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Human Cloning and *Donum Vitae*

by

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There exists an adage which states that *growth in technology often outpaces growth in ethics*. Perhaps nowhere is this better demonstrated than in the Vatican statement released on February 20, 1997: "The moment of fertilization marks the constitution of 'a new organism equipped with an intrinsic capacity to develop itself autonomously into an individual adult.'"¹ Four days later the world was stunned with the report that true cloning had been successfully carried out for the first time in a mammal.² Suddenly the Vatican, together with theologians and ethicists throughout the world, was faced with the possibility of having to discuss the beginnings of human life where the rubric of "fertilization" is no longer applicable.

Researchers from Scotland reported that they had successfully cloned a sheep from an adult sheep somatic cell. The resulting cloned sheep, named Dolly, was now fully grown and genetically identical to the adult sheep from which the donor cell had been harvested.³

The degree of initial public response, as reflected in the media, was astonishing. This may have been due in part to the unexpected nature of the announcement. Indeed, several recent articles⁴ had proposed that true "body-cell cloning" was not possible.

In spite of the fact that the world may have been caught so "off-guard" to its announcement, cloning has been the subject of scholarly

writing and discussion for some time. In a remarkable example of prescience, the Nobel Laureate Joshua Lederberg wrote an essay on cloning in 1966 that described exactly the same technique recently reported from Scotland.⁵ From the perspective of this paper the great value of Lederberg's article was that it prompted commentary and debate from among the theological community.

Two Protestant theologians, Paul Ramsey and Joseph Fletcher, were particularly vocal in their response to the idea of "fabricated man."⁶ Both Fletcher and Ramsey commented primarily on the issues of human agency and freedom, the relationship of man to nature, and the proper role of parenthood. In the end, however, they disagreed on whether cloning was morally permissible based primarily on the issue of embodiment and personhood. Fletcher argued that the person is something different from the body. In his view, the body did not count for much – it was an object to be mastered and manipulated for the sake of personal choices.⁷ His approach was also utilitarian, arguing that cloning was moral if it represented the "greatest good for the greatest number" or "maximized happiness."⁸ In fact, Fletcher was so supportive of cloning that he favored the "biodesigning of parahumans or modified men – as chimeras (part animal) or cyborg-androids (part prosthesis)."⁹ Needless to say, such views, particularly from a theologian, injected a degree of science fiction hysteria into the cloning debate that persists until the present day.¹⁰

Ramsey, on the other hand, rejected the notion of a body-person dualism. He held to the hylomorphic theory of Aquinas and insisted that the person is "an *embodied soul* or an *ensouled body*." In regarding the sexual person "as the body of his soul as well as the soul of his body," he refused to reduce procreation to a technical accomplishment. He further rejected technologies that both expressed a dualistic account of our relation with our bodies, and that diminished or distorted what it means to be a parent. Ramsey worried that technological reproduction – and especially cloning – would tempt us to view a child as a human achievement rather than as a gift of God.¹¹ Ultimately, for these reasons among others, he rejected cloning as morally impermissible.

In 1971, Leon R. Kass – again, well ahead of his time – describes the same cloning technique and goes on to present a detailed ethical analysis on cloning.¹² In drawing from the writings of Ramsey, he expresses his concerns primarily in the areas of personal identity and individuality. The cloned person may experience serious concerns about his identity (distinctiveness) because he is an identical duplicate of another human being. Kass argues that each person has a right not to be deliberately denied a unique genotype. He sees this as being central to the idea of the dignity and worth of each human being – an idea rooted in the

Judeo-Christian tradition of each person's relationship to the Creator.¹³ He goes on further to discuss cloning from the perspective of artificial reproductive techniques and in vitro fertilization – a technology in its infancy at the time. In this regard, his concepts range from the experimentation and discarding of embryos to the potential assault on the sanctity of marriage – an institution in which the pleasure of sex, the communication of love, and the desire for children find their ultimate fulfillment.¹⁴ Like Ramsey, he ultimately expresses grave concerns regarding the moral permissibility of cloning.

Richard A. McCormick is the contemporary theologian who has perhaps expressed the most thought on cloning. His concerns revolve around three central issues: life, wholeness, and individuality. The issue of life concerns him primarily in terms of the personhood of the pre-embryo. Is the pre-embryo a person? And, how much respect or protection needs to be afforded these entities at the beginning of human life. By wholeness McCormick refers to societal policies towards what is and is not acceptable or desirable now that genetic manipulation allows us to breed superior genotypes. His concerns regarding individuality center on whether a clone might lack the uniqueness or individuality that we deem essential to human worth and dignity. Further, how might this affect our wonder at human diversity and individuality?¹⁵

The thoughts expressed by these theologians, in one way or another, all reflect concerns about how cloning will affect our views of individuality and personhood.

In addition, cloning is essentially an artificial reproductive technique. With the promulgation of *Donum Vitae* in 1987, the magisterium explicitly set forth what was and what was not "licit" within the Church with regard to reproduction. Any reflection within the Catholic tradition on a new reproductive technology must be carried out in light of that document.

Biological Considerations

Cloning is qualitatively different from sexual reproduction as it occurs naturally, and – in the strictest sense – as it occurs artificially, in that the offspring's genome is identical with, and derived from, only one donor parent.

There are several types of biological cloning that have been described in recent articles.¹⁶ However, to some degree, it is a question of semantics as to what constitutes true cloning.¹⁷ Scientists and society have

never regarded twins as "clones." Consequently, the use of the word to describe procedures that give rise to identical twins is controversial.¹⁸

The process of true cloning, which has now been successfully achieved in mammals, involves a technique known as *nuclear transfer*.

There are two different cell types involved in nuclear transfer: an egg and a donor cell. In the experiments carried out at the Roslin Institute the donor cells were obtained from two sources: sheep embryos and adult sheep mammary tissue. In both cases the individual cells were harvested and then cultured and grown in vitro. Using micromanipulation techniques, an unfertilized egg is prepared by removing its nucleus. The nucleus is then removed from a donor cell and fused into the egg using an electrical current. The egg now contains a nucleus with the intact genome of the donor animal. The electrical current apparently also triggers the egg to begin development. The resulting pre-embryo is then transferred to the uterus of a recipient sheep and, from this point on, grows and develops as any other normal pregnancy. At birth, the newborn sheep is genetically identical to the donor animal.¹⁹ The key difference in this type of reproduction is, of course, that the entire genetic identity comes from one parent as opposed to sexual reproduction in which it comes from both parents.

In the case reported in February, 1997, from the Roslin Institute, the cloned sheep was the result of using somatic cells, specifically mammary tissue cells, from an adult sheep.²⁰ This represents the first time that any mammal has been derived from adult cells. Although the nuclear transfer process is technically simple, it is as yet far from perfect in that it took 277 eggs with transplanted nuclei to produce one live lamb. Prior to the one successful result, several lambs were produced with varying degrees of deformities.²¹

To date, there have been no known reports of attempts to clone a human being using this technique of *somatic cell nuclear transfer*. Several western European countries, including the United Kingdom, have existing laws that ban attempts to clone human beings. Further, in the United States, the National Bioethics Advisory Commission has recommended that attempts to produce human beings by cloning be banned for a period of five years.²² Under the commission's proposal, scientists would be barred from implanting a cloned embryo into a woman's uterus. Such a ban, however, would not prevent privately-funded scientists from cloning human embryos solely for research and not implanted. Current federal rules prohibit federally-funded scientists from conducting any experiments using embryos.²³

Human Cloning and *Donum Vitae*

On July 25, 1978, a child by the name of Louise Brown was born in Oldham, England. She was the product of the first successful pregnancy brought to full term that was the result of in vitro fertilization. Thus began the modern era of artificial reproductive technologies.²⁴

Artificial reproduction (AR) refers to a number of different technologies used to assist or, in some cases, to replace "normal" procreation. For the purposes of this paper, normal procreation would be defined as the conception of a child by normal sexual intercourse between the married parents of the child.

The simplest form of AR is *artificial insemination* (AI). There are two types of artificial insemination: *homologous* when the husband's semen is used, and *heterologous* when a donor's semen is used. These are referred to as AIH and AID respectively. Next up the scale of complexity is *in vitro fertilization* (IVF). In this technique the egg and sperm are harvested from the parents using various techniques. Fertilization then takes place by combining the egg and sperm in a laboratory dish. Once fertilization has occurred, the pre-embryo is allowed to develop to the blastocyst stage. At this point, by a technique known as *embryo transfer* (ET), the pre-embryo is introduced into the uterus where implantation and subsequent development takes place. IVF can be performed using the egg and sperm of a married couple in which case it would be homologous or it can be performed using either the egg or sperm from a donor, in which case it would be heterologous.

There are also variations among these techniques. For example, IVF, whether homologous or heterologous, can be used to produce a pre-embryo which is subsequently transferred to the uterus of a *surrogate* mother. There is also a technique known as *gamete intrafallopian transfer* (GIFT), in which both the egg and sperm are transferred to a site within the fallopian tube in close proximity to each other allowing fertilization to occur within the body. Another methodology is *low tubal ovum transfer* (LTOT), in which the egg is harvested and transferred below the site of an obstruction in the fallopian tube thus allowing fertilization to occur during normal sexual relations.²⁵

To better develop this topic it is necessary to briefly review the Catholic tradition dealing with reproduction and conjugal sexuality.

It was the thought of St. Augustine that has perhaps most influenced the Church's teaching on sexuality and marriage. Augustine's vision of sexuality was undoubtedly influenced by his experiences with Manicheism.²⁶ The body, in the dualistic view of the Manicheans, was the work of the devil. It followed that the propagation of the body was evil.

Marriage, as the institutional means of procreation, was also seen as evil. Of interest is that sexual activity, so long as conception was avoided, was of little importance since it affected the body alone and not the spirit. To the Manichean argument that marriage was bad because procreation was bad, Augustine countered that it was precisely the goodness of procreation which made marriage good. In his work *De bono coniugali*, Augustine more fully developed his thesis regarding the dominant concept that marriage was meant for procreation. In fairness to Augustine, he did explicitly set forth that there are other ends to marriage besides procreation which also make it good. He insisted on the value of love between husband and wife, and how the *ordo caritatis* unites them when age or misfortune deprives them of children. He presented fidelity as an exchange of mutual respect and service, and insisted that "the bodies of the married too are holy, when they keep faith to one another and to God."²⁷ In spite of his being conscious of the value of these unitive aspects of marriage, Cormac Burke asserts that the doctrine of the inseparable link of the unitive and procreative aspects of marriage developed later as a result of a canonical understanding of marriage.²⁸ For Augustine it remained, "that married sexual intercourse is justified only if it is intended to be procreative, and has an element of imperfection or venial fault, if carried out solely for pleasure."²⁹ Aside from the influence of Augustine, many theologians today feel that the Church's teaching regarding the prohibition against artificial reproductive techniques stems from the influence of Francis X. Hurth (1880-1963), a Jesuit and a leading moral theologian at the Gregorian University in Rome.³⁰ Hurth argued that the moral law and the biological law coincide on these matters (conjugal sexuality): "This end for man thus is both the biological law and the moral law, such that the latter obliges him to live according to the biological law."³¹ This "biologization" of what is essentially natural law theory is a theme that characterizes virtually all contemporary Church teachings in the area of sexuality and reproduction.

Hurth's thesis was later adopted by Pius XII who, it could be said, was the impetus behind the contemporary magisterium's position. In 1949, in an address to Catholic physicians, Pius XII stated:

Artificial insemination outside of marriage is to be condemned purely and simply as immoral.

Artificial insemination in marriage, but effected by means of the active element (semen) of a third party is ... immoral and, as such, is to be summarily rejected.

As for the morality of artificial insemination within marriage, let it suffice for the present to recall these principles of the natural

law: the simple fact that the desired result is attained by this means does not justify the use of the means itself; nor is the desire to have a child - perfectly lawful as that is for married persons - sufficient to prove the licitness of artificial insemination to attain the end.³²

In 1951, in an address to the Italian Catholic Union of Midwives, Pius XII was more explicit in condemning artificial insemination within marriage:

Hence, ... we formally excluded artificial insemination from marriage.

This is much more than the mere union of two life-germs, which can be brought about also artificially, that is, without the natural action of the spouses. The conjugal act, as it is planned and willed by nature, implies a personal cooperation, the right to which the parties have mutually conferred to each other in contracting marriage.³³

This natural law theory approach was perhaps most explicitly stated by Paul VI in his encyclical *Humanae Vitae* (1968). Paul VI asserts that "natural law shows the inseparable connection, willed by God and unable to be broken by human beings on their own initiative, between the unitive and the procreative meaning of the sexual act."³⁴ This position, still firmly held by the magisterium, is the fundamental concept in understanding current Church teaching on artificial reproductive technologies. If one accepts the thesis that the unitive-procreative functions of marital sex are inseparable, it then follows that artificial reproduction, since it removes procreation from the sexual act, would be illicit in the eyes of the Church. There are other philosophical and social arguments used against artificial reproduction and these will be developed later in this paper.

In 1987 the Congregation for the Doctrine of the Faith (CDF) released its *Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation (Donum Vitae)*. It represents the most comprehensive statement of the Church on artificial reproductive technologies. As such, cloning, which is essentially a reproductive technology, must be evaluated in light of its position. Any valid theological reflection on the subject, within the Catholic tradition, must be done in relation to that document.

In promulgating *Donum Vitae*, the CDF establishes from the onset that the natural law will be the moral criteria on which its teaching is based. It quotes from *Humanae Vitae*:

The natural moral law expresses and lays down the purposes, rights and duties which are based upon the bodily and spiritual nature of the human person. Therefore this law cannot be thought of as simply a set of norms on the biological level; rather it must be defined as the rational order whereby man is called by the Creator to direct and regulate his life and actions and in particular to make use of his own body.³⁵

The fundamental position of *Donum Vitae* in regard to procreation is that every pregnancy must occur within heterosexual marriage and be the result of the conjugal act between the husband and wife.³⁶ Thus, the critical difference between natural and artificial reproduction is that in the latter the procreative event is severed from its natural relationship to the sexual union within a marriage. Artificial reproduction establishes "the dominion of technology over the origin and destiny of the human person."³⁷ As such it gives the "life and identity of the embryo into the power of doctors and biologists..."³⁸ Consequently the dignity of parents and child is lost. The Instruction is quite clear in its judgment on the artificial reproductive technologies. The judgment is a rather clear and unambiguous "No." This analysis relies heavily on the traditional natural law view of the nature of intercourse having an inseparable procreative and unitive dimension. There can, therefore, be absolutely no separation of any aspect of reproduction. Consequently, the Instruction prohibits artificial insemination and in vitro fertilization, whether homologous or heterologous. Further, it also prohibits embryo transfer, surrogate motherhood, cryopreservation of embryos, and most research on embryos and fetuses.³⁹ With regard to cloning, the Instruction states:

*...attempts or hypotheses for obtaining a human being without any connection with sexuality through "twin fission," cloning or parthenogenesis are to be considered contrary to natural law, since they are in opposition to the dignity both of human procreation and of the sexual union"*⁴⁰ (italics in original).

It is clear that cloning, like all other artificial reproductive techniques that replace the conjugal act, is considered illicit by the Church. However, not all the teachings of *Donum Vitae* have been accepted by the theological community without reservation. Many theologians view some types of artificial reproduction not as substitutes for sexual intimacy, but as a prolongation of it, and therefore as not involving the total severance of the unitive and the procreative. McCormick agrees with this view and regards it as "a solidly probable opinion."⁴¹ He asks, in regard to the meaning of the inseparability of the unitive and procreative, whether these

must be held together in every *act*, or is it sufficient that the *spheres* be held together, so that there is no procreation apart from marriage, and no full sexual intimacy apart from a context of responsibility for procreation? As long as there is disagreement on these understandings, artificial reproduction will be as controversial as Pope Paul VI's encyclical *Humanae Vitae*.⁴²

Whatever the method used in artificial reproduction, it is whether a homologous or heterologous technique is used that seems to be the critical factor among most ethicists and theologians regarding the acceptability of the procedure.

In dealing with heterologous artificial reproductive techniques, the Church rejects them because, among other reasons discussed, reproduction occurs outside marriage:

Respect for the unity of marriage and for conjugal fidelity demands that the child be conceived in marriage; the bond existing between husband and wife accords the spouses, in an objective and inalienable manner, the exclusive right to become father and mother solely through in each. Recourse to the gametes of a third person in order to have sperm or ovum available constitutes a violation of the reciprocal commitment of the spouses and a grave lack in regard to that essential property of marriage which is its unity.⁴³

Heterologous artificial fertilization violates the rights of the child; it deprives him of his filial relationship with his parental origins and can hinder the maturing of his personal identity.⁴⁴

Most theologians, whether Roman Catholic or not, have also rejected heterologous artificial reproductive techniques.⁴⁵ Rahner argues that donor techniques "fundamentally separate the marital union from the procreation of a new person."⁴⁶ He further faults the anonymity of the donor, which represents a refusal of responsibility as a parent and an infringement on the rights of the child. In short, there is little if any disagreement between the Church and most theologians on the unacceptability of donor artificial reproductive techniques. There is, however, less agreement on the subject of homologous techniques.

Many Catholic theologians have defended homologous techniques of artificial reproduction.⁴⁷ This view also finds widespread support both within the larger Christian community and in Judaism.⁴⁸ As director of the Center for Bioethics at the Kennedy Institute of Ethics, LeRoy Walters surveyed 15 major bioethics committees throughout the world. These committees unanimously agreed to the ethical permissibility of these techniques. These committees were not simply pro-technology: 70% of

them rejected surrogate motherhood and as a whole they were just as protective of the human embryo older than 14 days as is the CDF.⁴⁹ Leaders of other Christian and Jewish communities have regularly reached conclusions roughly similar to those of these major committees.⁵⁰ McCormick argues that since Vatican II has taught that the truth also resides in other Christian communities, "the Catholic Church, on its own terms, is irresponsible if it does not listen to and weigh seriously the experience and witness of other Christian bodies on moral questions."⁵¹ In turn, according to Vatican II, these "Christians are joined with the rest of men and women in the search for truth."⁵²

In contrast to the position of *Donum Vitae* that artificial reproduction is illicit because technology substitutes for sexual intercourse, there seems to be little basis in the literature or in experience for saying that love-making in either the sexual or nonsexual sense is displaced by technology in the recourse to homologous forms of reproduction. In fact, the record may be the opposite. Love-making in a marriage often suffers when there is infertility.⁵³ McCormick summarizes the Instruction on this point: "In brief, when a child is 'conceived as the product of an intervention of medical or biological techniques,' he cannot be 'the fruit of his parent's love.'" He then comments: "This is a *non sequitur*, and both prospective parents and medical technologists would recognize it as such. Sexual intercourse is not the only loving act in marriage."⁵⁴ Interpersonal bodily intimacy is one kind. The creative hope for a child is another kind. Cooperation in important activities, such as would be required to go through homologous artificial reproduction, is still yet another. There are a myriad other elements of love within a marriage. Artificial reproduction does not "replace" any of these loves, nor need it replace sexual acts open to procreation.⁵⁵

Sidney Callahan and Lisa Sowle Cahill, both married women, insist that the proper starting point must be that whole which is the partnership of the married people – the starting point is not one genital act. For Callahan, "No 'act analysis' of one procreative period of time in a marriage can do justice to the fact that the reproductive couple exists as a unity within a family extended in time and kinship."⁵⁶

Many authors call for a greater use of experience in reflecting on these issues. The complexities of a marriage, as well as the outcomes of medical intervention, must be considered and not just an analysis of certain parts of an act.⁵⁷

The instruction of *Donum Vitae* is thus considered by many theologians to be a form of biologism. That is, the biological structure of human procreation is so sacrosanct that it cannot be circumvented even when it is nonfunctional and leads to significant loss for the persons and

the marriage.⁵⁸ McCormick argues instead for an integral personalism that “goes beyond such biological givenness.”⁵⁹ He points to the criteria, proposed by Vatican II, to be used in judging the rightfulness or wrongfulness of human conduct: not “the intention of nature inscribed in the organs and their function,” but “the person integrally and adequately considered.”⁶⁰

Within this framework, under what, if any, circumstances could cloning be considered a reproductive technique or aid in marriage?

Some might argue that cloning is not reproduction per se, but rather a form of self-replication. Shannon argues against this when he states that what is replicated in cloning is the genetic structure, not the individual.⁶¹ A cloned person would no more be the same individual as his or her parent than would an identical twin with his or her sibling.

As a reproductive technique, cloning would qualify as a homologous form in the strictest sense. No biological material is required from either a spouse or a third party.

Consider a situation, if and when cloning is established as an efficient and effective method of reproduction, where a married couple is unable to conceive because the husband has nonfunctional sperm or lacks them altogether. Likewise, consider a married couple in which one of the partners carries a dominant genetic trait that makes the likelihood very high of conceiving a child with a serious genetically transmitted disease. At the present time, the “solution” to such problems would be to consider a donor (heterologous) method of artificial reproduction. Such an action would find no support within official Catholic teaching and little if any support from most Catholic theologians. A traditional homologous technique would not be available – either the husband lacks healthy sperm or they are afraid to reproduce sexually for fear of conceiving a child with a serious illness. In such a situation, one of the parents could donate a somatic cell to allow nuclear transfer cloning to be performed. The child born of such a process would be genetically identical to the “donor” parent and the technique would be “homologous” in that no third party material was utilized. The child would be the genetic product of only one parent, but would also be the product of the married couple’s “creative hope for a child” and “cooperation” in the activity of the artificial reproductive process.⁶² Such an act of reproduction, unlike heterologous techniques, occurs fully within the marriage.

Would such a method of reproduction be considered acceptable? The Church’s position, based on the unanimity of magisterial statements on the subject of artificial reproduction, would certainly be a resounding “No.” Would such a method be acceptable from within the theological community? The answer here is more difficult to gauge. It is suggested

that the answer hinges on the acceptability of the cloning process itself. If the cloning (of humans) is acknowledged as an ethically and morally acceptable procedure, then it is likely that supporters of homologous artificial reproductive techniques would approve of cloning *within* marriage under a few selected circumstances – the rationale being that, in such situations, successful reproduction would benefit the “goods” of marriage. Conversely, if cloning is considered morally or ethically unacceptable, then obviously it would be considered illicit in the examples described.

Within the context of this paper, the acceptability of cloning, in and of itself, has not been considered. Rather, the purpose has been to reflect on the reproductive aspects of cloning – ideas which challenge widely-held theological concepts. However, for completeness’ sake, it must be mentioned that most Christian theologians and authors, who have written on the subject, either oppose or have very serious reservations about the acceptability of cloning itself.⁶³ As such, the acceptability of cloning as a reproductive technique may be a moot point. However, there still remains an intellectual validity to reflecting on how the cloning of humans will challenge our views on reproduction.

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52. *Gaudium et spes* no. 16.
53. Vacek 115.
54. Richard A. McCormick, "The Vatican Document on Bioethics: Two Responses," *America* 156 (1987): 248.
55. Marjorie Reiley Maguire, "The Vatican Has Gone Too Far," *Conscience* 8, no. 3 (1987): 14-5.
56. Sidney Callahan, "Lovemaking and Babymaking," *Commonweal* 114 (1987):234.
57. Vacek 119.
58. A short commentary on "biologism": can be found in John P. Doyle, "Reflections on Persons in Petri Dishes," *Linacre Quarterly* 64, no. 4 (1997): 72-3.
59. McCormick, "Vatican Document: Suggestions," 26.
60. As quoted in McCormick, "Therapy," 400.
61. Shannon, "Cloning," 304.
62. See notes 54 and 55.
63. John R. Meyer, "Cloning Human Embryos: Why Artificial Human Procreation is Immoral," *Linacre Quarterly* 62, no. 2 (1995) 22-9; Lisa Sowle Cahill, testimony, and Gilbert Meilaender, testimony, National Bioethics Advisory Committee, Watergate Hotel, Washington DC, 13 Mar. 1997; Edmund Pellegrino, Address to the Physicians' Guild of the Diocese of Venice in Florida, Venice, Florida, 8 Nov. 1997; see also McCormick, "Blastomere,," Verhey, "Cloning."