

Anthony McCarthy

Cloning means the production of a living being that is genetically identical to the one from which it originated. Specifically, human cloning is the artificial production of a genetic replica of another human being. This is achieved without the contribution of two gametes (sperm and ovum), and is therefore a form of asexual reproduction. Whereas IVF is a form of reproduction achieved by fertilisation of an ovum (egg) by a sperm outside the body, sperm is not used in cloning.

One way in which cloning could take place is by somatic cell nuclear transfer. Here, the nucleus of an unfertilised ovum is removed and replaced with the nucleus of a somatic cell, or whole diploid body cell, from a developed embryo, foetus or adult individual. The ovum is then stimulated either chemically or by an electrical pulse to create a human embryo. Given that the nucleus contains almost all of a cell's genetic material, the new embryo will be a delayed genetic twin/clone of the human individual from whom the cell was taken. In this whole process male sexuality plays no direct role.

Purposes of cloning

The above-described cloning technique, if successfully applied to human individuals, will produce a new human being at its embryonic stage of development. This makes it clear that all human cloning is, in fact, reproductive. The term 'reproductive cloning' is therefore a tautology.

Aside from the definition of cloning as a technical procedure, it has become

commonplace to define cloning in terms of the purposes for which it is done. These 'definitions by aim', need to be carefully analysed. Nowadays there is much talk of "reproductive cloning" and "therapeutic cloning", as though they were different types of cloning. They are not. "Therapeutic cloning" refers to the production by cloning of a human embryo for the purpose of using that individual as a source of cells or for experimentation that may offer therapeutic benefits to other human beings. The term is manipulative because it obscures the fact that such interventions carried out on the early clone human embryo are never therapeutic for that individual, who, as a result of having cells extracted from it at an early stage, will die.

For the sake of clarity, and given the fact that all cloning is reproductive in itself, I will refer to cloning for research / transplantation (or experimental cloning), and cloning for birth (or live-birth cloning). In the term cloning for birth is included both cloning done with the intention to implant and bring to birth, and also any implantation of a clone embryo for this purpose.

Cloning for birth

An example of cloning for birth has been given with the case of Dolly the sheep. In a human case it would mean implanting a clone embryo in the uterus of a woman whose ovum had been used for cloning, or in the uterus of a surrogate mother, with the intention that the clone child be carried to term. This new individual human being, barring genetic mutation, should

produce a body structure similar to that of its adult cell donor. Cloning for birth has, among other things, been proposed as a way for women suffering from infertility to obtain clone children. These children, commissioned by and cloned from the infertile woman, would be produced using another woman's ovum, then implanted, gestated and born through either the commissioning mother or a surrogate.

Given what we presently know from animal cloning, it is clear that this procedure would cause physical harm to human clones. Many of these human beings would have severe genetic or other disabilities, which might only become apparent at late stages of pregnancy. Many babies would miscarry and those making it to birth would be likely to suffer premature death or major health problems caused by the means used to produce them. Nearly all scientists working in the field would accept this. On top of these problems, clone human beings who were discovered in the womb to be disabled would be at a much higher risk of being destroyed through deliberate abortion.

Women choosing to gestate clone children would be exposed to grave physical and psychological harm. The high rate of miscarriage would carry health risks for the mother, aside from the trauma that would result from either miscarriage or neonatal death. Observation of animal clones has shown that malformed or oversized fetuses could constitute a direct physical threat to the gestational mother. In such cases as these, as well as in cases of genetic disability, mothers would be under pressure to abort the child they were carrying. Abortion, in addition to taking the life of the child, would carry health risks

for the mother, both physical and psychological.

Procreation

The most obvious threat posed by somatic cell nuclear transfer cloning is to the nature of human procreation and the rearing of children. Cloning, as a form of asexual reproduction, completely displaces the procreative act between a man and a woman. As human beings we are bodily beings. Our living bodies are intrinsic to our unified personal experience. Sexual procreation between a man and a woman is a single act performed by a pair. In this regard the man and woman form, in the words of philosopher Germain Grisez, a single reproductive (or procreative) principle. It is because as persons we are a dynamic unity of body and soul that our bodily acts carry an inherent meaning. In light of the couple forming a single reproductive principle, we can see that an organic unity of persons is present in the procreative type of act. The meaning of these acts is therefore not absolutely reducible to the personal projects of the couple. These acts have an inherent connection to the good of the transmission of life. To deny this and to claim that the meaning of sexual union is determined simply by the desire/will of the couple, is to deny the basic purpose of sexual union between a man and a woman, and with it the normative meanings of our sexual differentiation and complementarity.

By giving themselves in love to each other and bringing together their gametes (sperm and ovum) through a personal sexual act, the couple each give genes to form a completely new human individual. The new human is genetically unique, related to the parents but distinct from them. He has come to be as a result of the procreative act of his parents and his

genetic make-up is unpredictable. He is genetically linked to the past, yet open to the future. These features carry the valuable message that the child is the gift and fruit of sexual procreation, who, as such, must be unconditionally accepted in all his contingent and unplanned characteristics. He is not produced or chosen as a particular child with particular features according to a particular template. He is not custom-made according to the will of his parents. The fact that the child is a unique and contingent gift, the result of sexual union, invites acceptance of a different yet equal and related person, not someone the parents own, or who exists only for their own purposes. The sense that a child is not a possession is an important one for parents to have, lest they be tempted to treat him as if he were. In rearing a child the parents should guide and to some extent mould the child, but only so that he or she may develop a truly separate identity from them.

Production

The clone child will not come to be as the result of a sexual act between two persons, but will be produced in a laboratory following a series of separate acts. These acts will include the extracting of an adult cell, the extracting of a woman's ovum and removal of its nucleus, the technical procedure of fusing the cell with the enucleated ovum in vitro, the transferral of the early embryo to a woman's womb. At no point could there be said to be, in any of these acts, an organic unity of persons. Each act is part of a production process. The child is brought into being according to set criteria, in this case with a pre-selected genetic pattern. Thus the 'parents' of the clone have, or aim at having, complete control over what type of child they are to have in the same way a producer has complete control over a

product. A child produced by such methods is thus reduced to the status of an object of the producers' will. This inequality of relation, whereby producers wilfully place themselves in a position of dominion over the product, is radically opposed both to the meaning of procreative acts and to the equality and dignity of the child. Such a choice is therefore intrinsically wrong. Putting oneself in the position of producer greatly increases the temptation to value one's child according to how he/she measures up to one's requirements.

Identity

The clone child, while being a near genetic replica of the adult cell donor, will be an entirely separate individual. We are not reducible, as human persons, to our genes. Human identical twins occurring in nature are closer to each other genetically than a clone and its adult cell donor would be, but remain completely separate persons and undergo separate experiences. Radical similarities between persons do not make them identical as persons. One can only talk of similarity against a background of difference.

But the point is not that a clone would not be a distinct person from his/her adult cell donor. It is rather that he/she will have been deliberately produced as a replica of another human, and thus will appear to be a replacement copy of someone, and not a unique original. To attempt to replicate someone genetically is to attempt something that radically removes genetic differences between people. Such differences certainly symbolise the uniqueness and separateness of persons, and protect us against the idea of treating people as replaceable. Cloning, which makes mass replication possible, would undermine this important symbolism

and thereby handicap the formation of a sense of individual identity.

Our genetic uniqueness helps us to have a sense of our essential uniqueness, and carries with it the message that we have the possibility of living a life that is fully our own. The clone is denied this option insofar as he is, genetically, re-enacting another's life. The clone's possibility of self-determination, a value our present society claims to respect, would be undermined given that he could always be compared to the one from whom he was formed. In many cases he will have been formed precisely in order to resemble an original. He will live life in the shadow of his original whose actual development could be used as a template in the clone's rearing.

Even if the clone were never to meet his or her original, the very awareness of such a person's existence would lead to a sense of living in the shadow of this unknown person. To argue, as some advocates of cloning do, that it is best to keep the clone in ignorance of how he came to be, is implicitly to admit the existence of the very problem that those who oppose cloning have pointed out.

Motherhood and identity

The formation of a sense of identity is deeply influenced by familial relations. The clone has no father as such. A single woman could take an adult cell from herself and have it fused with one of her enucleated eggs thereby producing a clone of herself who will be even closer to her genetically than a clone who is not made using her ovum. She will then be the belated genetic twin-sister, as well as the birth mother, of the clone child. How, one may ask in a case such as this, is the child to develop any sort of self-identity? The choices made by the single woman will

deliberately deprive the clone child of both a genetic and a social father, thereby distorting that child's relations with the male sex.

In another case a clone could come to be with a partial genetic mother (whose enucleated ovum is fused with an adult donor cell to create the clone embryo), a gestational mother (in whose uterus the clone will be implanted and brought to birth) and a commissioning mother (who ordered the clone). Are these separate people to be regarded as quasi-parents, and what duties do they have to the clone child they helped to bring about? Which one is duty bound, for the sake of the child, to take on the role of social mother? The genetic mother is not a genetic mother in the ordinary sense, in that she will not have contributed a haploid set of chromosomes to the baby, but will only have provided an enucleated ovum, thereby contributing only mitochondrial genes. The gestational mother will, again, be only a partial mother to a child that is not fully her own and in whose creation she played no part. The commissioning 'mother' may become the social mother, but has no prior claim which could trump that of the woman who gives birth.

The distancing of the gestational mother from the partial genetic mother of the child in the case of cloning shows up the radical fragmentation and limitation of maternity, not to mention the obliteration of paternity. What would be the duties of the adult cell donor toward his / her younger genetic twin? These questions arise, at least in part, because the clone has been denied real parents. If the 'genetic mother' providing the ovum is also the gestational mother, we still have a case of partial surrogacy, because the ovum provider's genetic contribution is absolutely minimal. She carries a child

who is almost entirely formed by the genetic contribution of another. In the case of a donated egg being fused with an adult donor cell following which the clone is implanted into another woman to gestate, a further gap is introduced, a further confusion as to who the mother is. All of these factors serve to remove from the child those traditional ties to parents which can act as a protection against his or her maltreatment. This situation, coupled with the inherent meaning of the production process that has been used to create the clone, leave the clone vulnerable to many types of abuse.

Familial relations

Clone children, like adopted children or those conceived with donor gametes, will have a perfectly reasonable desire to find out their genetic heritage. In the case of the clone there will be a desire to discover and meet one's genetic older twin, assuming that one is being raised outside this person's family. Human experience gives the lie to the belief that genetic inheritance is absolutely irrelevant, and that social parentage is all that matters. At present there are men and women who 'donate' sperm or ova for the creation of children they ensure will never have any social connection with them. This has already become big business, with desirable males/females being able to charge extra for their gametes to be used. 'Donor' offspring are thus robbed of their rightful inheritance in terms of parental care. Cloning, as well as degrading the clone, will simply exacerbate this iniquitous situation, further entrenching the idea that one generation can prosper at the expense of the next.

* This extract is from A. McCarthy: *Cloning* (Linacre Centre / CTS Explanations series, 2003)

The Linacre Centre for Healthcare Ethics,

**38 Circus Road,
London NW8 9SE
England**

Tel. +44 (0)20 7266 7410

Fax +44 (0)20 7266 5424

admin@linacre.org

Registered Charity No. 274327