohibited.

These provisions are important, because it is possible to sign the Convention without signing the protocol. Should a country with pre-existing laws on cloning not wish to prohibit cloning, it can make a reservation to these provisions of the Convention by invoking Article 36.

⁴¹ See <http://conventions.coe.int/Treaty/EN/cadreprincipal.htm>.

This statement aims to allow the Netherlands to permit cloning experiments on embryos within the first fourteen days after fertilisation. Despite this, however, legislation put forward by the Dutch government in late 2000 sought to prohibit cloning and its necessary research.⁴² (Some of the legislation's provisions concerning embryo research are, however, subject to future repeal by Royal Decree.)⁴³ The lower house of parliament passed this legislation in October 2001 and it is currently awaiting consideration in the upper house.

A number of other international instruments also take a prohibitive stance towards human cloning. For example, Article 11 of the Universal Declaration on the Human Genome and Human Rights states that 'Practices which are contrary to human dignity, such as reproductive cloning of human beings shall not be permitted'.

Although the European Union has no general competence in this area, it has expressed reservations about cloning. The Directive on the Legal Protection of Biotechnological Inventions, for example, states that 'processes for cloning human beings' are unpatentable.⁴⁴ More directly, the European Parliament has passed numerous resolutions in support of a prohibition on the cloning of human beings, the latest of which is the Resolution on Human Cloning of 7 September 2000.⁴⁵ Similarly, the European Commission has declared that it opposes cloning and will not subsidise experiments. Cloning is also mentioned in some non-legal texts, such as the Charter of Fundamental Rights of the European Union, Article 3(2) presents 'the prohibition of the reproductive cloning of human beings' as something that 'must be respected'.

In sum, despite widespread condemnation of human cloning, relatively few states have passed legislation to prohibit it and many of those possessing legislation are relying on definitions that did not anticipate the Dolly technique. This is, perhaps, not surprising given the controversy surrounding genetic and reproductive techniques generally. Moreover, even though there is widespread acceptance of the view that creating a cloned child is immoral, the use of cloning techniques for other purposes is far more controversial. This might explain why legislatures have been slow to pass new legislation in this area.

Despite the widespread belief that cloning (as defined at the start of this paper) is immoral, the arguments against cloning are far from conclusive.

III. CLONING AS A WRONG TO THE RESULTANT CLONE

Many arguments have been presented against cloning, many of which raise the question of whether the use of a cloning technique can inflict a wrong on the resultant clone. Since a negative answer to this question will undermine many—but not, of course, all—arguments against the creation of a cloned human child, it forms the focus of this paper. In the abstract, the issue is whether merely allowing or causing the

⁴² S.24(f) prohibits 'performing procedures with gametes or embryos with a view to the birth of genetically identical human individuals' and s.24(a) prohibits the creation of 'an embryo specifically for research purposes or for purposes other than the induction of a pregnancy and using such an embryo in research or for purposes other than the induction of pregnancy'. An English translation of the Embryo Bill is available on the Dutch Ministry of Health, Welfare and Sport website: <http://www.minvws.nl>.

⁴³ S.33.

⁴⁴ Article 6(2)(a), Directive 98/44/EC.

⁴⁵ The European Parliament did, however, reject a resolution against all forms of human cloning in November 2001 (see www.bbc.co.uk/hi/english/sci/tech/newsid_1682000/1682591.stm)

conception or birth of a child can ever constitute a wrong to that child.⁴⁶

A child might suffer a wrong where it has been harmed. A number of philosophers, however, have questioned whether a child could be harmed by conduct causing it to be conceived, where its only alternative was not to have been conceived. Parfit, for example, presents what he calls the ‘non-identity problem’, which he conveys using a thought experiment involving a 14-year-old girl.

The girl chooses to have a child. Because she is so young, she gives her child a bad start in life. Though this will have bad effects throughout this child’s life, his life will, predictably, be worth living. If this girl had waited for several years, she would have had a different child, to whom she would have given a better start in life.⁴⁷

According to Parfit, a child born to such a young mother is not harmed merely because a later child would be in a better position. He argues that *this* child’s only alternative was not to exist at all. (Parfit, however, later rejects the idea that harm to this child is the only relevant moral factor.)⁴⁸

Feinberg presents an additional thought experiment involving a couple who choose to conceive a child knowing there is a risk that it will have a genetic abnormality. He argues that this couple does not harm that child, because

to be harmed is to be put in a worse condition than one would otherwise be in (to be made ‘worse off’), but if the negligent act had not occurred . . . [the child] would not have existed at all.⁴⁹

Like Parfit, however, Feinberg seems to undermine the power of this argument by relying on other moral factors. According to Feinberg, such a child could still have been *wronged* where its condition is ‘so severe as to render his life not worth living’⁵⁰

Nonetheless, both authors hold that to be harmed is to be made ‘worse off’ relative to one’s alternatives. Accordingly, a child’s conception/birth cannot harm it, unless that specific child could have been in an alternative less/non-harmed state.

This definition of harm, however, has been challenged. Harris rejects Feinberg’s definition of harm, preferring to define harm as putting an individual into a position ‘in which that individual is disabled or suffering in some way or in which his interests or rights are frustrated’.⁵¹ For Harris, to be harmed is to be put in ‘a disabling or hurtful condition, even though that condition is only marginally disabling and *even though it is not possible for that particular individual to avoid the condition in question*’.⁵² Thus, Harris rejects Parfit and Feinberg’s definition of harm. He does not accept that being made ‘worse off’ relative to one’s alternatives is a necessary condition for being harmed.⁵³

⁴⁶ This issue is also relevant to wrongful life actions, see S.D. Pattinson, ‘Wrongful Life Actions as a Means of Regulating Use of Genetic and Reproductive Technologies.’ (1999) 7 *Health Law Journal* 19.

⁴⁷ D. Parfit, *Reason and Persons* (Clarendon Press 1987), 358.

⁴⁸ He adds, for example, that ‘it *would have been* better if she [i.e., the 14 year old girl] had waited and had a child later’: *ibid.*, 360.

⁴⁹ J. Feinberg, *The Moral Limits of the Criminal Law. Volume 1: Harm to Others* (Oxford University Press 1984), 102.

⁵⁰ *Ibid.* He also argues that where a child has not been harmed or wronged, the mother’s act can be wrong where it involves ‘wantonly introducing a certain evil into the world’: *ibid.*, 103.

⁵¹ J. Harris, *Clones, Genes, and Immortality* (Oxford University Press 1998), 109.

⁵² *Ibid.* My emphasis.

⁵³ A similar position is presented by R.M. Green, ‘Much Ado About Mutton: An Ethical Review of the Cloning Controversy’ in P. Lauritzen (ed.), *Cloning and the Future of Human Embryo Research* (Oxford University Press 2001) 114–131, at 120–121. Green asserts that ‘Harms can occur without someone being made worse off than they were before’ (*ibid.*, 120).

Harris' re-definition might be thought to be contradictory insofar as it accepts that being put into a position in which one's 'interests or rights are frustrated' constitutes harm. For one's interests or rights to be capable of frustration it must be possible for one's interests or rights to be fulfilled (*i.e.*, not frustrated), which implies the possibility of an alternative non/less-harmed position in which they are fulfilled. Consequently, if Harris' rejection of Feinberg's definition is to be meaningful, he must be arguing that being made worse off is a sufficient, but not a necessary, condition for being harmed. Interpreted in this way, Harris' definition is wider than that offered by Parfit and Feinberg.

Although, both Harris and Feinberg purport to offer coherent definitions of harm, a rights-based moral theory cannot be neutral between these two definitions. A rights-based moral theory is one holding that all moral duties derive from rights (as opposed to other claimed moral interests or principles, such as the principle of utility). Thus, according to such theories, all wrongs derive from denying rights-holders of whatever they have a right to.

Reformulated in terms of rights, the question presented by this paper is: can conduct that is a necessary condition for the existence of a particular rights-holder (X), by itself, violate X's rights? A negative answer must be given because being denied of the object of a right (*i.e.*, of whatever the right is to) implies that one could have had that object.⁵⁴ This can be presented in syllogistic form.

- (a) An individual cannot be a rights-holder (have rights) until it exists.
- (b) If an individual cannot exist in the absence of the relevant conduct, then the individual cannot be a rights-holder in the absence of the relevant conduct.
- (c) Thus, any conduct that is a necessary condition for the existence of an individual cannot, by itself, violate that individual's rights.

In short, for one's rights to have been violated, one must have been denied of an alternative existence wherein one's rights are fulfilled.⁵⁵

It follows that we need to ask whether it is possible for the cloned child to have been made worse off relative to its alternatives by the mere fact of its being cloned. However, the use of a cloning technique appears to be a necessary condition for the existence of any particular cloned individual and, even if it were not, there is no reason to assume that any alternative existence would be any better for that individual. Therefore, unless one makes a number of highly implausible and unprovable metaphysical assumptions,⁵⁶ a cloned individual's rights cannot have been violated by its mere cloning.

To be clear, I am arguing that the act of cloning *as such* cannot violate that clone's rights. Rights-based theories can still hold cloning or a particular instance of cloning to be immoral. The act of creating a clone could still involve the violation of rights. There are two possibilities. First, it is possible for cloning to violate the rights of persons other than the clone. Second, where the act of cloning is contingently characterised by an intention to violate the rights of clone *in the future*, then that

⁵⁴ This is a straightforward substitutive instances of the principle 'ought implies can'.

⁵⁵ It is an obvious point that rights-violating conduct can include conduct that threatens the object of someone's right even if that object is not actually damaged. E.g., placing someone at significant risk of physical harm can still violate their right to physical integrity even if that harm does not manifest. In this type of situation the victim is still denied of an alternative existence—one without this risk.

⁵⁶ Examples of scenarios whereby a cloned individual X would be in a worse position because of the cloning process seem to require assumptions such as dualism and the cloning process somehow foreclosing X's alternative corporal existence.

particular instance can be immoral as a violation of the rights of the future clone. Here, it is not the cloning *as such* that violates the clone's rights, but the intention to make the clone worse off (relative to its alternatives) in the future. An example would be where the intention is to create a clone so that it is an exact behavioural replica of an existing individual (as such an act is characterised by an intention to violate the clone's right to autonomy in the future). Thus, this second type of argument does not evoke Parfit's non-identity problem.

IV. CONCLUSION

Although there is a widespread view that cloning is immoral, relatively few states have actually prohibited it and many of those states are relying on definitions that need to be interpreted rather broadly if they are to encompass the Dolly technique. Moreover, for rights-based moral theories, the widespread view that cloning is immoral cannot be defended on the basis that cloning *as such* involves a wrong to the resultant clone. This is so even if the clone is likely to be in a terrible state (where its suffering is unavoidable if it is to exist). Thus, if regulatory positions prohibiting cloning are to be defended, supporters of rights-based moral theories must look to other arguments.⁵⁷

Unfortunately, arguments on cloning are not clearly presented in official declarations and international instruments, as many have a tendency to use indeterminate language and appeals to undefined concepts. Article 11 of the Universal Declaration on the Human Genome and Human Rights, for example, simply asserts that,

Practices which are contrary to human dignity, such as reproductive cloning of human beings shall not be permitted.

Similar language is used by the Convention on Human Rights and Biomedicine and its Additional Protocol on the Prohibition of Cloning Human Beings. The preamble to this protocol, for example, declares that,

the instrumentalisation of human beings through the deliberate creation of genetically identical human beings is contrary to human dignity and thus constitutes a misuse of biology and medicine;

Such statements—relying on appeals to human dignity—require considerable unpacking if they are to be read as relying on more than the claim that a wrong has been done to a clone by its creation. This point is far from irrelevant because, as we have seen, a number of countries are currently in the process of passing prohibitive legislation. The Canadian bill, for example, received its second reading in the House of Commons on 28 May 2002. Although s.2 of Bill C-56 presents six guiding principles, it is not clear how any of these justify its prohibition of cloning.⁵⁸ The first declares the need to protect and promote 'human health, safety, dignity and rights in the use of these technologies and related research', and the last states that 'human

⁵⁷ See Pattinson, n. 2 supra, for a detailed application of one particular rights-based moral theory to cloning.

⁵⁸ S.5(1)(a) of Bill C-56 makes it a criminal offence to 'create a human clone, or transplant a human clone into a human being'. This encompasses the creation of a human clone using the Dolly technique as 'human clone' is defined to mean 'an embryo that, as a result of the manipulation of human reproductive material or an *in vitro* embryo, contains the same nuclear deoxyribonucleic acid sequence as if found in the cell of a living or deceased human being, foetus or other embryo' (s.3). Bill C-56 is available at: http://www.parl.gc.ca/PDF/37/1/parlbus/chambus/house/bills/government/C-56_1.pdf.

individuality and diversity, and the integrity of the human genome, must be preserved and protected'. Once again we are left with the feeling that other arguments are in play but remain unsure as to what those arguments are.