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M. J. Iozzio

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Science, Ethics, and Cloning Technologies

by

M.J. Iozzio, Ph.D.

The author is an Assistant Professor at Barry University, Miami Shores, Florida, teaching bioethics, moral theology and feminist ethics. She received her Ph.D. in Moral Theology from Fordham University in 1994. She is the author of Self-Determination and the Moral Act: A Study of the Contributions of Odon Lottin, O.S.B.

Recent reports of cloned sheep in Scotland have raised questions concerning the proposed and future uses of cloning technology. From the media and its inclination toward headline news, to op-ed reflections by local medical and academic professionals, to backyard musings between neighbors, thoughts of the possibility of human clones express excited tension. The tension between the public's awareness of scientific reality and science fiction is blurred for the moment by news of successful cloning. Relief of this tension requires a scientifically accurate and ethically sensitive response to those who cannot keep current of the fast pace of technological developments in biomedical research. While the prospect of cloning ourselves or superheroes or villains remains fantastic (and either fun or frightening to speculate), here I focus on questions that directly concern those future possibilities at a level that addresses the stages that lead to that future.

Many sectors of society are rightly concerned over the possibilities that cloning presents. The evening television news and the morning papers reported the breakthrough, recognizing an issue of ethics that had not been considered previously by the media, as had physician-assisted suicide or abortion. However, neither professional

ethicists nor magisterial authority have been remiss in exploring the ethical implications of applying this and similar technologies to the human species.¹

In this analysis I will temper some of the more sensational claims of the media with a serious and more realistic look at the realities of current technological possibilities and their probabilities. Second, I will present some of the concerns that an ethical perspective raises in matters that affect us personally and as a society. And third, I will consider how the possibilities of applying this technology to the human species squares with Church teaching on manipulation of human embryos.

Headline News vs. Scientific Reality

The media have sensationalized the possibilities of human cloning with questions of a cloned Michael Jordan or Renee Russo, or, as the population of South Florida might fear, Fidel Castro. While these are ambitious questions, they belie the scientific reality. Science, thus far, presents little likelihood that the genetic material from any of these individuals would in fact produce another of them. The technological reality produces neither photo-copy duplicates nor adults. The technology that produced "Dolly" took DNA from an adult and inserted it into an ovum, which had its genetic nucleus removed;² the cytoplasmic material from the donor ovum remained and still influences the development of the inserted DNA and of ten month old (as of this writing) "Dolly".³ Additionally, the environmental conditions which greatly influence the adults that human babies become - parents, siblings, order of birth, friends, neighborhood, culture, schools, teachers, financial stability, etc. - could not be duplicated. Thus, even if science attempted the fantastic by cloning a human being, we have no guarantee nor reason to believe that the clone would be anything like the characteristics we prize or fear in the original.

I do not want to seem naive by not considering potential abuses of this technology. Many people, professional and lay, concentrate on possible abuses of technologies - the technological imperative must not be ignored, it drives the research scientist to questions. The scientist asks: "What happens when (not if)...we insert, we deprive, we manipulate human genetic material?" The ethicists, on the other hand,

ask in response to the research agenda: "What are we doing to ourselves with this or that action or technological possibility, and why?" Further, if historical precedents indicate in any way future probabilities, the transition from frogs, mice, sheep, cows, and monkeys to human beings is likely.⁴ Would the human clones be developed for purposes similar to those engaged by the agricultural industry to produce prime stock? Beware, before the cloning of human individuals becomes genuinely probable, both ethics and science need to consider establishing boundaries that would prohibit just such a sensational and costly end.

Caution: People are Subjects, not Objects

One of the concerns of the ethical project considers appropriate ways of treating ourselves individually and of being together socially. One of these ways prohibits reducing persons, who are properly subjects, to objects for manipulative use or disposal.⁵ The research technology of cloning makes the species under study the object of its manipulation interest. But, applying this technology to the human species, human beings become the object of research manipulation. That is, when we reduce ourselves to our genetic material as cloning technology requires and subject "it" to technological imperatives, we are objectified. And, becoming the object of manipulation, we become disposable just like all the other objects of research.

A related concern arises over artificial reproductive technologies. Artificial means of reproduction have circumvented conditions of infertility for many heterosexual couples, single persons, and gay women and men who have quite deliberately answered a call to parenthood. These technologies manipulate the gametes (ovum and sperm) of the spouses toward fertilization, or introduce the gametes of a donor, or acquire both gametes from donors to produce an embryo. The embryos, once sufficiently developed, are transferred to the contracting woman or surrogate for gestation. In the donor cases the genetic inheritance of the embryo is extra-familial. The possibility of cloning oneself may be an attractive alternative to the donor case for persons considering both parenthood and their genetic future as it could be expressed in offspring. However, treating donor and surrogates in nonpersonal ways and only as bearers of reproductive material that can be bought affronts individual dignity by a reduction from subject to

object; treating other human beings via cloned genetic material affronts likewise.

Consider this analogy, which addresses both objectification and disposal concerns: prostitutes are the objects of a client's sexual gratification. Prostitutes are explicitly devalued as persons by their clients and their pimps by the ways in which they are manipulated like objects in the market - being bought and sold. Prostitutes have been taught to believe that their bodies (by extension, their very selves) are the "goods"/objects for sale. When the "goods" are damaged or old or in any other way no longer gratifying, they are disposed of as so much unwanted or broken merchandise. The buying and selling of persons, whether for sex, surrogacy, genetic material, or any other kind of manipulation, is prostitution.

The objectification of human genetic material for the express purpose of cloning another self prostitutes it (and the person that human genetic material becomes) by its progress toward unwarranted manipulation and disposal not unlike that of the aged prostitute. Many disapprove of prostitution because it is tantamount to the buying and selling of human flesh with the inherent devaluation of the person who, through prostitution, is reduced to an object, a market product. Many ought likewise disapprove of human cloning, which quite readily devolves into the marketing of those future cloned persons. Does the clone of an Elie Wiesel, a Jimmy Carter, a Mother Hale go to the highest bidder, for example? Do we want to be the buyers and sellers of persons in the guise of the clone? Do we really want to treat our (future) selves as products in this way?

Juxtaposing Church Teaching

The Church's *Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation* (SCDF, 1987), *Donum Vitae* (1987), and *The Catechism of the Catholic Church* (1994) restate the teaching that human life begins and must be protected from the moment of conception. By juxtaposing this fairly consistent teaching (based on the scientific evidence available at a given point in history) onto the technological cloning of human embryos, a strict prohibition arises. The kind of reproduction cloning involves and the experimental procedures not directly therapeutic to the individual human embryo as

subject violate the sanctity of life in its origin and development. The teachings clearly distinguish therapeutic intervention from experimental manipulation or exploitation upon the embryo stages of fetal development. The technology of cloning human embryos v. adult genetic material would constitute manipulation certainly, exploitation probably. Industrial scale cloning of embryos for the purposes of gaining ever more accurate predictors of therapeutic progress would not be tolerated. The Church only allows therapeutic experimentation upon an embryo for the hopeful benefit of that particular embryo in its continued and successful development.⁶ However, the teachings do not prohibit experimentation on genetic material itself, in contradistinction to the embryo or the complete individual genome if it were to be artificially reproduced. Thus, the Church rejects the prospect of human cloning on the basis of the teaching on the sacral dignity of procreative activity between spouses and on the respect due the human life from the union of gametes (fertilization/conception) until death.

On Limits and Alternatives

Many already know that our species is quite marvelous, in fact human beings are technological wizards. I caution, however, that wizards are often portrayed as self-destructive. Nevertheless, wizardry that is right reasoning looks for and pursues activities that will contribute to human flourishing while avoiding those that jeopardize. Thus, in asking whether or not the prospect of human clones contributes to or jeopardizes the dignity of persons or the future of our communities, insight will be gained into the extent to which this technology should be applied. If I am correct that cloning human genetic material for the purposes of producing another individual is equal in intent to the buying and selling of persons, then that technology will eventually consume us and should not be so engaged. We will, in the bodies of our future clones, become products and persons no more. The future so envisioned would include a shopping market of clones as well as a stock option in the commodities trading market of the London, the New York, and the Tokyo Exchanges.

I do not mean to suggest that cloning research in the human sphere should be stopped. However, boundaries must be established and alternative means considered which will address the medical

concerns that cloning research dares and presumes to remedy for the human species. Thus, set the limits of technological application 1) at the somatic (body cells) level of manipulation for experimental correction of pathologies, 2) at the germ-line (gamete cells) level to thwart a pathology's replication, and 3) at a research reserve level of cloned therapeutic cells, *not embryos*, for future intervention. But we should never allow the cloning of individuals - we ought not dispose ourselves to this kind of manufacture. Even Ian Wilmut, the Scottish scientist responsible for "Dolly", rejects the very thought of applying this technology to cloning people.

Some of the alternative responses to consider against the manipulative purposes proposed for the technology would allay fears over the sensational headlines and welcome an ethics respectful of persons today and tomorrow. For example, some suggest that human clones would solve problems of both organ availability and compatibility. We could more easily increase the pool of organ donors through capital ad campaigns or other such devices and incentive programs to broaden the availability and subsequent likelihood of compatibility. Others suggest that human clones would guarantee a genetic continuity of descendants or a genetically engineered and superior next generation. We could decrease insistence on genetically related offspring by increasing the popularity and ease of adoption to satisfy the call to be parent; any other reason for wanting a child is morally suspect. We should deny any actively biotechnical interventionist eugenics program for its inherent discriminatory prejudice which assumed the truth-validity of a socially dependent construct of superiority. Finally, still others suggest that a bevy of identical cloned embryos would facilitate research reliability and increase experimentally therapeutic success. We could continue research in genetic manipulation and cellular intervention for the therapeutic relief of disformed genes with a reserve of cells yielding similar experimental results yet without the indignity inherent in the embryo category of research. The technological genie of cloning is out of the bottle; the genie must be minded with prudence.

If we are genuinely interested in our future we must be intentional now about fashioning the stages leading to the future and that future itself in a way that attends to both the people we are and the people we want to become. To go about our business as if tomorrow

will take care of itself, neither attending to the stages that lead to tomorrow or the kinds of people we might become, is foolhardy at best, dangerous at worst. If we do not want to envision a future with human clones we must ensure ourselves today that the technologically possible (even if as yet years from available) is not engaged. Tomorrow, the future, is today's business; ask any parent or financial planner for that matter about their children or their retirement fund. The future we fail to envision in the guise of a clone today will otherwise oppress us.

References

1. See, for example, from ethicists, Kurt Bayertz, *GenEthics: Technological Intervention in Human Reproduction as a Philosophical Problem* (Cambridge University Press, 1994); Arthur Caplan, *Moral Matters* (NY: John Wiley & Sons, 1995); and most extensively, Andrew Kimbrell, *The Human Body Shop* (London: Harper Collins Religious, 1993). From the magisterium see Instruction of Respect for Human Life in its Origin and on the Dignity of Procreation", 1987 SCDF; *Donum Vitae*, 1987; *Catechism of the Catholic Church*, 1994.
2. For more detailed information on this process, see Bruce Alberts, *Nature*, "Molecular Biology of the Cell" (Roslin Institute, 1994).
3. News of seven month old Dolly was first published in the popular press February 24, 1997, putting her birth sometime during the month of August, 1996.
4. These developments are traced in Kimbrell's book, *The Human Body Shop*.
5. Most simply, the categorical imperative of Kantian deontology engages subjects to treat all others with mutually regarding respect as a "golden rule"; thus, never treat others as means only, but always as ends in themselves. Perhaps more poignantly, however, is an inherent offense to the justice due the other *as an other*. That is, not because if I do some good (or harm) to you, you may in turn do a like thing to me but, because you are deserving this as a person.
6. See SCDF, 1.3.