

GENERAL LECTURES:

1. Sefton D. Temkin, *Then and Now: Notes on Jewish History in the Twentieth Century*, February 22, 1977.

THE RABBI LOUIS FEINBERG MEMORIAL LECTURE IN JUDAIC STUDIES:

1. Louis Jacobs, *The Doctrine of the Zaddik in the Thought of Elimelech of Lizensk*, February 9, 1978.
2. Marvin Fox, *The Philosophical Foundations of Jewish Ethics: Some Initial Reflections*, March 27, 1979.
3. Yosef Hayim Yerushalmi, *The Re-education of Marranos in the Seventeenth Century*, March 26, 1980.
4. Jacob Milgrom, *The Tassel and the Tallith*, April 7, 1981.
5. Lloyd P. Gartner, *The Midpassage of American Jewry, 1929-1945*, May 13, 1982.
6. Henry A. Fischel, *The Enigma of the Passover Seder*, March 9, 1983.
7. Joseph Dan, *Three Types of Ancient Jewish Mysticism*, April 26, 1984.
8. Charles S. Liebman, *The Religious Component in Israeli Ultra-Nationalism*, April 16, 1985.
9. Arthur A. Goren, *National Leadership in American Jewish Life: The Formative Years*, April 8, 1986.
10. Norman Golb, *Jewish Proselytism — A Phenomenon in the Religious History of Early Medieval Europe*, March 3, 1987.
11. Robert Alter, *Language as Theme in the Book of Judges*, February 22, 1988.
12. Ruth W. Wisse, *What Shall Live and What Shall Die: The Makings of a Yiddish Anthology*, May 3, 1989.
13. Nahum M. Sarna, *Writing a Commentary on the Torah*, March 6, 1990.
14. Aaron Kirschenbaum, *Torture, Confession, and American Plea Bargaining: A Jewish Legal Perspective*, February 13, 1991.
15. Meir Michaelis, *Axis Policies Towards the Jews in World War II*, April 30, 1992.
16. Nicholas de Lange, *Reflections of a Translator*, March 19, 1993.
17. Shimon Glick, *Trends in Medical Ethics in a Pluralistic Society: A Jewish Perspective*, April 25, 1994.
18. Edward Alexander, Irving Howe and Secular Jewishness: An Elegy, 1995.
19. Ada Rapoport-Albert, *The 'Dead Hasidim': The Rehabilitation of a Hasidic Circle following the Death of its Messianic Leader*, March 21, 1996.
20. Rabbi Bernard S. Raskas, *Toward a Jewish Work Ethic: Envisioning Work for the 21st Century*, March 11, 1997.
21. Michael G. Chelnov, *Oriental Jewish Groups in the Former Soviet Union: Modern Trends of Development*, March 10, 1998.
22. Michael J. Broyde, *Assisted Reproduction and Jewish Law*, March 16, 1999.

OCCASIONAL PAPERS:

1. Benny Kraut, *The Role of the Jewish Academic in Jewish Affairs: A Conference Held at the University of Cincinnati, October 30-31, 1978*.
2. Benny Kraut and Abie I. Ingber, eds., *Assessing the Significance of the Holocaust*. Papers Delivered at the University of Cincinnati on Yom Ha-Shoah, May 6, 1986.
3. Benny Kraut, ed., *American Judaism: Present and Future* (The Jacob and Jennie L. Lichter Lecture Series of 1987, featuring papers by Rabbis Saul J. Berman, W. Gunther Plaut, and Mordecai Waxman, plus a symposium on the future of Cincinnati Jews and Judaism).
4. Kent Greenawalt, *Religious Liberty, Non-Establishment and Political Discourse* (A Jacob and Jennie L. Lichter Lecture), November 15, 1994.
5. The Ecumenical Chair in Theology Lecture, Xavier University: Stanislaw Musial S.J., *The Holocaust, Christianity, Poland: Some Reflections of a Polish Christian Fifty Years Later*, and Benny Kraut, *The Holocaust, Christianity, Poland: A Response*, November 9, 1995.
6. Sylvia Barack Fishman, *Negotiating Both Sides of the Hyphen: Coalescence, Compartmentalization, and American-Jewish Values* (A Jacob and Jennie L. Lichter Lecture), November 14, 1995.

STUDENT JOURNAL:

1. *Cincinnati Judaica Review*, Vol. I, Spring 1990.
2. *Cincinnati Judaica Review*, Vol. II, Spring 1991, Hanna G. Yerushalmi, ed.
3. *Cincinnati Judaica Review*, Vol. III, Spring 1992, Jeffrey Mandl, ed.
4. *Cincinnati Judaica Review*, Vol. IV, Spring 1994, Rebecca Broder, ed.
5. *Cincinnati Judaica Review*, Vol V, Spring 1995, Marc A. Wolf, ed.

FOREWORD

Although "Be fruitful and multiply" is one of the first mitzvot (commandments) in the Torah, it is not necessarily an easy mitzvah to fulfill. The biblical narrative is replete with examples of difficulties in fulfilling this injunction.

In the past twenty-five or so years, couples experiencing difficulties in conceiving a child have been aided by the rapid development of new technologies. The list of treatments and procedures available includes drug therapy, intrauterine insemination, surgery, in vitro fertilization, gamete intrafallopian transfer, zygote intrafallopian transfer, micromanipulation, intracytoplasmic sperm injection, cryopreserved embryo transfer, egg donation, and surrogacy. Despite the broad range of this list, the use of any one technology or combination of technologies is costly. Moreover, the procedures intrude into the most intimate aspects of a couple's personal relationship, and do not always succeed.

Given these difficulties, it is reasonable to ask: How far does halacha, Jewish law, require or permit us to go in order to have children? Without giving definitive answers for specific personal circumstances, Michael J. Broyde outlines the issues that must be considered in answering this question. In doing so, he points out that while American secular law is concerned primarily with rights, halacha is more concerned with issues of personal status. In so doing he makes clear how different legal systems can come to very different conclusions regarding the use of reproductive technologies.

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A person without knowledge is surely
improper; he who moves hurriedly blunders;
Proverbs 19:2.

PREFACE

The relationship between modern technology, biomedical ethics, and Jewish law (halakha)¹ has been well developed over the last fifty years. As has been noted in a variety of sources and in diverse contexts,² Jewish law insists that new technologies — and particularly new reproductive technologies — are neither categorically prohibited nor categorically permissible in the eyes of Jewish law, but rather are subject to a case-by-case analysis. Indeed, every legal, religious, or ethical system has to insist that advances in technologies be evaluated against the touchstones of its moral systems. In the Jewish tradition, that touchstone is the corpus of Jewish law and ethics; as others have noted, this Jewish tradition has had a significant impact on the intellectual development of a number of areas of American law, bioethics included.³ This paper is an attempt to create a preliminary and tentative analysis of the reproductive technology from a Jewish law perspective. Like all preliminary analyses, it is not designed to advance a rule that represents itself as definitive normative Jewish law; rather, it is an attempt to outline some of the issues in the hope that others will focus on the problems and analysis found in this paper and will sharpen or correct that analysis. Such is the way that Jewish law seeks truth.

In the case of cloning — as with all advances in reproductive technology — the Jewish tradition is betwixt and between two obligations. On one side is the general Jewish obligation to help those who are in need, and particularly compounded by the specific obligation to reproduce, thus inclining one to permit advances in reproductive technologies that allows those unable to reproduce, to, in fact, reproduce. On the other side is the general inherent moral conservatism associated with the Jewish tradition's insistence that there is an objective morality, and that not everything that humanity wants or can do is proper. This specifically manifests in the areas of sexuality where the Jewish tradition recognizes a number of doctrines which restrict sexual activity.⁴ In addition, the Jewish tradition advises one to pause before one permits that which can lead down a variety of slippery slopes whose consequences one does not fully understand, and whose results we cannot predict.

It is the balance between these various needs that drives the Jewish law discussion of all assisted reproductive technology and it is in that spirit that this is intended to be a preliminary analysis of the problems of cloning. This article argues that while there are a variety of technical issues that have to be addressed related to cloning, fundamentally cloning is a form of assisted reproduction - no different from artificial insemination or surrogate motherhood - which, when technologically feasible, should be made available to those individuals in need of assisted reproduction.⁵

I. Introduction

Before exploring the details of Jewish law on cloning, a brief survey of the responses found in American legal systems to advanced reproductive techniques generally, and cloning specifically, is worth reviewing. Such an introduction might help explain why Jewish law needs to ask certain questions that modern American law never really ponders.

As a general proposition, the guiding principles found in American law governing assisted reproduction are predicated on the desire to assign "parenthood" — both maternal and paternal identity — to the individuals who are expected to function *in loco parentis* of the child when it is born.⁶ Thus, contractual regulation of the terms of surrogacy is permitted so as to insure that the one who "wants" the child is the parent,⁷ sperm donors can "waive" their paternal rights,⁸ and adoption can end the parental rights of natural parents.⁹ Generally speaking, unlike the common law tradition (and Jewish law), modern American law views status issues (such as parenthood) as something that law *determines*, rather than something that law *discovers*.¹⁰ Law can change the natural order of relationships in this view.¹¹

Cloning will undoubtedly be yet another such area. While there is a popular sentiment and considerable scholarship to categorically prohibit such activity,¹² one suspects that, in reality, there is no likelihood that human cloning will be banned in all fifty states. Statutes will be passed that regulate cloning, and regulate the "market" to insure that the wishes of the parties — as to status, paternity, and a host of other issues — are met. Indeed, one can already see such a consensus developing. Professor Laurence Tribe, a well-known constitutional law scholar, recently endorsed the free market approach to cloning.^{12a} A recent New York Times article accurately captures the spirit of modern medical ethics in America in the reproductive area by noting:

In the hubbub that ensued (after Dolly was cloned), scientist after scientist and ethicist after ethicist declared that Dolly should not conjure up fears of a Brave New World. There would be no interest in using the technology to clone people, they said. They are already being proved wrong. There has been an enormous change in attitudes in just a few months; scientists have become sanguine about

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the notion of cloning and, in particular, cloning a human being. "The fact is that, in America, cloning may be bad but telling people how they should reproduce is worse...."^{12b}

In America, freedom to choose one's own reproductive method, and market forces that make such choices profitable, will determine who the parent is, and what the law should permit. "America is not ruled by ethics. It is ruled by law."^{12c}

Such is, simply put, not the methodology of Jewish law. Jewish law posits that status determinations are fundamentally immutable and determined at birth. To the extent that they are in need of court adjudication, adjudication discovers — rather than determines — status. Thus, one who donates sperm is the father — whether he wishes to be or not — as that is how fathers are defined.¹³ Children cannot be adopted; they can merely be raised by someone other than their parents — and these pious wonderful people who are raising a child in need of a home are doing a wonderful act of kindness, but are never considered the child's parents.¹⁴ Even in an area like surrogate motherhood, where there is a significant dispute as to who is the mother, all agree that the status of the mother is immutable.¹⁵

Thus, when discussing cloning, Jewish law needs to address a host of questions that modern American law does not really feel relevant, as, in modern American law, no matter who "really" is the parent, a court can change that determination anyway. Indeed, an analysis of the implications of cloning found in Jewish law really contains within it three distinctly different problems in need of resolution. The first problem is whether the cloning process is permissible, prohibited, or a good deed. However, the determination of whether any particular conduct is good, bad or neutral is not dispositive in addressing the second problem: the familial status of an individual (re)produced through cloning in relationship to other humans generally, and to other members of this person's "family" specifically.¹⁶ Finally, even when conduct is permissible or perhaps even a good deed (*mitzvah*), Jewish law recognizes that the (rabbinical) authorities of every generation have the authority to temporarily prohibit that which is permissible based on the perception that this intrinsically permissible activity could lead to other more serious violations.¹⁷ Perhaps cloning is such a case.

Section II of this paper reviews the current state of technology and science as it relates to cloning. Section III addresses the question of who is the family of the clone according to Jewish law, and Section IV then proceeds to address whether cloning is permissible, prohibited or a good deed.¹⁸ Section V addresses the questions of cloning and public policy from a Jewish law perspective.

II. Cloning: The Scientific Background

Cloning, until now the subject of the fictional analysis of the type found in the book *The Boys From Brazil*, has become a medical reality with the recent cloning of a sheep.¹⁹ Indeed, there is no doubt that in a very short number of years it will be medically possible to clone human beings, and there is already extensive discussion about whether such conduct should be permissible.²⁰

In order to discuss cloning, one must understand exactly what is cloning. Every human being currently in the world is the product of a genetic mixture of that person's mother and father. One's father provides half of one's nucleic genetic material and one's mother contributes the other half; this genetic material is united in the process that we call fertilization, which normally happens after intercourse, but can also happen in a petri dish after in vitro fertilization (called IVF). A child bears a genetic similarity to his mother and father but cannot be genetically identical to either one of them as each of them has only contributed half of their genetic materials. Every person has, along with his or her nucleic DNA, mitochondrial DNA which is not located in the nucleus of the cell but in the cytoplasm. This mitochondrial DNA is inherited solely from one's mother through the egg that she provides and is identical to hers; mitochondrial DNA creates certain proteins needed to function. A father contributes no mitochondrial DNA to his children. As noted in an editorial in *Nature*, a woman suffering from a mitochondrial disease might be able to produce children free of the disease by having the nucleus of her egg implanted in a donor's oocyte, thus providing the same chromosomal genetic code, but with disease-free mitochondrial DNA.²¹

Siblings who are not identical twins share some of the genetic materials of their parents; however, since each sperm and each egg take a different set of material from the parents, each sibling has a unique genetic makeup based on a combination of portions of their parents' genes different from that found in their sibling's.²² Identical twins, however, are the product of a single fertilized egg of a unique genetic makeup which splits in half after fertilization, leaving two fully formed zygotes which develop into two fully formed — but genetically identical — siblings.²³ These two children share an absolutely identical genetic makeup and until recently represented the only case in which two people could have an identical genetic makeup.²⁴

In the current state of cloning technology, genetic material is isolated from cells taken from a donor. This genetic material is then introduced into the nucleus of an egg/ovum whose own nucleic genetic material has been destroyed, so as to produce an egg/ovum that contains a full set of genetic material identical to the nucleic genetic material of the donor. If the genetic material is taken from one person, and the egg is taken from another, the non-nucleic genetic

material of the clonee will be that of the egg donor, and not the gene donor, whereas the nucleic genetic material will be from the gene donor.²⁵ A woman could avoid this “problem”, and produce a “full clone” by using her own genetic material and one of her own ovum/eggs in the cloning process; that clonee will have the exact same DNA makeup as its clonor.

Through the stimulation of that egg/ovum, it is induced to behave like a fertilized egg and it then starts the process of cellular division that leads it to behave as if it is a newly fertilized egg with genetic materials from a mother and a father. It divides and reproduces, and when implanted into the uterus of a gestational mother, the zygote will grow and develop into a fully formed fetus which will eventually be born from the uterus of its gestational mother. It is important to recognize that in the current state of technology, all fertilized eggs — including cloned ones — are implanted in a uterus and are carried to term like all normal pregnancies.²⁶

The child that is born from this gestational mother is genetically identical to the donor(s) of the genetic material and bears no genetic relationship to the gestational mother.²⁷ It is not a combination of the genetic material of two people (the mother and father). It is instead genetically identical to the one who donated the DNA.²⁸ It is as if, on a genetic level, this person produced an identical twin, many years after the first person was born.²⁹ It is impossible to genetically distinguish cells of the clonee from cells of the clonor as their genetic makeup remains absolutely identical. Indeed, there is no reason why this process could not be done from the cells of a person who is deceased.

III. Status Issues Related to One Who is Cloned

A. Who is the Clonee's Family

The Jewish legal tradition would be very much inclined to label the gestational mother (the one who served as an incubator for this cloned individual), as the legal mother of the child, as this woman has most of the apparent indicia of motherhood³⁰ according to Jewish law. While this child bears no genetic relationship to its gestational mother, particularly when the donor is a male, there are no other possible candidates whom Jewish law *could* label the mother, and thus it seems reasonable to believe that this woman would be considered the mother of the child according to Jewish law.

One might, at first glance, question this result. However, consider the case of a woman born with no ovaries, who as an infant is given an ovary transplant. Twenty years later, this woman marries and has a child. Who is the legal mother of the child? I am convinced that Jewish law acknowledges that the woman who received the ovary transplant — who had a sexual relationship with a man, and within whose body she ovulated, conceived, implanted,

nurtured and bore this child — is the mother of the child, even though she bears absolutely no genetic relationship with the child.³¹ Thus, this child would have a maternal relationship with the woman who bore him. Elsewhere I have written:

1) If conception occurs within a woman's body, removal of the fetus after implantation (and, according to most authorities, after 40 days) does not change the identity of the mother according to Jewish law. The mother would be established at the time of removal from the womb and would be the woman in whom conception occurred.

2) Children conceived in a test tube and implanted in a host carrier are the legal children of the woman who gave birth to them since parturition and birth occurred in that woman, and conception is not legally significant since it occurred in no woman's body.

3) Children conceived in a woman who had an ovarian transplant are the legal children of the woman who bore them.³²

Rule two governs this case, it would appear, and thus the gestational mother is the legal mother according to Jewish law.

In the last five years a quite robust discussion within Jewish law has developed as to whether a child can have two or more mothers. According to Rabbi J. David Bleich, a preeminent authority on Jewish medical ethics as well as other areas of Jewish law, a number of Jewish law authorities would be inclined to rule that it is possible for a child to have two mothers according to Jewish law, and in a case of surrogate motherhood, both mothers are to be considered the mother. Bleich reports that the late Rabbi Shlomo Zalman Auerbach adhered to this view.³³ If such was the (Jewish) law, there would be little doubt that the one who contributed the genetic materials would also be considered the mother according to Jewish law were she a woman — as her contribution is clearly greater than the egg donor, who is considered a mother by this analysis. Indeed, it is quite possible to argue that both the clonor and the egg donor, who contributes the mitochondrial DNA, would be considered “mothers” according to Jewish law by this analysis, which assumes that more than one mother is possible. The logic behind naming the one who contributes the nucleic genetic material as the mother seems persuasive if one considers the egg donor to be the mother in surrogacy situations. If one maintains that a woman who contributes an egg and does not carry the child to term to be a mother according to Jewish law, certainly one who contributes all of the genetic materials — twice as much as is normally contributed by the mother — is surely considered a mother according to Jewish law, by these same authorities. The rationale for labeling the contributor of the egg/ovum as the mother, would seem to be that the contribution of either the mitochondrial DNA or the egg itself is enough of a contribution that — within a system that labels any woman who contributes as “a mother,” — this person, too, is a mother.

On the other hand, if one agrees with those authorities who label the gestational mother as “the only mother” to the exclusion of all other mothers and the ovum donor as of no legal significance according to Jewish law, one is uncertain what is the proper result in this case. The contributor of the genetic material still lacks the indicia of motherhood according to this school of thought. However, unlike the typical mother, who contributes but half the genetic material, this woman contributed all of the genetic material, and thus has a greater claim to parenthood than an egg donor in the case of surrogate motherhood.³⁴ Nonetheless, the weight of this line of reasoning argues that Jewish law focuses on parturition and birth, and labels the gestational mother as the “real” mother.³⁵ This result should govern the case of cloning also — the birth mother should be the “real” mother according to Jewish law.

If the donor of the genetic material is a man, it would appear that the above logic concerning the identity of the mother is even more persuasive in determining who is the father. Just like a man who reproduces through in vitro fertilizations contributes only half of the genetic material through his sperm, and is still considered the father according to normative Jewish law (even though there has been no sexual act and no clear procreative activity), certainly in this case where the man contributed all of the nucleic genetic material, that would appear to be enough to label this person the father according to Jewish law, and to state that this person has fulfilled the commandment to be fruitful and multiply, or its rabbinic analog.

Of course, to reach this result, one must resolve a number of disputes about the duty to procreate. There are those authorities who maintain that absent a sexual relationship, there is no paternity; certainly those authorities rule that no paternity is established in the case of cloning.³⁶ So, too, there are some authorities who rule that without a sexual relationship — even if paternity is established — there is no fulfillment of the biblical obligation to “be fruitful and multiply”³⁷ or a fulfillment of the rabbinic obligation to “inhabit the earth.”³⁸ Cloning involves no sexual relationship, and thus would not fulfill the mitzvah to procreate according to Jewish law.³⁹

However, neither of these two approaches are considered normative in Jewish law. The vast majority of Jewish law authorities rule that children produced through other than sexual means are the legal children of the inseminator, and indeed such activity is considered a positive religious activity (a mitzvah) — a good deed. As Professor Irving Breitowitz stated in a recent article on pre-embryos:

AIH [Artificial Insemination of the Husband’s sperm] is generally regarded as a halakhically permissible procedure through which paternity can be established and the [obligation] of *peru u-revu* [“be fruitful and multiply,” the biblical

obligation to have children] or at least *la-shevet* [“to be inhabited,” the rabbinic obligation to have children] can be fulfilled. By and large most [decisors of Jewish law] have assimilated IVF [*in vitro* fertilization] to AIH and have permitted its utilization Virtually all contemporary [decisors of Jewish law] have concluded, first, that the egg and sperm providers do have a parental relationship with the IVF generated offspring; second, that the procedure, if undertaken for procreation by an otherwise infertile couple, does not violate the prohibition against *hashhavat zera* [wasting sperm/seed]; third, that one may fulfill, through any resulting offspring, either the [duty] of *peru u-revu* [the biblical obligation to have children], or at the very least, the “lesser” mitzvah of *la-shevet* [the rabbinic obligation to have children].⁴⁰

The next sentence to Breitowitz’ article states, “These will be the assumptions on which this article is predicated,” and I too will predicate this paper on these assumptions.⁴¹

Thus, in summary, it is relatively clear that Jewish law would be inclined to view the gestational mother in a case of cloning as, at the very least, likely to be the mother. This is no different than a surrogate mother who bears no genetic relationship to the child, and yet is considered, at the very least, likely to be the mother, such that the child would be prohibited from marrying any of the relatives of the surrogate mother who carried the child to term.⁴²

It seems logical, in this author’s opinion, that when the genetic donor is a man, he would have the status of the father and would fulfill the duty to have children, either its biblical or rabbinic component.⁴³ If the genetic donor is a woman, perhaps one could claim that the gene donor is also the mother, in accordance with the logic of Bleich found above, or in accordance with those authorities who label the egg donor the mother according to Jewish law in cases of surrogacy.⁴⁴ There is little doubt that the genetic donor would be, at least, classified as the mother as a stricture based on doubt, prohibiting sexual relationships with her relatives or her (if the child is male). This might also be the case for the egg/ovum donor, who is the contributor of the mitochondrial DNA, whose effect on the clone has yet to be fully elaborated on by the scientific community.⁴⁵

This leads us to one of the anomalies found within the area of establishment of maternity and paternity according to Jewish law. Given the fact that for the foreseeable future there will always be a birth (surrogate) mother with no genetic relationship to the child who has a tenable claim as the “real” mother of the child, (absent the acceptance of the logic which recognizes that a person can have two mothers)⁴⁶ it will be markedly harder for a woman to be considered the mother of her cloned progeny than it would be for a man to be considered the father of his cloned progeny. The rationale for this distinction is relatively clear: since

there are no other possible candidates for paternity, the man who donates sperm — or in the case of cloning, the whole genetic material — becomes the father according to Jewish law. The egg/ovum donating woman (or the gene donating woman in the case of cloning) who donates the exact same thing as the man does in a case of surrogate motherhood — half the genetic material — has a harder time demonstrating her status as mother according to Jewish law, as there is another woman claiming that position — the gestational mother — who has a very strong claim in Jewish law.

This observation — that the man who provides half the genetic material is always the father, but the woman who provides half the genetic material is not always the mother — leads to the realization that we appear to have established a normative rule of Jewish law. When establishing the identity of the mother and father, Jewish law insists that only men can be the father and only women can be the mother. This seems consistent with the normative values found within Jewish law. While little textual proof can be found supporting this assertion — as the classical decisors never considered the possibility of any other rule — this seems logical.⁴⁷

B. The Identical Twins Issue

There are those who have informally suggested that the relationship between the clonee and the clonor is that of siblings and not of parents. While this argument seems to have a genetic basis, as the relationship between the clonee and the clonor most closely resembles the relationship between identical twins (although in most cases the mitochondrial DNA will be different) it would appear that there are significant problems with this analysis according to Jewish law. The definition of siblings found in Jewish law is either a common mother or a common father or both. As the Talmud notes in *Yevamot* 97b, one can imagine a situation in which children are siblings in which they have no legally cognizable genetic relationship, but nonetheless are considered siblings because they shared a uterus with a common mother. Consider the case in the Babylonian Talmud:

Twin brothers who were converts, or similarly emancipated slaves, may neither participate in levirate divorce nor a levirate marriage; nor are they punishable for marrying their brother's wife [as converts lose their legal relationship with their prior family]. If, however, they were not conceived in holiness [their mother was a gentile when they were conceived] but were born into holiness [had converted to Judaism before their birth] they may neither participate in levirate divorce nor a levirate marriage and are guilty of a punishable offense if they marry their brother's wife.⁴⁸

Rabbi Shlomo Yitzchaki, *Rashi*, commenting on the final words of this talmudic passage, states that the two brothers in the final case are prohibited from marrying each other's wives since they were born to the same Jewish mother and are thus related to each other as half-brothers, i.e., they have a legally recognized mother in common.⁴⁹ It is critically important to realize that Jewish law only recognizes the mother as such because she gave birth to these children; her genetic relationship with the children has been legally severed by her conversion — as is the case of any convert who, upon conversion, loses all previously established genetic relationships.⁵⁰

Given this insistent definition for the purpose of declaring one a sibling according to Jewish law⁵¹ — that individuals are required to have either a common mother or a common father (or both) to be siblings — it would be difficult to establish the relationship between the clonor and the clonee to be a sibling type of relationship, given the complete absence of a common parents.

The assertion that all individuals who are genetically identical are, in fact, legally considered siblings can be readily disproved. Consider the case of natural identical twins who clone themselves respectively, producing clones who are identical genetically not only to themselves but also to the clonor's identical sibling. Surely the two clonees are not siblings to each other, or to their clonor's identical brother — each of which they are genetically identical to. Rather, each clonee is the child of their respective clonor. Each clonee is the nephew to the clonor's identical brother and the two clonee are first cousins. The presence or absence of a "mother" in common reinforces this idea.

The argument that analogizes cloning of an adult to the splitting of a fertilized egg appears incorrect.⁵² It is true that when a fertilized egg divides into two independent embryos, both of those children (who are identical twins) are considered children of the couple that fertilized the initial egg. The second egg is not a "child" of the first. However, this type of case is different precisely because the process of fertilization and division occurs in utero, such that it is clear who is the mother of these children, and thus who is the father. To rule that the provider of the initial genetic material is not the father in a case of cloning — but that the father of the provider of the genetic material is the father — seems far removed from logic, as that person is completely uninvolved in the reproductive process. The one who fertilized the egg, either by providing half the normal chromosomes in the case of regular fertilization, or all the chromosomes in the case of cloning, should be considered the parent.⁵³

C. Absence of Paternity and Religious Identity

One other possibility worth considering is that there is no familial relationship between

the clonor and the clonee according to Jewish law. Jewish law would consider these people as categorically unrelated. There is ample precedent in Jewish law that a mere genetic relationship does not establish a legal relationship in the eyes of Jewish law.⁵⁴ Nonetheless, once there is a clear establishment of maternity on the part of the gestational mother, as there is in the case of cloning (see above), it seems logical that the provider of the genetic material has the status of the other parent, assuming that this parent is a man, thus enabling him to fit into the category of father. It is illogical to identify a man who contributes sperm to an in vitro fertilization to be the father according to Jewish law, and yet consider the one who contributes all the genetic material not to be the father. When the genetic provider is a woman, one returns to the discussion about two women competing to be the mother in the case of surrogacy.⁵⁵

The question of the mother's identity is seminal in determining the status of the child as to its religious identity. Jewish law insists that the child of a Jewish mother is Jewish, independent of the religious identity of the father, and the child of a gentile woman is a gentile independent of the religious status of its father. Indeed, in the case of intermarriage, Jewish law never recognizes valid legally significant paternity, no matter what the religion of the father is. Were one to determine that the gestational mother is the mother, Jewish law would assign the child Jewish identity and would limit paternity to those cases where the provider of the genetic material — the clonee — is also Jewish. In those circumstances, where the donor of the genetic material is a Jewish woman, and the gestational mother is a non-Jewish woman, or the other way around, the determination of religious identity would depend on who one labels the mother. J. David Bleich quotes an unpublished responsum from the late Shlomo Zalman Auerbach to the effect that in those circumstances, the Jewish status of such a child is subject to doubt, and he or she should be converted.⁵⁶

D. The Artificial Anthropoid (*Golem*) and Cloning

Unaddressed until this point is the discussion of the legends about *golems*, artificial anthropoids created by mystical means according to the Jewish tradition. These stories tell of figures made from dirt brought to life by reciting one of the names of the Divine or by placing a piece of parchment with God's name (or the word *emet* ("truth")) on the forehead. The Talmud recounts:

Rabbi created a man and sent him to Rabbi Zera, the rabbi spoke to him, but he did not answer; Rabbi Zera exclaimed "you are artificial: return to dust".... Rabbi Hanina and Rabbi Ohaya would sit every Sabbath eve and study the book of creation and create a calf one third the size of a full calf, and eat it.⁵⁷

So, too, in the last 600 years there have been a number of accounts of *golems* created

to assist the Jewish community in its various times of need.⁵⁸ As Chaim Steinmetz notes "whether or not these legends are fictional is irrelevant; what we are interested in is how man's ability to artificially create life is viewed by Jewish thinkers."⁵⁹

The responsa literature contains a clear discussion of whether an artificially created person (a *golem*) is human or not — may it be killed, does it count in a religious quorum, can it ritually slaughter and so on. It is important to recognize that Jewish law prohibits killing of a deaf-mute, a lunatic, or an infant. Humanness — being created in the image of God — is not dependent on intelligence.⁶⁰ Rather, as the *Encyclopedia Talmudit* states:

A person who is born from another person — in the womb of a woman — is prohibited to be killed.

It adds:

A being which is created through a mystical process or through a mixing of divine letters is not prohibited to be killed.⁶¹

Yet other Jewish law authorities focus on whether the origins of these artificially created "people" (*golems*) are non-human, or are divinely created (and thus not human), or are both specifically divinely created and a deaf-mute (and thus a human but not an adult).⁶² Indeed, Samuel Adels⁶³ could easily be understood as ruling that a *golem* that can speak and appears human, is, in fact, human — a result that appears very intuitive to this writer.⁶⁴ Indeed, support for the proposition that "humanness" is determined by human function in cases where apparent definition of humanness — birth from a human mother — does not apply can be found in an explicit discussion of humanness in the Jerusalem Talmud. That source states:

Rabbi Yasa states in the name of Rabbi Yochanan: "if [a creature] has a human body but its face is of an animal, it is not human; if [a creature] has an animal body, but its face is human, it is human.

This would indicate that when the simple definition does not apply, one examines the creature for "human" features. However, the talmud continues:

Yet suppose it is entirely human, but its face is animal like, and it is studying Jewish law? Can one say to it "come and be slaughtered"? [Rather one cannot]. Or consider if it is entirely animal like, but its face human, and it is plowing the field [acting like an animal] do we come and say to it, "come and perform levirate marriage and divorce"? [Rather, one cannot.]

The talmudic conclusion seems to be simple. When dealing with a "creature" that does not conform to the simple definition of humanness — born from a human mother — one examines context to determine if it is human. Does it study Jewish law (differential equations would do fine for this purpose, too) or is it at the pulling end of a plow? By that measure, a

clone, even one fully incubated artificially, would be human, as it would have human intellectual ability, and human attributes.⁶⁵

However, it appears to this writer that these stories about fully artificial people are of no relevance in cases of artificial insemination (AIH/D), in vitro fertilization (IVF), or cloning since the fertilized egg is implanted in the uterus of a woman, who gives birth to a child, and who is the legal mother. Thus, a clone, no less than any other “born” child, meets the prima-facia test for humanness and is to be considered human. Indeed, the definition of humanness found in the *Encyclopedia Talmudit* should be enough to “prove” that a cloned human is human when it is born to a human mother.⁶⁶

To the extent that the mystical stories have something to contribute to the approach of Jewish law to this topic — itself a matter of significant dispute as noted by Samuel Adels, Maharsha, above — that discussion will have to wait for the invention of a full human incubator, thus allowing a child to be born without any implantation into any human.⁶⁷

E. Miscellaneous Issues Related to Cloning

A host of miscellaneous issues raised by this analysis can only be dealt with in a preliminary way. The first is the famous discussion generated by a series of responsa by Saul Israeli and others as to whether a dead man can legally father a child according to Jewish law and who owns the genetic material of the dead person which will subsequently be used to reproduce this person.⁶⁸ Presumably, those who hold that a dead man cannot legally reproduce so as to have a paternal relationship or fulfill a mitzvah would rule that one whose cells are cloned after death is not the father according to Jewish law. Those who disagree would seem to disagree in the case of cloning as well.⁶⁹

There is little doubt that soon on the horizon there will be yet another (modified) form of cloning that would permit the taking of nucleic genetic material from a variety of sources without incorporating the genetic material of just one person. How exactly Jewish law would view the parental, familial, or maternal status of one who has various pieces of genetic materials from a variety of sources is an issue which is little addressed. If one accepts the analysis of Bleich that it is plausible for a child to have more than one legal mother or father — based on the fact that Jewish agricultural laws allows for a plant to have more than two legal parents — one would be inclined to view the parents of those children as the contributors of the genetic material as well as the gestational mother.⁷⁰ Presumably those who disagree with that analysis would argue that the gestational mother is the “real” mother according to Jewish law. In a case where there is no gestational mother,⁷¹ this approach would argue that there is no mother according to Jewish law, or perhaps this approach would label the primary

donor as the mother or father, or consider them all doubtful parents.⁷²

IV. Is Cloning Permissible, Prohibited, or A Good Deed

A. Categories of Duties in Jewish Law

The previous section’s analysis was limited to the ramifications of cloning without any discussion of whether Jewish law views such conduct as a good deed, a bad deed, or merely a permissible activity. Five distinctly different categories can be advanced in the area of reproductive activity.

1. Activity Which Is Obligatory.

For example, the requirement for a man to procreate by having a minimum of two children — a boy and a girl — is obligatory according to Jewish law. At least as a matter of theory, a Jewish law court can compel one to marry and have children.⁷³

2. Activity Which is Commendable, but not Obligatory.

For example, Jewish law rules procreation beyond the obligation to have one boy and one girl to be a discretionary activity which is a mitzvah. Such conduct is commendable, but is not legally prescribed.⁷⁴

3. Activity which is Permissible.⁷⁵

For example, Rabbi Moses Feinstein is of the opinion that it is permissible, but not mandatory, for a woman to engage in artificial insemination with sperm other than her husband’s, with her husband’s consent, in order that she may have a child.⁷⁶

4. Activity which is discouraged but not prohibited.

For example, Jewish law rules having many children a discretionary mitzvah (see rule 2, above) and deems the decision to stop having children after one has the minimum number required as a nullification of an optional mitzvah. One who avoids fulfilling this commandment has forsaken the opportunity to do a good deed (a mitzvah) — but such conduct is not definitionally prohibited.

5. Activity which is Prohibited.

For example, an abortion for a reason unacceptable to Jewish law is prohibited.⁷⁷

B. Cloning as a Form of Reproduction?

The final discussion about the permissibility of cloning focuses on whether the obligation to be fruitful and multiply or its rabbinic analog has been fulfilled by the cloning activity. This question seems to be without clear precedent in Jewish law. One could argue that the definitional activity found in the obligation to be fruitful and multiple solely involves a man giving genetic material to produce a child who lives. Such a child is produced in this case. There is at least one mother (gestational mother) and in most circumstances there will be a father/second parent. Why then should no proper good deed (*mitzvah*) be fulfilled, or at least a child born that exempts one from the future obligation to procreate? On the other hand, one could argue that the intrinsic definition of the obligation to be fruitful and multiply, or its rabbinic cognate, involves the combination of the genetic materials of a man and a woman — whether through a sexual act or in a petri dish — and absent the combination of genetic material from a man and a woman, there is no fulfillment of the obligation to be fruitful and multiply.⁷⁸ Indeed, this could be implied from the comments of Nahmanides on Leviticus 18:6, which perhaps make reference to other Jewish authorities who maintain that incest is prohibited because it eliminates genetic diversity.⁷⁹

It seems to me that the first approach is superior to the second. This is particularly true when the fertilized egg is implanted in a woman, thus producing a child and a birth-like process that clearly resembles the natural birth process and motherhood.⁸⁰ Indeed, even if one were inclined to argue that there is no fulfillment of the full obligation to procreate absent fertilization, maybe cloning as a form of reproduction is sufficient to exempt one from the obligation to procreate again. For example a Gentile who converts to Judaism after having children as a Gentile is exempt from the renewed obligation to procreate as he already had children before⁸¹ (even if these children did not convert to Judaism with their parents).⁸²

So too, it is important to recognize that the Jewish legal tradition limits the obligation to be fruitful and multiply to a man and not to a woman. It recognizes that in all circumstances a woman is a necessary participant in the obligation to be fruitful and multiply, but yet for a variety of reasons outside the scope of this paper it is quite clear that the normative Jewish tradition assigns no obligation upon a woman to be fruitful and multiply.⁸³

Thus, when cloning involves the taking of genetic materials from a woman and putting it in the egg of another woman, while a third woman carries the child to term, there is no *mitzvah* (as none of the participants are obligated) and the activity itself is neither good nor bad although the need to engage in other prohibited activity would be enough to prohibit this cloning according to Jewish law, as there is no counterbalancing *mitzvah* to offset even a small impropriety.⁸⁴

So far, this paper has not yet voiced any intrinsic grounds found in Jewish law to prohibit cloning. Indeed, a review of the cloning process does not indicate any apparent grounds to argue that there is a generic blanket prohibition against cloning.⁸⁵ One would be hard pressed to define the taking of the cells necessary to genetically reproduce the person as a form of wounding as the cells can be extracted without any apparent violation of Jewish law. Indeed, in that regard, cloning lacks many of the serious technical Jewish law problems associated with artificial insemination, in vitro fertilization, and surrogate motherhood, all of which have serious issues raised in terms of the fertilization of the egg by the sperm, and other related issues. Cloning — precisely because it does not involve any reproductive technology other than implantation — seems to be free of these issues.

However, this analysis does indicate that in the case where the donor of the genetic material is a woman, the best that one can categorize this activity as is permissible activity, as no good deed is fulfilled. Indeed, in a case where the proposed gestational mother is married, the fact that the clonor is a woman (and fulfilling no positive commandment) might — alone — be enough of a reason to prohibit activity, since a number of Jewish law authorities prohibit a married woman from functioning as a gestational mother for any child other than one whose father is her husband.⁸⁶ Perhaps plausible claim could be made that one should be strict for this approach, and prohibit cloning, absent a good deed (*mitzvah*) being performed, which is not the case when the clonor is a woman.

In sum, I am essentially unaware of any substantive violation of Jewish law that definitionally occurs when one clones cells from one human being into the egg of another and implants that fertilized egg into a gestational mother.⁸⁷ Thus, in those circumstances where the clonor is a man faced with the obligation to be fruitful and multiply, or its rabbinic cognate, and he cannot fulfill the obligation otherwise (including through AID/H or IVF), cloning can be classified as a good deed. In those circumstances where the clonor is a woman, cloning can be classified as religiously neutral, neither prohibited nor a *mitzvah*, simply permissible, depending on the desires of the parties.⁸⁸

C. Permission to Clone

The question of property right ownership in one's own DNA sequence needs to be addressed, as scientifically there is no reason why a person needs to consent to being cloned. Cells could be extracted without a person's consent, or even, perhaps at some point, a person could be DNA sequenced such that one could duplicate their genetic code without the need for extracting anything from that person's body. It would appear to this writer that a person's right to physical integrity is sufficiently well established in Jewish law and tradition that there

is no need to demonstrate that Jewish law would prohibit one from assaulting another to get cells from their body to clone.⁸⁹ However, if that were done — notwithstanding the violation — the resulting child who was cloned would still be a human being, entitled to all protections granted all such individuals, just like a child conceived through rape is a human, with no stigma.

However, the right to control one's own genetic information without a physical intrusion is much harder to justify in the Jewish law tradition. It would seem to me that taking a person's genetic information through a scan or from cells naturally shed from a person while they function is not much different than taking a person's literary accomplishments without permission (but with attribution). The question of whether one can copy another's invention, book, insight, quote, Torah ruling, or genetic code would seem to be the same issue. The vast majority of Jewish law authorities accept that Jewish law has some notion of patent and copyright which prevents one from taking ideas which another creates, even if nothing is physically taken. However, where this prohibition precisely comes from and what it is based on differs significantly from decisor to decisor, and is based on such diverse concepts in Jewish law as excommunication, theft, implied conditions, limited sales, secular law, common commercial practice, and other commercial law concepts.⁹⁰ Its precise application to cloning must await future analysis.

V. The Slippery Slope and the Denigration of Human Beings

Many have argued that the problems with cloning have nothing to do with the technical issues relating to cloning; rather, it is the fear that the individuals produced through cloning will not be considered human by society, and that cloning will lead to a number of gross violations of normative [Jewish] laws and ethics, such as the harvesting of organs from these people, their use for human experimentation, slaves, or other prohibited activities.⁹¹ The correctness or incorrectness of this assertion of prospective ethical violation of the clones' rights as humans is difficult to evaluate in the Jewish tradition. There is no doubt at all that a person produced through cloning, and born of a mother, is a full human being according to Jewish law and tradition and is entitled to be treated — must be treated — as such by all who encounter this person. Each person is created “in the image of God,” and must be treated as such. Indeed, just as identical twins — *two* people with identical genetic “codes” — are *two* unique individuals, similar in some ways and different in others, and are to be treated as two separate unique humans, so too a human being who was cloned from another human is a separate and unique person, fully entitled to be treated as a unique human.

I am hard pressed to find any rational Jewish law argument that could justify the

categorization of a person produced through cloning as not human. Indeed, an examination of the rationales for explaining why a *golem* is not human⁹² indicates that the absence of a human parent does not necessarily make one non-human — and a clone clearly has a mother, at the least. Even those Jewish law authorities who insist that absent a sexual act, no mitzvah is fulfilled, in situations such as IVF, have given not a scintilla worth of indication that the individuals produced through such processes are not human.

Some fear that society will mislabel such individuals as something other than human, and engage in activities tantamount to murder or enslavement, by treating these individuals as organ sources, or as individuals to be experimented upon, or as forced labor. One could imagine a rabbinic authority, aware of the possibility of ethical lapses in our society, arguing that as a temporary measure based on the exigencies of the times, cloning should not be engaged in until such time as the appropriate educational activity can be embarked on to teach people that clones are human beings entitled to be treated with full and complete human dignity.⁹³ However, this type of prophylactic rule which argues that permitted activity should be prohibited in light of the ethical failures of the times is not the same as asserting as a normative rule of Jewish law that such conduct is prohibited. Rather it is a temporary measure to prohibit that which is intrinsically permissible.⁹⁴

The same is true about arguments against cloning grounded in efficiency. Some have argued that Jewish law should prohibit cloning because so much human reproductive material has to be expended to produce a single clone.⁹⁵ Whatever the merits of this argument, it is likely that the march of scientific progress will vastly reduce the inefficiency of this process. More significantly, normative Jewish law does not view the death of pre-embryos in the process of attempted implantation as violative of Jewish law. That is exactly what embryos are to be used for.⁹⁶

It could be argued that cloning should be prohibited based on the various talmudic dicta that seem to praise the importance of genetic diversity.⁹⁷ This, however, seems to paint with too broad a brush. It is clear that the Jewish tradition views the natural process of reproduction as the ideal, for a variety of reasons including that it allows for genetic diversity, with all other methods to be used only when normal reproduction is unavailable. Cloning, for a variety of reasons, falls far short of the ideal. However, to claim that a single case of cloning as an alternative to infertility should be prohibited based on this analysis is no more persuasive than to claim that Jewish law should forbid artificial insemination or IVF since it is less than ideal. The correct response should be that these less than ideal methods should only be used in circumstances where the ideal method does not or cannot work. The talmudic dictum about genetic diversity stands for the proposition that wholesale cloning should be discouraged, and

nothing more.

More generally, Jewish law denies the authority of the post talmudic rabbis to make prophylactic decrees permanently prohibiting that which is permissible on these types of grounds.⁹⁸ This is even more so true when such a decree would permanently prohibit an activity which is, in some circumstances, the only way a person can fulfill the obligation to reproduce and could in a variety of circumstances have overtly positive results.

The Jewish tradition would not look askance on the use of cloning to produce individuals because these reproduced individuals can be of specific assistance to others in need of help. Consider the case of an individual dying of leukemia in need of a bone transplant who agrees to clone himself with the hopes of producing another like him or her who, in suitable time, can be used to donate bone marrow and save the life of a person (and even more so, the clonor). The simple fact is that Jewish law and tradition view the donation of bone marrow as a morally commendable activity, and perhaps even morally obligatory such that one could compel it even from a child.⁹⁹ Jewish law and ethics see nothing wrong with having children for a multiplicity of motives other than one's desire to "be fruitful and multiply." Indeed, the Jewish tradition recognizes that people have children to help take care of them in their old age, and accepts that as a valid motive.¹⁰⁰ It recognizes a variety of motives for people to have children; there is no reason to assert that one who has a child because this child will save the life of another is doing anything other than two good deeds — having a child and saving the life of another.¹⁰¹ The same thing is true for a couple who conceive a child with the hopes that the child will be a bone marrow match for their daughter who is dying of leukemia, and is in need of bone marrow from a relative. While the popular press condemns this conduct as improper, the Jewish tradition would be quite resolute in labeling this activity as completely morally appropriate. Having a child is a wonderful blessed activity; having a child to save the life of another child is an even more blessed activity. Such conduct should be encouraged rather than discouraged.

I suspect that, to the extent that human cloning does become an available medical procedure, it will be for the treatment of profound infertility, such as in the case of a soldier who was fully castrated after stepping on a land mine, and not for any of the more controversial purposes. Just like there was great concern over how frequently and for what purposes artificial insemination would be used, and after 20 years of data we see that it is used nearly exclusively to treat infertility, I suspect such will be the case here, too.

VI. Conclusion

One is inclined to state that Jewish law views cloning as far less than the ideal way to

reproduce people; however, when no other method is available it would appear that Jewish law accepts that having children through cloning is a mitzvah in a number of circumstances and is morally neutral in a number of other circumstances. Clones, of course, are fully human and are to be treated with the full dignity of any human being. Clones are not robots, slaves, or semi-humans, and any attempt to classify them as such must be vigorously combated.

In addition, the relationship between the male clonor and the clonee is that of father and child, and the relationship between the gestational mother and the child that she bears is one of mother and child.¹⁰² Where the clonor is a woman, there is a natural tension between her status as a mother and the status of the gestational mother as a mother.¹⁰³ While I am inclined to think that the gestational mother is the "real mother" according to Jewish law, there is some Jewish law discussion that argues that the gestational mother is not the real mother, and the genetic mother is, thus making the clonor the mother. In addition there is the extremely thoughtful opinion by Bleich, arguing that both can be the mother. Certainly the female clonor is to be considered, at the very least, a possible mother such that it would be prohibited for the clonee to have a sexual relationship with any of the members of the family of the genetic donor as well as the surrogate mother.¹⁰⁴

There is a natural tendency to prohibit that which is unknown, and that tendency is itself a morally commendable virtue lest one engage in prohibited activity as its consequences are not understood. However, permanently prohibiting that which one does not understand is a regrettable state of affairs. The Jewish tradition imposes a duty on those capable of resolving such matters to do so. This preliminary analysis is submitted in the hopes that others will comment on and critique it, and Jewish law will develop an established policy concerning a variety of issues relating to cloning.¹⁰⁵

POSTSCRIPT

The words of Rabbi Judah Luria (*Maharal* from Prague) speak eloquently about the power of human creativity to reshape the universe, and how that power was given to humanity at the time of creation. He states:

The creativity of people is greater than nature. When God created in the six days of creation the laws of nature, the simple and complex, and finished creating the world, there remained additional power to create anew, just like people can create new animal species through inter-species breeding People bring to fruition things that are not found in nature; nonetheless, since these are activities that occur through nature, it is as if it entered the world to be created.....¹⁰⁶

Luria's point is that human creativity is part of the creation of the world, and this creativity changes the world, which is proper. The fulfillment of the Biblical mandate to conquer the earth,¹⁰⁷ is understood in the Jewish tradition as permitting people to modify — conquer — nature to make it more amenable to its inhabitants, people. Cloning is but one example of that conquest, which when used to advance humanity, is without theological problem in the Jewish tradition.

NOTES

1. Jewish law, or *halakha*, is used herein to denote the entire subject matter of the Jewish legal system, including public, private, and ritual law. A brief historical review will familiarize the new reader of Jewish law with its history and development. The Pentateuch (the five books of Moses, the *Torah*) is the historical touchstone document of Jewish law and, according to Jewish legal theory, was revealed to Moses at Mount Sinai. The Prophets and Writings, the other two parts of the Hebrew Bible, were written over the next 700 years, and the Jewish canon was closed around the year 200 before the common era ("B.C.E."). From the close of the canon until 250 of the common era ("C.E.") is referred to as the era of the *Tannaim*, the redactors of Jewish law, whose period closed with the editing of the *Mishnah* by Rabbi Judah the Patriarch. The next five centuries was the epoch in which the two Talmuds (Babylonian and Jerusalem) were written and edited by scholars called "*moraim*" ("those who recount" Jewish law) and *Savoraim* ("those who ponder" Jewish law). The Babylonian Talmud is of greater legal significance than the Jerusalem Talmud and is a more complete work.

The post-Talmudic era is conventionally divided into three periods: (1) the era of the *Geonim*, scholars who lived in Babylonia until the mid-eleventh century; (2) the era of the *Rishonim* (the early authorities), who lived in North Africa, Spain, Franco-Germany, and Egypt until the end of the fourteenth century; and (3) the period of the *Ahronim* (the latter authorities), which encompasses all scholars of Jewish law from the fifteenth century up to this era. From the period of the mid-fourteenth century until the early seventeenth century, Jewish law underwent a period of codification, which led to the acceptance of the law code format of Rabbi Joseph Karo, called the *Shulhan Arukh*, as the basis for modern Jewish law. The *Shulhan Arukh* (and the *Arba'ah Turim* of Rabbi Jacob ben Asher, which preceded it) divided Jewish law into four separate areas: *Orah Hayyim* is devoted to daily, Sabbath, and holiday laws; *Even Ha-Ezer* addresses family law, including financial aspects; *Hoshen Mishpat* codifies financial law; and *Yoreh Deah* contains dietary laws as well as other miscellaneous legal matter. Many significant scholars — themselves as important as Rabbi Karo in status and authority — wrote annotations to his code which made the work and its surrounding comments the modern touchstone of Jewish law. The most recent complete edition of the *Shulhan Arukh* (Vilna, 1896) contains no less than 113 separate commentaries on the text of Rabbi Karo. In addition, hundreds of other volumes of commentary have been published as self-standing works, a process that continues to this very day. Besides the law codes and commentaries, for the last 1200 years, Jewish law authorities have addressed specific questions of Jewish law in written responsa (in question and answer form). Collections of such responsa have been published, providing guidance not only to later authorities and to the community at large. Finally, since the establishment of the State of Israel in 1948, the rabbinical courts of Israel have published their written opinions deciding cases on a variety of matters.

2. See e.g. J. David Bleich, "Moral Debate and Semantic Sleight of Hand" 27 *SUFFOLK U. L. REV.* 1173 (1995).

3. Suzanne Stone, "In Pursuit of the Counter-text: The Turn to the Jewish Legal Model in Contemporary American Legal Theory." 106 *HARV. L. REV.* 813 (1993).

4. For more on this, see Moses Maimonides, *LAWS OF PROHIBITED SEXUAL RELATIONS* Chapters 1 and 2.

5. Particularly in light of the recent call for a moratorium on human cloning and research by the eminent National Bioethics Advisory Commission, - which was supported by neither of the Jewish law authorities who testified before the Commission - it is vital to develop and explain why Jewish law would not support such an approach. For more on the Commission's report, see "Cloning Human Beings: Report and Recommendations of the National Bioethics Advisory Commission" (Rockville, Maryland, 1997), at pages 107-110.

6. This issue is discussed at great length in my "The Establishment of Maternity and Paternity in Jewish and American Law," III *NATIONAL JEWISH LAW REVIEW* 117-152 (1988), which compares the response to artificial insemination, surrogate motherhood, adoption, and transsexual surgery by Jewish law, American law, and the classical common law.

7. Andrea Stumpf, "Redefining Mother: A Legal Matrix for New Reproductive Technologies", 96 *YALE LAW JOURNAL* 187 (1986) and *Johnson v. Calvert*, 851 P.2d 776 (Cal. 1993).

8. *UNIFORM PARENTAGE ACT* § 5, 9B *U.L.A.* 579 (1979).

9. See Katz, "Re-writing the Adoption Story", 5 *FAM. ADVOC.* 9 (1982).

10. This derives from the Roman law rule, rather than the common law tradition; for more on this, see McLauliff, *THE FIRST ENGLISH ADOPTION LAW AND ITS AMERICAN PRECURSORS*, 16 *Seton Hall L. Rev.* 656, 659-60 (1986).

11. 2 *AM. JUR. 2D*, Adoption § 1-2; J. McCahey, M. Kaufman, C. Kraut, D. Gaffner, M. Silverman & J. Zett, 2 *CHILD CUSTODY & VISITATION LAW AND PRACTICE* § 10.01-03, § 11.0(1) (1987); H. Gamble, *THE LAW RELATING TO PARENTS AND CHILDREN* 169 (1981).

12. See Will Cloning Beget Disaster?, *Wall St. J.*, May 2, 1987, at A1. In August 1997, the National Bioethics Advisory Commission recommended that federal funding of cloning be prohibited, and that the states do likewise.

Indeed, the tone of the whole report reflected a cautious uncertainty and the importance of significant ethical forethought. However, given the free-market nature of assisted reproduction in the United States, it is unlikely that a nationwide ban on private cloning would be implemented. See *Cloning Human Beings*, supra note 5.

12a. See Laurence Tribe, *Second Thoughts on Cloning*, N.Y. Times, Dec. 5, 1997.

12b. Gina Kolata, *Human Cloning: Yesterday's Never Is Today's Why Not?*, N.Y. Times, Dec. 2, 1997.

12c. *Id.*

13. See my "The Establishment of Maternity and Paternity in Jewish and American Law," III NATIONAL JEWISH LAW REVIEW 117-152 (1988) at page 118-123.

14. *Id.* at 147-152.

15. *Id.* at 131-147.

16. A discussion of the status of individuals produced by cloning in relationship to other members of their "family" is vital in Jewish law whether cloning is permissible, prohibited, or morally neutral. Is a clonee a legal child of the clonor? Is the clonee the legal sibling of the clonor? Is the clonee human? All of these status determination have nothing to do with the question of whether such conduct is prohibited or permissible or even a good deed which fulfills religious obligation. In every Jewish law discussion, it is not sufficient to address whether such conduct is permitted, prohibited, discouraged, encouraged or neutral, one must discuss the results of such conduct in all circumstances, even if a violation of the law entails. Indeed, status determinations are unrelated to culpability for a violation of Jewish law generally. Thus, one classified as a lunatic who has sexual relations with a sibling, who is also a legal lunatic, produces a child who is a illegitimate, even as there is no sin.

17. See Moses Maimonides, LAWS OF REBELLION, 2:1-9.

18. Because of the nature of the Jewish law discourse, section III and IV appear to be in reverse order, as it would appear more logical to discuss permissibility before consequences. However, since in Jewish law the permissibility of any activity is frequently dependent on the consequences, this order is adopted.

19. "Clone Mammals ... Clone Man," NATURE 13 March 1997 at page 119.

20. See e.g. Mona S. Amer, "Breaking the Mold: Human Embryo Cloning and its Implications for a Right to Individuality", 43 UCLA L. REV. 1659 (1996).

21. "Clone Mammals ... Clone Man," NATURE 13 March 1997 at page 119. This is not cloning in the common use of the term, but, in fact, is a form of neo-cloning.

22. All children of the same woman have the same mitochondrial DNA, which has a higher mutation rate than nuclear DNA; see supra, note 21.

23. Both the nuclear and the non-nuclear DNA are the same.

24. Such identical twins can be artificially induced by blastomere separation; This separation, while widely debated in the popular press would seem not controversial in Jewish law, if done for the sake of procreation and as a "last" alternative when other egg sources are not available.

25. The exact role of non-nuclear DNA in character formation is unknown at this time, and one is simply uncertain as to how close the phenotypical resemblance will, in fact, be; however, the current state of technology indicates that the vast amount of ones genetic characteristics are determined by one's nuclear DNA.

26. In theory, the gene donor, the egg donor and the gestational mother could all be the same person, if the clonor is a woman. Obviously, a man can only be a nuclear DNA donor.

27. This is not the same as asserting that the gestational mother has no impact on the development of the child. Without a doubt the gestational mother has a significant impact on the development of the fetus through her hormonal releases and other environmental factors through the placenta.

28. Or perhaps the two women who donated the nuclear DNA and mitochondrial DNA.

29. This is not quite true when the genes are implanted in the egg of another, as the non-nuclear DNA would be different.

30. See *infra* in text accompanying note 32.

31. This issue is discussed at great length in my "The Establishment of Maternity and Paternity in Jewish and American Law," III NATIONAL JEWISH LAW REVIEW 117-152 (1988).

An extraordinarily thoughtful and detailed study of how the various assisted reproductive methods are viewed by both Jewish and American law is forthcoming by Dr. Chaim Povarsky of Touro Law Center entitled "Regulating Advanced Reproductive Technologies: A Comparative Analysis of Jewish and American Law." This manuscript surveys many of the issues that are preliminary steps towards a discussion of cloning, such as AIH/D, IVF, surrogacy and other assisted reproductive techniques.

32. See my "The Establishment of Maternity and Paternity in Jewish and American Law," III NATIONAL JEWISH LAW REVIEW 117-152 (1988).

33. J. David Bleich, "In Vitro Fertilization: Questions of Maternal Identity and Conversion" TRADITION 25:4 (1991) 82-102, at pages 86-88.

34. See Ezra Bick, "Ovum Donations: A Rabbinic Conception of Maternity" TRADITION 28(1) (1993) at page 28-45. Bleich responded in "Maternal Identity Revisited," TRADITION 28(2) (1994) at page 52-56. See also Abraham S. Abraham, NISHMAT AVRAHAM Even Ha-Ezer 22:2 at 186 (1995) in appendix volume.

35. See supra, notes 13 and 31 to 34.

36. See e.g. Eliezer Waldenberg, TZITZ ELIEZER 15:45.

37. GENESIS 1:28, 9:1, and 35:11.

38. ISAIAH 45:18.

39. This is analogous to the sexual relationship between a Jew and a non-Jew which Jewish law maintains produces no legal relationship between the father and the child. Whether the father be Jewish and the mother not, or the reverse, the Jewish legal tradition denies paternity can be established in such cases.

40. Yitzchok Breitowitz, "Halakhic Approaches to the Resolution of Disputes Concerning the Disposition of PreEmbryos", TRADITION 31:(1)64-92 (1996) at pages 65-66. In fact, there are five techniques to assist in reproduction. They are; (1) in vitro fertilization (IVF); (2) gamete intrafallopian transfer (GIFT); (3) intrauterine insemination (IUI); (4) zygote intrafallopian transfer (ZIFT); and (5) intracytoplasmic sperm injection (ICSI). If IVF fulfills the duty (mitzvah) of being fruitful or its rabbinic cognate, and establishes paternity, then all the remaining one's also logically must, as IVF involves the most activity outside the human body, in that fertilization occurs in a petri dish.

41. This stands in sharp contrast to the approach of canon (Catholic) law, which is succinctly stated by the well known Catholic theologian, John Cardinal O'Connor of New York. He writes:

Is cloning human beings morally permissible? Categorically no.... I offer three, not exhaustive, basic reasons for my belief: Cloning is a drastic invasion of human parenthood. By design, a clone technically has no human parents, hence creating a clone violates the dignity of human procreation, the conjugal union (marriage) and the right to be conceived and born within and from marriage. A clone is a product made, not a person begotten.

The Scottish cloned sheep, Dolly, came into being on the 300th attempt. The first 299 attempts essentially fell apart. Switch to human beings...How many human beings will be destroyed before whose ideal is achieved? Who does the cloning? Who owns the clones? Are they to be marketed? Is the idea of clone-slaves, or clones created to meet particular needs of warfare, ridiculous? I think not....

Cloning will never be a poor people's campaign. Could it become an entitlement requiring public subsidy? Of itself it cures no pathology. Thus we are not doctoring the patient but the race.

Will Cloning Beget Disaster?, THE WALL STREET JOURNAL, Friday, May 2, 1997 (1997 WL-WSJ 2419168).

42. See text accompanying notes 31 to 41.

43. The duty to be reproduce (literally "be fruitful," in Hebrew "*peru-urevu*"), or its rabbinic analog (literally "to conquer," in Hebrew, "*lashedvei*"). The argument, advanced by many, is that rabbinic obligation is fulfilled even when the biblical obligation is not, as the rabbinic obligation is result oriented, whereas the biblical obligation is action oriented with a specific process.

44. See Aaron Soloveitchik, "Test Tube Babies", 29 OHR HA'MIZRACH 128 (1980).

45. It is known that mitochondrial DNA contains the encoded information for a variety of proteins or protein portions. How changes in a person's mitochondrial DNA would subtly effect the person's characteristics is quite unknown.

46. See Bleich, supra note 33.

47. A number of individuals have suggested that — since this child clearly would lack a father according to Jewish law in the case of a woman donating genetic material to be cloned and the gestational mother is the "mother" according to Jewish law — maybe the provider of the genetic material should be the "father" whether that person is a man or a woman, as providing half the genetic material seems to be enough according to most Jewish law authorities to label one the "father" even without intercourse. The possibility that motherhood and fatherhood can be defined independently of the mother or father's gender is explicitly discussed by Rabbi Joseph Babad in MINCHAT HINUCH 189(1), who discusses the case of an androgenous male who fathers a male child, and then has a (homo)sexual relationship with that male child. Babad speculates that if the male child has a homosexual relationship with his father, both are liable for incest, as well as homosexual activity. However, if the sexual relationship is with his father's female sexual organs (after all he is androgenous), Babad speculates that "the son should be liable for sexual relations with his mother, perhaps." Babad continues this line of reasoning, — limiting it with modifiers such as "perhaps" and "maybe" — which incline one to think that the sexual identification of one's mother and father are not crucial to the definition, but rather are almost interchangeable with each other (*i.e.*, a man

who fathers a child could be called a mother in some circumstances). Notwithstanding the presence of this very tentative analysis, there is little or no precedent for such an analysis; the classical Jewish law codes leave little room for this discussion, which seeks to define motherhood and fatherhood in reference to the gender of the parents, and not independent of the gender; see ENCYCLOPEDIA TALMUDIT, Av 1:5-18 and Am 2:21-26. Indeed, even Babad's analysis seems to uncouple only gender from parental status in the case of one whose gender status is uncertain (even though he fathered a child); no such ambiguity is normally present.

48. YEVAMOT 97b.

49. Rashi, commenting on YEVAMOT 97b, s.v. *tumim*.

50. See SHULHAN ARUCH, Yoreh Deah 269:1.

51. SHULHAN ARUCH, Even Haezer 15:10.

52. Fertilized eggs have been split, producing induced identical twins; see note 20.

53. An elaboration of this analysis is needed. The splitting of a fertilized egg is perhaps the simplest form of cloning, the argument goes, and just like that case produces sibling relationships and not a child-parent relationship, so too, a clone from an adult should be classified as a sibling, and not as a child. This analysis appears to be incorrect. What makes the identical twins siblings in the case of fertilized eggs, is the definition of siblings discussed above: a common mother and father. The fact that these children share a uterus and a common egg, and thus a mother (see Yevamot 97b cited in note 48) inclines one to think that they also share a father who provided the sperm that created the first one of them, and thus are siblings. Clonor and clonees do not share a mother (egg donor or gene provider) or a father (provider of genetic material) and thus are not siblings.

This is a significant issue in Jewish law, as it has ramifications as to whether the production of clones is a fulfillment of the mitzvah of "to be fruitful and multiply," and whether a clone can marry a natural daughter of the clonee.

54. Indeed the concluding paragraph in Part III:B discussing clones of identical twins, above makes this clear.

55. Consider the case of the egg of a Jewish woman fertilized by the sperm of a non-Jewish man and then implanted into the uterus of a Jewish woman. Without doubt, Jewish law would assign paternity to nobody and the question of maternity within the categorization of surrogate motherhood described in Section III. The fact that there is no father cognizable according to Jewish law would affect in no way, shape or form the Jewish law disagreement between the two women as to who the mother is.

56. Perhaps only as a stricture; Bleich, supra note 33, at page 93-95 and note 43 at page 102. This doubt is likely to continue even when the clonor is Jewish, and the egg donor is gentile, as the egg donor's religious identity is also relevant, at least once one considers the possibility of multiple mothers.

57. SANHEDRIN 65b.

58. For more on *golems* in the Jewish tradition, see Moshe Idel, GOLEM: JEWISH MAGICAL AND MYSTICAL TRADITIONS ON THE ARTIFICIAL ANTHROPOID (Albany, 1990) at 213-232.

59. Chaim Steinmetz, "Creating New Species" Unpublished ms. My thanks to Rabbi Steinmetz for sharing his article with me.

60. For an elaboration on this, see Eleazar Fleckeles, TESHUVOT ME'AHAVA 53 who discusses whether a significantly deformed child is human, and concludes that it is obvious that the child is. For a tentative contrary assertion, see Ya'akov Hagiz, HALAKHOT KETANOT 37-38 which is responded to in Israel Meir Kagen, MISHNAH BERURAH 329 s.v. *ela*.

61. ENCYCLOPEDIA TALMUDIT, Adam 1:165. See also Tzvi Ashkenazi, HAHAM TZVI 94. Rabbi Jacob Emdem, SHELAT YAVETZ 2:82 quotes others who compare such a creature to an animal — it is alive, but not human.

62. Compare Tzvi Hirsch Shapira, DARKHEI TESHUVA on Yoreh Deah 6:11, Samuel Adels, MAHARSHA commenting on SANHEDRIN 65a, Gershon Henoch Leiner, SIDRAI TAHAROT Ohalot 5a, Yosef Rozin, TZAFNAT PANEACH 2:7.

63. Samuel Adels, MAHARSHA, commenting on Sanhedrin 65a.

64. For more on this, see Azriel Rosenfeld "Human Identity: Halakhic Issues" TRADITION 16:3 1977 at pages 58-74 and Azriel Rosenfeld "Religion and the Robot" TRADITION, 8:3 1966 at pages 15-26.

65. NIDDAH 3:2. This might however, indicate that a fully incapacitated clone might not be human. See Moshe Hersher, "Genetics and Test Tube Babies" HALAKHA UREFUAH 4:90-95 (5745).

Consider two talmudic discussions. There seems to be a talmudic discussion about mermaids, and whether they are human or kosher in BECHOROT 8a, where Rashi, s.v. *benai yama*, who has a slightly different version of the text, states that the Talmud is referring to "fish in the sea who have half human and half fish features, called "sirens" in old French." Rashi seems to claim that these mermaids can be impregnated by humans, and might have the legal status of humans. (However both the tosefta and the talmud, in the versions we have, seem to understand the discussion as being about how long dolphins carry their young to term, with no reference to mermaids, pseudo-humans, or interspecies pregnancies.) If Rashi's version is the proper one, one could claim from the talmud that mermaids are not

classified as human, but rather as not kosher fish.

So too, there seems to be a mishnaic discussion of the humanness of orangutans (in Hebrew, *adnei hasadeh*) in KILAYIM 8:5. Both Israel Lipshitz (TEFERET YISRAEL on *id.*) and Maimonides (COMMENTARY ON MISHNAH on *id.*) appear to grant these creatures human status with regard to certain issues. This is seconded by the famous remarks of Akiva Eiger concerning gorillas, where he indicates genuine doubt as to whether such animals are human or not; see GLOSSES OF R. AKIVA EIGER on Yoreh Deah 2 s.v. *kof*.

66. Supra note 61.

67. A fairly clear proof that the *golems* were not considered human is the fact that they were destroyed in the *golem* tales without any thought, when their function was finished; in that sense they were not considered human, where not governed by Jewish law, and could be treated as inanimate objects.

68. See Breitowitz, supra note 40, at pages 69-80.

69. For more on this, see Breitowitz, *ibid*.

70. See Bleich, supra note 33, at pages 93-95.

71. Such is currently science fiction and not fact.

72. Indeed, such is exactly the dilemma in the current cloning technology when the egg/ovum donor is not the same person as the contributor of the nucleic genetic material, as that clonee has genetic material from two different sources: nucleic genetic material from the clonor, and mitochondrial genetic material from the egg donor.

73. SHULHAN ARUCH Even Haezer 1:3. While this is no longer done, and has not been done for 500 years (see Rama commenting on *id.*), the rationale for not engaging in compulsion relating to the obligation to be fruitful and multiply has nothing to do with the fact that this obligation is not as a matter of theory compulsory in Jewish law.

74. Thus, a person who has already fulfilled the obligation to be fruitful and multiply and is not married is under no obligation to remarry one who can have more children, although such conduct is a discretionary good deed (*mitzvah*). This explains the ruling of Moses Isserless, Even Haezer 1:8, who permits such conduct to avoid disputes. Certainly, Rhombi would not permit one to avoid having the minimum required number of children to avoid confrontation. (This discussion does not address issues related to method of contraception, which is a completely different topic. However, marriage to one unable to have children — a method of contraceptive at some level — is certainly permitted. For more on that issue, see David Feldman, BIRTH CONTROL IN JEWISH LAW (3rd edition, 1995).

75. This is not to be confused with a reproductive technology that has some aspects of prohibition (*issur*) and some aspects of prescription (*mitzvah*) such as artificial insemination of the husband's sperm. That type of activity involves a balance of whether the aspect which is proscribed is outweighed by the fulfillment of the mitzvah which is prescribed.

Consider AIR or IVF/H. Since the vast majority of Jewish law authorities accept that one does fulfill the obligation to be fruitful and multiply by having children through artificial insemination, and also accept that, at the very least, artificial insemination is a breach of the rules of modesty found in the Jewish tradition and perhaps much more, the discussion of artificial insemination of the husband's sperm entails whether in toto the balance between the violation on one hand of the rules of modesty and perhaps the prohibition of masturbation is outweighed by the fulfillment of the mitzvah to be fruitful and multiply. As noted above, most Jewish law authorities are in favor of engaging in such artificial insemination with the husband's sperm. Not surprisingly, those who think that the husband fulfills no mitzvah when producing children other than through sexual relations, are also of the opinion that such conduct is morally prohibited because the ethical balance — the balance — is skewed in favor of prohibition since no mitzvah is fulfilled.

76. Moshe Feinstein, IGGEROT MOSHE, *Even Haezer* 1:10, 71; *Even Haezer* 2:11; *Even Haezer* 3:11. For reasons beyond this article, it is proper that the sperm donor be a gentile. Many argue with this approach, and this is not the place for a discussion of this issue, which is cited merely as an example of such conduct. For a detailed discussion of this issue, and a review of the various approaches, see the two article cited in note 30.

77. J. David Bleich, "Abortion in Halakhic Literature", CONTEMPORARY HALAKHIC PROBLEMS 1:325-371.

78. One could, in addition, argue that to fulfill the duty to reproduce, one must engage in a sexual act, and absent a sexual act, no duty is fulfilled. However, as noted above in section IV, that approach has been rejected by most decisors, and is no more (and no less) coherent in the case of cloning as it is in the case of IVF.

79. See Nahmanides commenting on LEVITICUS 18:6, and the notes written by Bernard Chavel on Nahmanides commentary who quotes an authority who adopts this view; see Bernard Chavel, NAHMANIDES ON THE BIBLE, LEVITICUS 18:6 (Jerusalem, 5720/1960). In the general issue of using Nahmanides' commentary on the Bible to frame these issues, see Moses Feinstein, DIBBROT MOSHE, 2 Kittubot 238-245 (1993)

80. Whether Jewish law would view this case differently in a circumstance in which a child is fully cloned and went from petri dish to incubator to feeding tube without even being implanted in the body of another seems to me to be

a vastly more complex question, perhaps indicating that in circumstances in which there is no mother and there is no father, there can be no fulfillment of the obligation to be fruitful and multiply.

81. *Shulhan Aruch*, Even Haezer 1:7. As explained in Biur Hativ commenting on Even Haezer 1:11, the converted Gentile in this case is exempt from the obligation to be fruitful and multiply, even though he has not — according to Jewish law — yet fulfilled this obligation at all. Rather, because he has children who are “called after his name,” he is exempt from fulfilling the obligation to procreate. A clone could be such a case exactly. Producing a clone could be a sufficient fulfillment of the obligation to procreate that — even though one has not actually fulfilled the mitzvah — one has exempted oneself from ever having to fulfill the obligation. (Such a logic was first suggested to me by J. David Bleich.)

82. This is a dispute; compare Rabbi Samuel Ben Uri, CHELKAT MECHOKET, Rabbi David Halevi, TURIE ZAHAV (*Taz*), and Rabbi Samuel Pardue, BEIT SHMUEL all commenting on Even Haezer 1:7.

83. SHULHAN ARUCH Even Haezer 1:13. It appears to me that this line of reasoning provides an argument that the Jewish tradition does not insist on the combination of genetic material from two people — with each side providing half the genetic material as a *sin-quo-non* for fulfilling the mitzvah to reproduce — as the mitzvah is only obligatory on one of the two parties; the woman’s contribution is necessary, but not a mitzvah. Consider the science fiction case of what would happen if a drug were developed that permitted a sperm cell to self replicate to the diploid number thus giving it a full component of 46 chromosomes, and that sperm cell was capable of replicating in a way that allowed it to fertilize an egg naturally. Would there be any doubt that the man that produced that sperm, and fathered a child (which is not a clone at all) has fulfilled the duty to reproduce.

84. Let me rephrase. It is markedly easier to argue that any conduct is prohibited according to Jewish law in cases where the scale which weighs its positive and negative components clearly contains nothing on the positive side of the scale.

85. By the term “generic prohibition,” I mean an activity that definitionally violates Jewish law, such as the prohibition to kill, or the prohibition to waste seed, or the prohibition of adultery, or other specific prohibitions.

86. See Yaakov Breish, CHELKAT YAAKOV 3:45-48. Similarly, see Yecheil Yaakov Weinberg, SREDAI EISH 3:5.

87. One writer recently suggested that there was a problem with killing the nuclear material in the unfertilized egg, as this is a type of abortion. This seems to be mistaken, as the egg/ovum is removed from the egg donor prior to fertilization. As ably demonstrated by Breitowitz, there might be serious problems associated with destroying eggs after they are fertilized, but not before they are fertilized; Breitowitz, *supra* note 40, at page 67.

88. The fact that this activity is a good deed if the genetic donor — the clonor — is a man, does not indicate that such cloning must or should be done according to Jewish law. There is a wealth of literature indicting that a man is under no religious duty to engage in any reproductive technique other than that found in the course of normal marital relations.

Just like artificial insemination, even by the husband’s sperm, is not obligatory, so too cloning would certainly not be obligatory in the Jewish tradition. The most that could be said about it is that cloning would be encouraged in the Jewish tradition when it is the only way for a man to reproduce. This is quite a bit different than the obligation to procreate through marital relations with one’s spouse which is a duty — an obligation according to Jewish law.

89. See SHULHAN ARUCH, Hoshen Mishpat 420:1-3.

90. For a survey of these issues in the context of patenting a non-human life form, see Arie P. Katz, “Patentability of Living within Traditional Jewish Law: Is the Harvard Mouse Kosher?”, 21 AIPLA Q.J. 117 (1993) which reviews many different theories of Jewish patent and copyright law while discussing patented life forms.

91. Indeed, consider the case of a woman who suggested conceiving a child — in order to abort it and obtain fetal-brain tissue to help treat her father, ill with Parkinson’s disease.

92. See note 88.

93. It has been reported to me that such is the position of Meir Lau, the current chief rabbi of Israel, although I have been unable to verify these reports. News reports state that “Israeli Chief Rabbi Meir Lau said the cloning of living creatures is prohibited by Jewish religious law. ‘The use of genetic engineering to create life is totally prohibited,’ the rabbi said during a conference at Tel Aviv’s Bar-Ilan University.” See AFP-EXTEL NEWS LIMITED, AFX News March 5, 1997. However, subsequent reports indicate that the “Chief Rabbinate doesn’t reject genetic engineering in principle, but limits must be set, Chief Rabbis Eliahu Bakshi-Doron and Yisrael Lau told the Knesset Science and Technology Committee at Hechal Shlomo on Monday,” JERUSALEM POST, April 2, 1997, Pg. 3 “News in Brief.”

94. A recent article reported:

Rabbi Moshe Tendler, professor of medical ethics, talmudic law and biology at Yeshiva University in New York, sees other potential good use for human cloning. In theory, the Orthodox scholar might permit cloned children when a husband cannot produce sperm. But he believes that the danger of abusing the science is too great to allow its use.

As a Jew, he lives in the historical shadow of the Nazi eugenics program, in which people with ‘undesirable’ traits were weeded out of society, forbidden to have children and ultimately killed....” The Talmud says that man has to learn to sometimes say to the bee, ‘Neither your honey nor your sting.’ Are we good enough to handle this good technology? Of course we are, if we can set limits on it. And when we can train a generation of children not to murder or steal, we can prepare them not to use this technology to the detriment of mankind.” “Cloning,” PITTSBURGH POST GAZETTE, March 1, 1997 at A1.

95. Robert Langreth, “Cloning Has Fascinating, Disturbing Potential” THE WALL STREET JOURNAL, Monday, February 24, 1997 states that:

In producing the first clone of an adult mammal, researchers plied a seemingly simple technique to achieve what many thought to be impossible. Here’s how it worked:

-- Researchers took mammary-gland cells culled from an adult sheep, put them into a test tube and forced the cells into an inactive state by limiting their intake of nutrients.

-- Next, they took unfertilized eggs from female sheep and mechanically removed the DNA-containing nucleus from each egg.

-- They then used standard lab techniques to insert 277 of the adult DNA cells into 277 eggs.

-- Of these fused egg cells, only 29 survived for a few days and were surgically implanted into the wombs of 13 ewes.

-- One of the 13 sheep became pregnant and gave birth to a lamb that was an exact genetic replica of the adult donor, carrying none of the mother’s genes.

The argument is that 276 fertilized eggs were wasted in the process of producing one live birth.

96. See Breitowitz, *supra* note 40 at pages 69-70.

97. See SANHEDRIN 38a and BERACHOT 58a. Luria also indicates that genetic diversity is part of the divine plan; see his DERECH CHAIM 4 at page 204 and sources cited in note 79.

98. Menachem Elon, JEWISH LAW: HISTORY, SOURCES PRINCIPLES (Philadelphia, 1996) at pages 1103-1204.

99. See “Compelling Tissue Donations”, J. David Bleich, TRADITION 27:4, 59-89 (1993). The rationale for this being that such donations (which are not really donations according to Jewish law, as they can be compelled) are neither statistically harmful nor particularly painful, and thus one who engages in this activity fulfills the biblical obligation not to stand by while their neighbor’s blood is shed. This activity is compulsory activity in the same way one must jump into the water to save one who is drowning, if one knows how to swim and such activity poses no danger.

100. See YEVAMOT 64a; SHULHAN ARUCH Even Haezer 154:6-7 and Yecheil Michel Epstein, ARUCH HASHULHAN Even Haezer 154:52-53.

101. The birth of the child itself is a fulfillment of the mitzvah to be fruitful and multiply, and the donation by the child of bone marrow or blood or other replenishable body serums that can save the life of another — particularly of a parent — is a second good deed.

102. The status of the egg/ovum donor is uncertain in this case, and perhaps would depend on how significant the contribution of mitochondrial DNA is in the development of a person. One could analogize the egg donor to the gestational mother, although most of the indicators of motherhood incline one not to do that. The most fluent analogy would be to the genetic donor (the clonor), but the open scientific question remains as to whether the egg/ovum donor is contributing something significant or not. If the scientific data indicates that the mitochondrial DNA is significant, then logic would analogize the egg donor to the clonor.

103. And the status of the egg/ovum donor as mother; see note 102.

104. And the egg donor as well, if it turns out that mitochondrial DNA is significant. Without clarity as to the facts, a stricter policy concerning incestuous matters would be better.

105. SHULHAN ARUCH Yoreh Deah 242:14.

106. Judah Luria of Prague (*Maharal Me-Prague*), BU’IR HAGOLAH pages 38-39 (Jerusalem 5731). He continues: There are those who are aghast of the interbreeding of two species. Certainly, this is contrary to Torah which God gave the Jews, which prohibits inter-species mixing. Nonetheless, Adam (the First Person) did this. Indeed, the world was created with many species that are prohibited to be eaten. Inter-species breeding was not prohibited because of prohibited sexuality or immorality ... Rather it is because [Jews] should not combine the various species together, as this is the way of Torah. As we already noted, the ways of the Torah, and the [permissible] ways of the world are distinct Just like the donkey has within it to be created [but was not created by God] ... but was left to people to create it. Even those forms of creativity which Jewish law prohibits for Jews, is not definitionally bad. Some are simply prohibited to Jews.

107. GENESIS 1:26. Rabbi Immanuel Jakobovits stated:

We can dismiss the common argument of “playing God” or “interfering with divine providence” [in reference to

cloning]. Every medical intervention represents such interference. In the Jewish tradition this is expressly sanctioned in the biblical words: "And he [an attacker] shall surely cause him [his victim] to be healed" (Exodus 21:19). The Talmud states: "From here we see that the physician is given permission to heal." But such "interference" is permitted only for therapy, not for eugenics -- for correcting nature, not for improving it. Will Cloning Beget Disaster? THE WALL STREET JOURNAL, Friday, May 2, 1997 (1997 WL-WSJ 2419168).



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