Virtual Mentor
American Medical Association Journal of Ethics
April 2001, Volume 3, Number 4: 113-116.

STATE OF THE ART AND SCIENCE

Cloning Talk Turns Serious

Faith Lagay, PhD

Parents seek to duplicate dead child! Scientists say, "It can be done!" When these banner headlines appear on the cover of the venerable *New York Times Magazine* rather than in the *National Inquirer*, cloning talk has, indeed, turned serious[1]. After the initial media flurry following reports of a successfully cloned mammal (Dolly) in 1997, talk of human cloning disappeared from the front pages of serious and staid publications (replaced by back page musings about those with the money and the desire to replicate a favored and recently departed pet dog.) Now human cloning's back in the *Times*, with accounts that "a grieving family hopes to replace a lost child," and that a rich sect in Italy is prepared to help them do it[1].

Genetic science has changed in the 4 years since Dolly's birth and, with it, discussion of the ethical issues that cloning raises. One of the early specters spawned by the notion of cloning, for example, was the nightmarish vision of "flocks of enslaved clones raised for body parts"[2]. Stem cell research has since dispelled that dark dream with the bright hope that scientists will learn to program undifferentiated (pluripotent) cells so that they develop into specified types of tissue and organs that can then be used to replace defective or diseased body parts. Such developments, of course, present their own sets of ethical issues.

If the talk is now more serious -- meaning it's more likely that cloning will happen -- it is also more serious in being far less sensational. Geneticists, ethicists, fertility specialists, and health policy makers have thought calmly and carefully about cloning and its ethical and social implications, and have broken the early monolithic specter of "cloning" into at least 3 categories of practices: (1) cloning of embryos, (2) cloning one's self or one's partner to have and rear a child, (3) cloning a sick child to generate transplantable tissue for it or cloning a dying or recently deceased person to replace him or her.

Cloning Embryos

Researchers are working to unlock the secret of cell differentiation, believing that when they do, they will be able to direct pluripotent stem cells down a select path of development, ultimately producing specific types of tissue to replace, for example, dysfunctioning brain tissue in patients with Alzheimer's. Couples using in vitro fertilization (IVF) techniques might then clone the embryos that are implanted so as to have the potential for matched bone marrow or other tissue if their child should ever need it. Stem cell research, however, has been controversial in the US since its

beginning because stem cells are derived from embryos that are destroyed in the retrieval process. Current National Institutes of Health (NIH) guidelines allow funding of research only on stem cells derived from embryos created for but not used in fertility treatment. The guidelines prohibit use of federal funds to derive cells from embryos or to create embryos for research purposes. (Federal funds may be used for research on stem cells retrieved from fetal tissue.)

The NIH position against funding the destruction of embryos to retrieve stem sells is understandable. Yet one must recognize that by prohibiting creation of an embryo-either from an existing embryo (by so-called "twinning") or by somatic cell nuclear transfer (cloning), NIH commits to the destruction of more embryos created from eggs and sperms in fertility clinics. What, then, is unacceptable about embryo cloning in the laboratory[3]? Since the embryos created in fertility clinics are destroyed also, it is not the outcome or consequence that matters but the intent. Intent is a valid determinant in law as well as in ethics. The NIH guidelines grant, in effect, that creating embryos with the intent that they be used in engendering a child demonstrates a respect for the sanctity of life that is missing when embryos are created or cloned for the sole purpose of destroying them to retrieve stem cells for research. The difference matters to the national conscience, the guidelines suggest, regardless of the final disposition of the embryos.

Cloning One's Self or One's Partner

If a couple is unable to reproduce because of insufficient or defective gametes in one or the other partner, then cloning one parent's genes enables the couple to have a child without introducing a third party's genetic material. This use of cloning has been defended by some as no significant departure from the intent and procedures of other artificial reproduction techniques[4]. In the early post-Dolly days, ethical opposition to this practice centered on the argument that the individuality and personhood of the cloned child would be compromised. He or she, it was claimed, would not have a unique genetic makeup. It wasn't long before many pointed out that a clone was essentially a time-delayed twin, and, as Stephen J. Gould asked, "Have we ever doubted the personhood of each member of a pair of identical twins?" His answer: "Identical twins provide sturdy proof that inevitable differences of nurture (which would be far greater in cloning than in simultaneously gestated twins) guarantee the individuality and personhood of each human clone"[5].

This assurance does not dispel another aspect of parental cloning for reproduction purposes that was seen as repugnant: the relationship of the cloned child to its parents. The cloned offspring is, in effect, the child of one parent and the sibling of the other. The ambiguous kinship could lead to psychological and emotions confusion for all family members -- the mother and her daughter -- sister (or son-brother-in-law) as well as the father and his son-brother (or daughter-sister-in-law).

Cloning to Replace a Deceased Person (or Provide Tissue for an Ill Person)

This part of cloning was taken, at first, as the whole, particularly by the media and its vast audience: people cloning themselves, cloning deceased others that they did

not intend to rear as children, or cloning a sick child to "grow" tissue for that child. And this is the aspect of cloning that remains most controversial. In his attempt to suggest policy for regulating rather than banning cloning, John Robertson draws a bright line of distinction between cloning a child that one intends to rear and cloning without the intent to rear. "A ban on human cloning unless the parties requesting the cloning will also rear is a much better policy than a ban on all cloning," he says. "It prevents a person from creating clones to be used as subjects or workers without regard to their own interests[4]." Even so, allowing cloning on the condition that the cloners intend to rear the child as their own does not remove a crucial ethical stumbling block, namely, that the child cloned to replace another or to provide tissue for another is being used instrumentally, rather than as an end in itself. Parents who conceive children through sexual reproduction in order to provide tissue for an existing child with an illness can be charged with the same violation. In the well-known 1991 case of Anissa Ayala, a second child was conceived to provide compatible bone marrow to treat Anissa's leukemia. The event predated embryo selection technology, but fortuitously Marissa-Eve Ayala's tissue matched Anissa's, and Anissa is now healthy. One cannot speculate on the degree of acceptance and love Marissa-Eva may have received had her marrow not been compatible with Anissa's and had she been unable to serve the purpose for which she was conceived.

Conclusion

These various categorizations and decidedly moderate ways of thinking about cloning may confirm the doubts of those who, like Leon Kass, warned from the beginning that cloning lay at the bottom of a slippery slope with artificial reproductive technologies at the top. "The burden of moral argument," Kass declared, "must fall entirely on those who want to declare the widespread repugnances of humankind [concerning cloning] to be mere timidity or superstition"[6]. While the US government guidelines for research funding currently recognize the moral repugnance of cloning, the tide seems to be shifting in the private sector. According to Richard Dawkins, a chair-holding professor in Public Understanding of Science at Oxford, the fact that one finds cloning repugnant "is not, in itself, sufficient justification for stopping others who wish to enjoy it. The onus is on the objectors to press a better objection"[7]. Cloning talk is getting really serious.

References

1. Talbot M. A desire to duplicate. *NYT*. Feb. 4, 2000:40-45, 67-68.
2. Johnson G. Soul searching. In Nussbaum MC, Sunstein CR, eds. *Clones and Clones: Facts and Fantasies about Human Cloning*. New York: NY: W.W. Norton & Company; 1998:67.
3. Juengst J, Fossel M. The ethics of embryonic stem cells-now and forever cells without end. *JAMA*. 2000;284(24):3180-3184.
4. Robertson J. Cloning as a reproductive right. In McGee G, ed. *The Human Cloning Debate*. Berkeley, CA: Berkeley Hills Books; 2000:42-57.

5. Gould SJ. Dolly's fashion and Louis's Passion. In Nussbaum MC, Sunstein CR, eds. *Clones and Clones: Facts and Fantasies about Human Cloning*. New York: NY: W.W. Norton & Company; 1998:48.
6. Kass L. The wisdom of repugnance. In McGee G, ed. *The Human Cloning Debate.* Berkeley, CA: Berkeley Hills Books; 2000:82.
7. 2018; Dawkins R. What's wrong with cloning? In Nussbaum MC, Sunstein CR, eds. *Clones and Clones: Facts and Fantasies about Human Cloning*. New York: NY: W.W. Norton & Company; 1998:61.

Faith Lagay, PhD is managing editor in of *Virtual Mentor*.