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ASSISTED NONCOITAL REPRODUCTION:  
A COMPARATIVE ANALYSIS

George P. Smith, II*

I. INTRODUCTION

An estimated two hundred conception clinics around the United States currently serve two million couples seeking assistance in combatting infertility.¹ These couples expend nearly one billion dollars to arrest their condition. Tragically, the national “take home baby rate” from these clinics is between eleven and fourteen percent.² From this, the question that becomes uppermost in the hearts and minds of many is whether there is a fundamental or international human right to health assistance in biological reproduction. In recognizing or structuring such a right, would the state be obligated to spend any and all reasonable amounts of money in order to validate the procreative rights of all women—regardless of marital status? Consistent with the fundamental constitutional right to life, liberty and the pursuit of happiness, should the state enforce its protective powers vis-a-vis infants at the moment of conception or at some point later in their embryonic development?

In 1983, Sir Harry Gibbs, Chief Justice of Australian High Court, ruled “that a foetus has no right of its own until it is born and has a separate existence from its mother.”³ The common law tied the commencement of life to the time when an unborn first moved in the womb—or, in other words, when it

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² USA Today, Aug. 7, 1989, at 1A, col. 3.


In Canada, Justice Matheson of the Saskatchewan Court of Queen’s Bench held that a fetus is not a person within the meaning of the law. Therefore, it is not within the scope of the term “everyone” as used in the Canadian Charter of Rights and Freedoms which provides that “[e]veryone has the right to life . . . and the right not to be deprived thereof except in accordance with the principles of fundamental justice.” Borowski v. Attorney-General of Canada, 4 D.L.R. 4th 112, 121 (1983) (quoting CAN. CHARTER OF RIGHTS AND FREEDOMS § 7).
quickened. Thus, only after the fetus quickened could its destruction be classified as murder. In the United States, the issue of when individuality is established biologically and when the law should, accordingly, protect such individuals, was determined by the Supreme Court in *Roe v. Wade*. In *Roe*, the Court essentially held that a fetus does not receive the full protection of the law until it is born.

In September 1989, a judge of the Circuit Court for the Fifth Judicial District of Tennessee ruled that life begins at the moment of conception. The court held that seven cryogenically preserved *in vitro* embryos were children, and not personal property. Accordingly, the court placed the embryos in the custodial care of the woman who, during marriage, produced the eggs subsequently fertilized by her then-husband. The only support the court provided for its momentus decision was a reference to the definition of "conception" in Webster's New Collegiate Dictionary. Apparently, the court was unpersuaded by the authoritative texts and treatises relevant to the field. Instead, it relied primarily on the testimony of eight witnesses, particularly that of Dr. Jerome Lajeune, a member of the Faculty of Medicine of the University of Paris and the Pontifical Academy of Science at the Vatican.


5 *Id.* at 21.

6 410 U.S. 113 (1973).

7 It is only when the fetus reaches a "compelling" point of viability or when it "presumably has the capability of meaningful life outside the mother's womb," the state's interest in protecting fetal existence will be asserted. *Id.* at 163-64. It is at the third trimester of development that the state's interest becomes controlling. See King, *The Juridical Status of the Fetus: A Proposal for Legal Protection of the Unborn*, in 1 ETHICAL, LEGAL AND SOCIAL CHALLENGES TO A BRAVE NEW WORLD 110 (G. Smith ed. 1982).

8 Davis v. Davis, No. E-14496, slip op. at 17 (Tenn. Cir. Sept. 21, 1989) (1989 WL 140495)(This case was reversed and remanded by the Tennessee Court of Appeals in September 1990; see infra note 12 and accompanying text.)

The State of Louisiana appears to be the only state that has legislatively determined that:

A viable in vitro fertilized human ovum is a juridical person which shall not be intentionally destroyed by any natural or other juridical person or through the actions of any other such person. An in vitro fertilized human ovum that fails to develop further over a thirty-six hour period except when the embryo is in a state of cryopreservation, is considered non-viable and is not considered a juridical person.


9 *See Davis*, No. E-14496 at 20. *See also* Wash. Post, Sept. 22, 1989, at A13, col. 1 (discussing Judge Young's decision in *Davis* to grant Mrs. Davis custody of the seven "embryo children").

10 *Davis*, No. E-14496 at 17 n.45.

11 *Id.* at 15.
On September 13, 1990, however, the Tennessee Court of Appeals ruled that awarding the seven fertilized ova to the woman would constitute "impermissible state action" by violating the former husband's "constitutionally protected right not to beget a child where no pregnancy has taken place." The court based its opinion on the U.S. Supreme Court recognition that the decision to "bear or beget a child" is one of protected choice by the Constitution.

Consistent also with state law which recognizes legal protections extending only to viable fetuses, the court remanded the case to the trial court directing a new judgment to reflect the Appeals Court decision, granting both parties joint control and an equal voice in the disposition of the ova. The Court thus held that just as it would be repugnant constitutionally to order the woman to implant the fertilized ova against her will, it would be equally repugnant to order her former husband to bear the psychological, if not legal, burdens of forced paternity.

The dilemma of frozen embryos presents no clear course of action for easy resolution. Yet, in the state of Victoria, Australia, alone, there are said to be some two thousand embryos cryogenically preserved. Throughout Australia as many as ten thousand such frozen embryos may exist. Fritze Honduis, the Deputy Director of Legal Affairs of the Council of Europe, has suggested that upwards of twenty thousand embryos are frozen throughout Europe.

The fact that no clear consensus is evolving on even how to begin a dialogue about frozen embryos let alone develop a legal response mechanism to deal with the situation, does not bode well for clarity and direction in this area. Indeed, "the ethical debate is even less focused than the unending rhetorical battle over abortion." Before the legislature and the courts are called upon to develop a definitive framework for principled decision making, objective "hard thinking" is required of the major cross-disciplinary participants in this unfolding drama.

The new reproductive biology promises untold opportunities for resolving heart-breaking problems of infertility and will expand the meaning of "procreational autonomy" for women. It also presents difficult problems for

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14 Davis, C/A No. 180 at 6.
17 Id.
18 Id.
20 Id.
the physician, lawyer, ethicist, theologian and, for that matter, the average person.\textsuperscript{21}

This Article will explore, through comparative analysis, the major issues confronting the use of assisted noncoital reproductive technologies in the United States and abroad. The Article seeks to provide a multi-faceted construct that will promote informed and enlightened decision-making devoid of as much emotion and sentimentality as possible. The evolving—indeed, fluid—parameters of the new reproductive biology defy a single definitive response. This analysis is premised on the belief that medical and scientific interventions that minimize human suffering (genetically or otherwise induced) and maximize quality of life should be pursued. Most always, the untold benefits of noncoital reproduction outweigh the costs attendant with its experimentation and use.

II. THE ETHICS OF IN VITRO FERTILIZATION

Typically, the \textit{in vitro} fertilization (IVF) and embryo transfer processes begins with drug therapy to produce super-ovulation in a woman. Through a procedure called laparoscopy, the resulting eggs are removed from the woman's reproductive tract and then fertilized. An embryo is then implanted in the woman's uterus and, if the implantation is successful, carried to term. The remaining embryos are stored, either for future implantation should the first attempt fail, or for use in scientific or medical experiments. Alternatively, IVF may be used without embryo transfer to produce embryos solely for experimental purposes.

Attention is now drawn to what might be termed as the "ethical morality" of in vitro fertilization, a discussion which explores the benefits and the harms of IVF use.\textsuperscript{22} Ethical complexities attend each of the many variations on the basic IVF theme. For example, when artificial insemination is used to fertilize a married woman's egg with the sperm of a man other than her husband because her husband's sperm is defective, a serious ethical issue is posed. Simi-


larly, ethical issues arise when a third party surrogate carries an embryo to term for a genetic mother or when a single woman seeks to avail herself of IVF procedures. This Article will not probe all of the ethical issues raised by IVF but will instead proceed selectively.

The most obvious benefit of IVF is that it circumvents infertility and allows persons with a strong desire to have children to rear a family. If it is determined conclusively that frozen embryos can be used without damage to resultant children, IVF could enable women who wish to pursue careers to bear children using embryos created some years earlier, thereby reducing their chance of producing a Down's syndrome child. Beyond family expansion, IVF could be used to provide embryos for scientific and medical experiments. Embryos could be used in infertility, genetic and cancer research; as a source of obtaining embryonic tissue used in the treatment of diseases such as diabetes; and to harvest organs for transplant.

There are several major objections to IVF. The first is that separating sex from procreation is inherently wrong. IVF, followed by embryo transfer to the uterus of the married woman, severs the connection between sex and reproduction. The second objection is that IVF is morally wrong because it involves an abnormal risk of harm to the individual subsequently brought into existence. Physical damage or abnormality (although not documented factually) could result from IVF or from the subsequent transfer of the embryo to the woman's womb. Furthermore, psychological harm might inure to an infant born of the total process.

The third objection is that using IVF as a means to produce embryos for experiments or as sources of tissues and organs subjects the embryo to pain. This objection would have considerable merit where experiments were conducted on substantially developed fetuses. When conducting such scientific interventions with embryos in the first several weeks of their development, such embryos probably do not experience pain, owing to the absence of a critical nervous system.23

The fourth objection is that although IVF may not be inherently wrong or wrong because of its effects upon those immediately involved, it may be wrong because of the "slippery slope" to which it is likely to lead. IVF together with embryo transfer may lead to unimpeded use of surrogate mothers as substitutes for genetic mothers; cause the dissolution of the family unit when women who do not wish to marry or have sexual relations with a man use this technique; or even lead to the development of artificial wombs, severing the mother-child connection.24


24 See Test-Tube Babies, supra note 22, chs. 8, 11. See also Harvey, A Brief History of Medical Ethics from the Roman Catholic Perspective, in Catholic Perspectives on Medical Morals at 129 (E. Pellegrino, J. Langan & J. Harvey eds. 1989).
The strongest objection to the IVF process is that the unimplanted embryos will eventually be destroyed, an action morally akin to abortion. When embryos are not implanted in the woman's uterus, they must be used for scientific experimentation, frozen, or destroyed. Generally, anti-abortionists view all scientific experimentation using embryos as morally wrong since it necessarily leads to the embryos' destruction. However, at a recent meeting of The American Society of Human Genetics, a new procedure was revealed which might ease the high tension associated with prenatal genetic testing. This procedure is designed to discover genetic defects in the human egg before fertilization. Although considered promising, this procedure must itself undergo further testing. Once validated, this could well take the "sting" out of some moral objections to experimentation and use of IVF and embryo implants as assaults on the right to life. Indeed, the General Counsel for the National Right to Life expressed his opinion that the test was proper since it did not involve "the taking of innocent human life." The freezing of embryos also poses difficult moral dilemmas. If frozen embryos cannot be thawed successfully, a decision to thaw would lead to the destruction of the embryos. Moreover, even if successful thawing can be accomplished, the decision to experiment, implant, or destroy arises again. Quite clearly, the ethical dilemma involves very real problems. For example, would a woman whose first implantation was successful be required to keep the remaining embryos frozen in perpetuity to avoid their destruction? The only apparent way to resolve the uncertainty about freezing techniques would be to continue with limited experimentation in the field, using lower animal life forms.

A. Religious Overtones

Religious values have historically played an important part in public policy debates. Indeed, the very "bedrock of moral order is religion." "And as morality's foundation is religion, religion and politics are necessarily related. We need religion as a guide; we need it because we are imperfect." Faith and religion have played a dynamic role in the political life of the United States. Today's commitment to democratic pluralism is nurtured and sustained as a consequence of recognizing the inviolability of individual conscience. For some, politics and morality become inseparable. To exclude

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27 Id.
30 Id. at 10. See J. Ellis, American Catholicism 156 (2d ed. 1969); R. Neuhas, The Naked Public Square: Religion and Democracy in America (1984).
31 See Reagan, supra note 28, at 10.
32 See Hyde, supra note 27, at 43.
societal values grounded in a religious base from the public arena would pose a serious threat to the very principle of pluralism. What this commitment to pluralism means, however, is that no definitive posture can ever emerge relative to assisted noncoital reproduction.

III. JUS COGENS AND SOCIAL JUSTICE

_Jus cogens_ ("cogent law") has often been used as a synonym for natural law which draws upon either religious, secular or philosophical sources for its inherent validation. Once an international norm has become _jus cogens_, it is binding upon all states whether or not they have objected in a persistent manner to its development and application. Codified as such, its level of respect and application becomes higher than customary law and, indeed, it becomes a peremptory norm.

Recognized as the most fundamental of all rights, the right to life is considered a peremptory norm of general international law or _jus cogens_. Thus, if an unimplanted extracorporeal embryo created through IVF were recognized as a legal person, it would in turn be recognized further as having a _jus cogens_ right to life and perhaps a right to mandated implantation in a uterus. Similarly, any experimentation on the embryo could only be countenanced if, through a surrogate decision maker, its informed consent were obtained equitably.

_Jus cogens_ norms are constantly evolving to reflect the developing interests of the international community. Do such interests recognize the embryo as a legal person or prohibit its use in the processes of IVF and scientific experimentation as violative of ethical and legal standards of autonomy and distributive justice?

The proofs are still developing in this area. However, there is an unmistakable legislative movement abroad that recognizes the embryo as a respected symbol of life, if not a legally protectable entity, and prohibits its use for contraceptive or scientific purposes. In the United States, all eyes are focused more

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34 Hyde, _supra_ note 27. See also, McCormick, _Pluralism within the Church_ at 147, Dougherty, _One Church, Plural Theologies_ at 169 and Leavitt, _Notes on a Catholic Vision of Pluralism_ in _CATHOLIC PERSPECTIVE ON MEDICAL MORALS_ (E. Pellegrino, J. Langand, J. Harvey eds. 1989).
36 Id. at 418.
37 A. D'AMATO, _THE CONCEPT OF CUSTOM IN INTERNATIONAL LAW_ 132 n.73 (1971).
39 See _infra_ part III.
on the Supreme Court than on the state legislatures to resolve the status of the embryo. If the right to life is recognized as a fundamental human right under national or international law, embryos derived through IVF will be protected against experimentation and may even have a claim for the resources necessary to develop into human individuals.

Beyond the rights of IVF embryos, it can be asserted that women have a right to avail themselves of the new reproductive techniques including artificial insemination, IVF and surrogate mother contracts. Under international law, such a right might be found within the right to health.

As to assisted noncoital reproduction, a central question would be whether a woman has a right to be free of government restrictions on access to the new reproductive techniques. This issue has been explored elsewhere and is beyond the scope of this Article. Suffice it to note that if a standard of social justice were enunciated that recognized this broad right to health as including a co-ordinate right to participate in IVF programs, its full application would still have to be determined, recognizing that reasonable self-discipline is a sine qua non for the effective operation of such a right. In developing such a public health policy, the interests of the whole society must be considered or balanced against those members inconvenienced or "injured" by not being able to conceive children in the normal manner.

If the state disregards the precepts of Social Justice, Usefulness, and Necessity there is danger that its activities may serve the wrong purpose. The State then runs the risk of denigrating into a collective public-service enterprise in which the citizen's demands become subject to galloping inflation and in which encouragement is given to the wishful notion that a comprehensive government health service can and should be provided free of charge.

For those who have called consistently for comprehensive federal legislation in order to deal effectively with the dilemma here, such an effort was undertaken by the European Parliament when it declared life is to be protected from the moment of fertilization. Of course, whether this action will be given

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40 Article 25 of the Universal Declaration of Human Rights, adopted by the U.N. General Assembly on December 10, 1948, states, "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services. . . ." See infra note 54.


44 See infra notes 76-81 and accompanying text.
the full force of law by the members of the European Community remains to be seen.

Under U.S. law, a woman's right to the new reproductive biology may be grounded in the penumbra creating the right to privacy. However, the search for such a right challenges some values upon which other rights have been extended, for example, the cohesiveness of the nuclear family.

If international law is to provide a human right to all reproductive alternatives, not only would municipal laws and customs provide source material, declarations of international organizations would as well. For example, the American Convention on Human Rights, states specifically in chapter II, article 4, paragraph 1, that:

Every person has the right to have his life respected. This right shall be protected by land and, in general, from the moment of conception. No one shall be arbitrarily deprived of his life.

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46 It has been asserted that the right to reproductive technology extends to all women whether married or single. Some have argued against such use pointing out that the cohesiveness of the nuclear family would be jeopardized if not totally ruined. Smith & Iraola, supra note 41, at 281-89; Hafen, The Constitutional Status of Marriage, Kinship, and Sexual Privacy—Balancing the Individual and Social Interests, 81 Mich. L. Rev. 463, 541 (1983).

Since 1888, the Supreme Court has recognized the traditional marriage and the resulting family unit as the bulwark of society. See Maynard v. Hill, 125 U.S. 190, 211 (1888). The Court has sought to protect the institution of marriage, Zablocki v. Hill, 434 U.S. 374, 386 (1978), and to underscore traditional child bearing as the central focus of every family. See Parham v. J.R., 442 U.S. 584 (1979); Wisconsin v. Yoder, 406 U.S. 205 (1972); Pierce v. Society of Sisters, 268 U.S. 510 (1925); Meyer v. Nebraska, 262 U.S 390 (1923).

It is beyond the scope of this Article to explore the depth of these two opposing positions. Suffice it to note that the protection and regulation of marriage as a social institution arguably allows the states considerable latitude in regulating forms of biological or assisted reproduction and enables them to draw legal distinctions between married and unmarried persons. See Califano v. Jobst, 434 U.S. 47, 53 (1977). In drawing lines between the rights of these two groups, it has been recognized that such a classification cannot be made with mathematical precision and invariably "results in some inequality." Dandridge v. Williams, 397 U.S. 471, 485 (1970) (quoting Lindsley v. Natural Carbonic Gas Co., 220 U.S 61, 78 (1911)).


48 American Convention, supra note 47, art. 4.
The European Convention for the Protection of Human Rights and Fundamental Freedoms\(^{49}\) states in section I, article 2, paragraph 1 that "Everyone's right to life shall be protected by law."\(^{50}\) Article 8, paragraph 1 states, "Everyone has the right to respect for his private and family life, his home and his correspondence."\(^{51}\) Finally, article 12 states, "Men and women of marriageable age have the right to marry and to found a family, according to the national laws governing the exercise of this right."\(^{52}\)

The United Nations in particular serves to develop consensus on human rights issues. Respecting and observing human rights as a fundamental freedom is a major goal of the United Nations set out in the U.N. Charter.\(^{53}\) The Universal Declaration of Human Rights,\(^{54}\) adopted in 1948, was viewed as but a "standard of achievement" and not an instrument with legal enforcement provisions.\(^{55}\) The International Covenant on Economic, Social and Cultural Rights\(^{56}\) and the International Covenant on Civil and Political Rights\(^{57}\) (together with its Optional Protocol)\(^{58}\) that became effective in 1976, complement, enhance and strengthen the Declaration so that when taken as a unit of the three instruments have been termed an International Bill of Human Rights.\(^{59}\)

The consensus of nations is essential for U.N. declarations to achieve the status of international law, customary or general. While the United States is a party to the U.N. Charter, it has signed, but not ratified, the International Covenants on Civil and Political Rights and Economic, Social and Cultural Rights. It has not signed the Optional Protocol to the International Convention on Civil and Political Rights.

Interestingly, a recently compiled list of forty-two principal international human rights treaties\(^{60}\) indicates that the United States is a party to thirteen

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\(^{50}\) European Convention, supra note 49, art. 2.

\(^{51}\) Id. art. 8.

\(^{52}\) Id. art. 12.


\(^{58}\) Id. See Mikaelsen, supra note 49, at 9-10.

\(^{59}\) McDougall, Lasswell & Chen, supra note 55, at 180.

\(^{60}\) See INTERNATIONAL HUMAN RIGHTS INSTRUMENTS (R. Lillich ed. 1986).
It could therefore be said that consensus has not yet fully emerged on the definitional boundaries of human rights. However, it has also been said that "in 1789 there was no concept of international human rights" insofar as the framers of the Constitution did not explicitly disclose its existence. Nonetheless, a recent study has found the early history of the United States recognized the essential principle of human rights under the term or concept of "the rights of man." Indeed, the actual use of these precepts has been suggested "with the most major politico-legal developments in the United States over the last two-and-one-half centuries."

Human rights, as a concept, has been recognized by the U.S. Supreme Court since the 1790's. The phrase "human rights" appears in seventy-five of the Court's decisions through 1989—sixty-nine within the last fifty years alone. Among other freedoms, human rights have been associated with "the right to marry," "the right to procreate," the right "to conceive and raise one's children," and "the right to have offspring." The constitutional treatment of noncoital reproduction has important consequences not only for U.S. domestic law, discussed at Section V below, but also for the revelation of norms of international law.

Whether or not international law currently recognizes an individual's right to the new reproductive biology, the right to procreate through artificial methods for all citizens, regardless of marital status and ability to pay, has yet to be determined by national courts and legislatures as a basic right. Recognition of such a right would involve astronomical expense for the state and open up a Pandora's box of other citizen wishes for the state to act upon.

IV. NATIONAL PERSPECTIVES ON ASSISTED NON-COITAL REPRODUCTION

A. The Council of Europe

The Council of Europe Assembly's Recommendation of 1986 on the Use of Human Embryos and Foetuses for Diagnostic, Therapeutic, Scientific, Industrial and Commercial Purposes acknowledged, "that from the moment of fer-
tilization of the ovule, human life develops in a continuous pattern, and that it is not possible to make a clear-cut distinction during the first phases (embryonic) of its development. ... The Recommendation called upon the governments of the Member States to limit the use of human embryos to strictly therapeutic purposes, forbid the creation of human viable embryos by IVF for research purposes, and prohibit the maintenance of embryos in vitro beyond the fourteenth day after fertilization. Subsequently, the Council instructed its competent committees to undertake a report regarding "the use of human embryos and foetuses in scientific research," and to be mindful of "the necessary balance between the principles of freedom of research and of respect for human life and other aspects of human rights." Accordingly, the Committee on Legal Affairs and Citizen's Rights submitted its report calling for a ban on the creation of excess embryos through IVF procedures.

On March 16, 1989, the European Parliament recognized the need "to protect human life from the moment of fertilization," but also noted "the mother's right to self-determination." The Parliament further resolved that:

1.) the number of egg cells fertilized by in vitro fertilization to be limited to the number that can actually be implanted;

2.) a prohibition [be placed] on any form of genetic experimentation on embryos outside the womb;

3.) the storage of frozen embryos should be permitted only if the woman's state of health temporarily prevents her from having the embryo implanted and she has stated that she is willing to have it implanted at a later date. Under no circumstances should a frozen embryo be stored for more than three years. If implantation is out of the question (because of refusal, illness or the death of the woman) the embryos should be taken out of storage and allowed to die. Trading in or experimentation with such embryos should be punishable by law.

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73 D. GieSEN, INTERNATIONAL MALPRACTICE LAW (Recommendation No. 1046) 750, 753, 754 (1988).
74 See id.
75 Id. at 555.
76 EUR. PARL. SESS. DOC. No. A 2-0372/88 (1989). In May 1984, the French National Ethics Committee considered the use of "tissues from embryos or from dead human fetuses for therapeutic, diagnostic, or scientific ends," with transplantation of fetal tissue into patients being advocated only when no other effective alternative existed. Walters, Ethics Issues in Fetal Research: A Look Back and a Look Forward, 36 CLINICAL RESEARCH 209, 211 n.5 (1988).
78 Id. at 172.
79 Id.
80 Id.
81 Id.
4.) that heterologous *in vivo* or *in vitro* insemination is not desirable; this applies to the donation of sperm or egg and frozen storage thereof. . . .

Regardless of whether this resolution safeguards the rights of the unborn or restricts the growth of embryological science, it has no binding enforcement mechanisms for the Member States of the European Community.

**B. Federal Republic of Germany**

The German Legal Profession's Congress on Artificial Reproductive Techniques meeting in Berlin in 1986 resolved that: "Human life begins with the unification of egg and sperm touching off a period of continuous development without qualitatively differentiated stages." Furthermore, the Congress offered its interpretation of the German Constitution that the embryo enjoys full legal protection regardless of whether being created *in vivo* or *in vitro*. The Bundestag declared that the sole aim of creating embryos should be for implantation—and not research. Accordingly, only eggs which are to be used for implantation should be fertilized. In circumstances where the cryopreservation of embryos was undertaken, such actions could be justified only "to avoid their destruction and with a view toward implantation within a certain time limit." If, for any reason implantation of an embryo cannot be achieved, "the embryo is to be left to fate."

In the summer of 1989, the Federal Republic of Germany announced a new legislative agenda regarding embryonic research that would largely prohibit the use of human embryos in biomedical research and impose criminal penalties for violations including imprisonment up to five years. Under this proposed law, only research not harming the embryo will be permitted.

**C. Australia**

Australia's legislative efforts regarding the new reproductive biology were initially undertaken in response to the Rios case. On May 20, 1981, a married couple from Los Angeles, Mario and Elsa Rios, were allowed to participate in

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83 D. Giesen, supra note 73, at 753.
84 Id.
85 Id.
86 Id.
a clinical IVF program in Melbourne, Australia.\textsuperscript{89} Because of his infertility, Mr. Rios consented to the participation of an anonymous donor from Melbourne. Three eggs provided by his wife were successfully artificially inseminated. One embryo was implanted in Mrs. Rios on June 8, 1981, and the other two frozen for subsequent use. The implantation resulted in a miscarriage and the resulting trauma left Mrs. Rios emotionally unfit to participate in another attempt at impregnation. She and her husband died in a plane crash in Chile before another attempt at implantation could be made.\textsuperscript{90} Because Mr. and Mrs. Rios had not executed a will, the California laws of intestate succession allowed Mr. Rios' son by a previous marriage a right to his father's share of the estate and the mother of Mrs. Rios was entitled to take her daughter's share.\textsuperscript{91}

The Victoria state legislature ordered that the remaining Rios' embryos be preserved in their liquid nitrogen container.\textsuperscript{92} As of September 14, 1989, the embryos remained in cryopreservation awaiting the appearance of a volunteer surrogate mother for their thawing and implantation.\textsuperscript{93}

In early 1982, the State of Victoria responded to the Rios case by establishing a committee, headed by Professor Louis Waller, to investigate the problems arising from IVF and donor gametes. Soon after the States of Queensland and Western Australia organized similar governmental inquiries.\textsuperscript{94}

The Waller Report on the Disposition of Embryos Produced by In Vitro Fertilization was released in August 1984 by the Attorney General of the State of Victoria. The Committee recommended that the disposition of stored embryos should not be determined by the hospital where they are stored;\textsuperscript{95} that such embryos do not possess inheritance rights but do possess some legal rights;\textsuperscript{96} and "[i]n cases where by mischance or for any other reason, an embryo is stored which cannot be transferred as planned, and no agreed provision

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\textsuperscript{90} Id. at 23.

\textsuperscript{91} See Cal. Prob. Code Ann. §§ 6401-02 (West Supp. 1989). See also Wallis, Quickening Debate Over Life in Ice, TIME, July 2, 1984, at 46 (discussing the legal and ethical dilemmas surrounding the concept of "embryo rights").

\textsuperscript{92} L.A. Times, Mar. 14, 1989, at 1, col. 2 (discussing the lack of law relating to embryo rights, and various attempts to establish legal and ethical guidelines in relation thereto).

\textsuperscript{93} See Letter from Louis Waller, Chairman of The Law Reform Commission of Victoria, to Prof. George Smith (Sept. 14, 1989) (on file at the offices of the Boston University International Law Journal).

\textsuperscript{94} Scott, Legal Implications and Law Making in Bioethics and Experimental Medicine, 1 J. CONTEMP. HEALTH L. & POL’Y 47, 55-60 (1985). See also Elsa Rios supra note 89, at 22, 25.

\textsuperscript{95} THE COMMITTEE TO CONSIDER THE SOCIAL, ETHICAL AND LEGAL ISSUES ARISING FROM IN VITRO FERTILIZATION, REPORT ON THE DISPOSITION OF EMBRYOS PRODUCED BY IN VITRO FERTILIZATION § 2.16 (1984) [hereinafter WALLER REPORT].

\textsuperscript{96} Id. § 2.19.
has been made at the time of storage . . . the embryos shall be removed from storage.\textsuperscript{97} The Committee also suggested that the government allow embryos to be frozen\textsuperscript{98} for experimental research provided that it was "immediate and in an approved and current project in which the embryo shall not be allowed to develop beyond the state of implantation, which is completed 14 days after fertilization."\textsuperscript{100} Some of the recommendations of the Committee will be incorporated in the Victoria's legislative proposals for subsequent parliamentary consideration, while others will be open to further debate and study.\textsuperscript{100}

In 1982, the National Health and Medical Research Council of Australia developed national ethical guidelines for IVF procedures.\textsuperscript{101} Guideline Seven suggests an upper time limit of ten years for storing embryos provided that the storage would not be extended beyond "the time of conventional reproductive need or competence of the female donor."\textsuperscript{102} Thus, at least at a woman's death the embryos left in cryopreservation could be destroyed. The Council endorsed several scientific procedures to correct infertility among married couples including IVF,\textsuperscript{103} the use of donor eggs to produce embryos,\textsuperscript{104} and the use of artificial insemination by anonymous male donors.\textsuperscript{105}

With the passage of the Infertility (Medical Procedures) Act in 1984, the Victorian Parliament became the world's first legislative body to enact regulations governing IVF and embryo experimentation.\textsuperscript{106} The Infertility Act was not, however, fully "proclaimed" as effective legislation until July 1, 1988.\textsuperscript{107} The Infertility Act neglects to define such critical words as "embryo" and "fertilization" and omits a declaration of when a genetically unique human individual comes into existence.\textsuperscript{108} Thus it still remains an open question as to precisely when life begins. Nevertheless, the law provides for imprisonment of individuals who fertilize a woman's eggs removed from her body for purposes

\textsuperscript{97} Id. § 2.18.
\textsuperscript{98} Id. §§ 3.25-3.28.
\textsuperscript{99} Id. § 3.29.
\textsuperscript{100} See Sydney Morning Herald, Sept. 4, at 3, col. 2 (discussing the State of Victoria's ban on payments to surrogate mothers).
\textsuperscript{101} See National Health and Medical Research Council, Report of the NH & MRC Committee on Ethics in Medical Research Involving the Human Fetus and Human Fetal Tissue (1983).
\textsuperscript{102} Id. at 36.
\textsuperscript{103} See id. at 35.
\textsuperscript{104} Id. at 35-36.
\textsuperscript{105} Id. at 35.
\textsuperscript{107} Kuhse, supra note 106, at 334.
\textsuperscript{108} Buckle, Dawson & Singer, supra note 106, at 174.
other than those associated with an implantation of the resulting embryo in a specific woman's uterus.

The law seeks to clearly distinguish between using excess embryos and creating embryos for research purposes. While producing embryos for research purposes is prohibited, an eight member Standing Review and Advisory Committee on Infertility has been empaneled to evaluate proposals made for subsequent research on excess embryos. Currently, the law severely restricts research into the problems of infertility.

Drawing a distinction between research undertaken on embryos created for the express purpose of research study and research on “excess” embryos produces an odd result. The law prohibits medical researchers to test the safety of reproductive techniques before application in a clinical setting. However, researchers can proceed with new and untested reproductive procedures that could well lead to the birth of abnormal children.

Anomalously, the law allows experimentation on excess embryos to the fourteenth day of their creation. Accordingly, “if the point at which a human life begins were relevant to the permissibility of destroying it, this would mean that a human life does not begin until day 14. Why, then, the requirement to halt experimentation on specially created embryos before syngamy occurs?”

For the scientist, fertilization is a complex process lasting for some twenty-four hours—beginning with the incorporation of the sperm into the egg. The process continues with the egg completing maturation and the genetic material of each condensing into chromosomes. The male and female contributions then come together to form a new genotype:

This new formation of the new genotype is syngamy; and, because the union of the two gametes does not seem to be complete before syngamy has occurred, the proper scientific use of the term “fertilization” includes the entire process which begins with the sperm passing through the zona pellucida and comes to completion at syngamy.

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109 Khuse, supra note 106, at 334.
110 Id. An excess embryo is defined as one that “has been created with the intention of implanting it, but which has subsequently become surplus” possibly because “more eggs were successfully fertilized than could be implanted.” Id.
111 Id.
112 Id. at 335.
113 See id. at 336. This distinction was considered irrelevant by the British Warnock Committee.
114 Kuhse, supra note 106, at 336.
115 Id.
116 Id. at 341.
117 Id.
118 Buckle, Dawson & Singer, supra note 106, at 179.
119 Id. at 175.
The argument for and against syngamy as an indication of when life begins will continue. The significance of this argument is to be found in appreciating the difficulty in discovering a clear or "marker event" in a seemingly continuous biological process.

Those who champion the inviolability of human life from the moment of fertilization have often said that this is the only clear and non-arbitrary dividing line—from that moment on, the human individual exists and grows in a gradual manner from embryo to adult. The electron-microscope has shown that fertilization itself is not an event, but a process, and it is not clear that there is a non-arbitrary way of saying at just what point in this (or any of the subsequent development processes) a human individual begins to exist.

Regardless of how the debate is resolved, the Victoria law will still provide different treatment regarding research on embryos depending upon the intent underlying their creation. The problem for all future legislative schemes is the very validity of their design and implementation and, whether, once in place, they should remain as "bright lines" or serve as fluid and flexible "guidelines" for decision making. If some type of legislative direction is not taken, however, the courts will necessarily fill the vacuum as the ultimate decisionmakers.

D. Great Britain

In 1982, four years after the birth of Louise Brown, the world's first test-tube baby, the British government constituted a Committee of Inquiry into Human Fertilization and Embryology. The Committee, chaired by Dame Mary Warnock, was directed to examine the social, ethical, and legal implications of the new reproductive biology. The Committee submitted its report in July 1984, and great debate and discussion has followed.

In essence, the Warnock Committee approved the cryopreservation of embryos but only under strict constraints and subject to review by a statutory licensing authority. The Committee recognized that even though embryos enjoyed an ethical or moral ("special") status, embryonic research could continue, subject to careful monitoring, for a fourteen day period after fertilization. Moreover, excess embryos could be proper subjects for research within this time period if informed consent to such actions is obtained from the

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120 See id. at 176.
121 Kuhse, supra note 106, at 342.
122 Id.
125 Priest, supra note 124, at 75-78. See also The Warnock Committee, 289 BRIT. MED. J. 238 (1984).
126 See Priest, supra note 124, at 77.
couple generating the embryo. The Committee also recommended that legislation be enacted to allow research on any embryonic life derived from IVF whether or not the embryo was intentionally developed for research. The report does not detail the extent to which experiments on embryos may be undertaken. If they involve inserting sharp instruments into the embryo, stronger opposition would obviously be voiced than if mere microscopic observation of embryonic development were charted. The Committee suggested that ten years be the maximum allowable time for storage (with the right of disposal passing to the storage authority after that time period).

Regarding rights of inheritance, the Committee proposed legislation to eliminate the dilemma of Australia's "orphan" embryos. The proposed legislation provides that any child born of an IVF procedure that had used an embryo either frozen or stored, "who was not in utero at the death of the father shall be disregarded for the purposes of succession to the inheritance from the latter."

Concerning the use of surrogate mothers, the Committee proposed legislation that would impose a criminal sanction for the maintenance of surrogate mother agencies, but the Committee simultaneously suggested that those

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127 Id.
128 Id.
129 See Lee, Re-Reading Warnock in RIGHTS AND WRONGS IN MEDICINE at 37-52, 43 (P. Byrne ed. 1986). See Goodhart, Embryo Experiments, 297 BRIT. MED. J. (1988). The British Medical Association supports the following recommendations:
1. Tissue may be obtained only from dead fetuses resulting from therapeutic or spontaneous abortion. Death of the fetus is defined as an irreversible loss of function of the organism as a whole.
2. UK laws on transplantation must be followed. The woman from whom the fetal material is obtained must consent to the use of the fetal material for research and/or therapeutic purposes.
3. Transplantation activity must not interfere with the method of performing abortions, nor the timing of abortions, nor influence the routine abortion procedure of the hospital in any way. Abortion must be performed subject to the Abortion Act, and any subsequent amendments thereof, uninfluenced by the fate of the fetal tissue. The anonymity of the donor should be maintained.
4. The generation or termination of a pregnancy solely to produce suitable material is unethical. There should be no link between the donor and the recipient.
5. There must be no financial reward for the donation of fetal material or a fetus.
6. Nervous tissue may be used only as isolated neurones or tissue fragments for transplantation. Other fetal organs may be used as either complete or partial organs for transplantation.
7. All hospital staff directly involved in the procedures—including the abortion—must be informed about the procedures involved.
8. Every project involving transplantation of fetal tissue must be approved by the local ethical research committee.


130 Priest, supra note 124.
131 Id.
individuals entering into private surrogation arrangements, in connection with IVF and embryo transfer procedures be exempted from criminal prosecution.\textsuperscript{132}

The Embryo Bill pending in the British House of Lords is expected to tackle the issue of whether or not scientific research may be conducted on embryos. Notably, the bill would give fathers a right to veto decisions made by the mothers regarding the disposition of frozen embryos which they had fertilized.\textsuperscript{133} Lord Trafford, a physician and a health minister, who introduced the Embryo Bill, had originally hoped to separate the issues of abortion and the status of embryos. However, opponents of abortion could argue that if a man has veto powers over the use of embryos which he has fertilized, arguably, he should be allowed to exercise the same right to prevent his wife or companion from having an abortion. One parliamentarian opined that, “Every pro-life group will ask why should the father have rights over a 14-day embryo, but not a 14-week-old foetus.”\textsuperscript{134}

It remains to be seen whether this initial legislative foray into supplementing the initial Warnock recommendations will provide the much needed framework for legal-medical-social decision making in this field or be merely an additional obfuscation.\textsuperscript{135}

\section*{V. Regulation in the United States}

The extent to which U.S. states may validly regulate IVF procedures and embryo transfers depends upon whether these acts are viewed as fundamental rights. Thus, the threshold question is whether they are “rights” guaranteed by the Constitution as part of the “right to marital privacy.”\textsuperscript{136}

Various Supreme Court decisions seem to grant “the right . . . to marry, establish a home and bring up children” as among those liberties granted by

\textsuperscript{132} Id.

\textsuperscript{133} In September 1989, the Embryo Bill was proposed to allow “[e]stranged husbands or unmarried fathers . . . a veto over what happens to the frozen embryos they have fertilized . . . .” The Times (London), Sept. 4, 1989, at 3, col. 1. The debate over the bill was heated and emotional, but despite strong opposition, the House of Lords in February 1990, defeated attempts to stop IVF research. The Times (London), Feb. 9, 1990, at 9, col. 1. On April 24, 1990, the BBC reported that the British Parliament voted to allow IVF research on embryos up to 14-days-old. BBC News About Britain, Apr. 24, 1990 [on file at the offices of the Boston University International Law Journal].

\textsuperscript{134} The Times (London), Sept. 4, 1989, at 3, col. 1.


the fourteenth amendment. Based upon these cases, it could be argued that any state regulation on IVF and embryo transfers would be an intrusion upon the fundamental right to marital privacy. "If the decision to beget a child is a protected area of privacy, presumably the actual method of begetting also would be protected. Thus, any statute affecting this delicate area would have to serve a compelling state interest and must do so by the least restrictive means."

A more conservative analysis of the Supreme Court decisions in this area recognizes, at the threshold, that the right to privacy is not explicitly mentioned in the United States Constitution. No right of sexual freedom is found within the gambit of procreative rights recognized by the Supreme Court nor has the Court fashioned a general right of personal privacy which is sufficiently broad-based to encompass sex outside marriage.

A. Legislative Positions Among the States

It is doubtful that Congress could ever enact effective legislation on the legal status of an embryo because society is not of a singular mind. Nor is there a consensus as to when "life" should be legally protected. Judicial interpretation of this issue has aroused national debate with the decision in Roe v. Wade. Despite the lack of agreement regarding when life begins, those children born of an IVF procedure using either a donor ova or donor sperm should be recognized as children of the family in which they were born. No issue of illegitimacy should be raised nor should the donors be held to any level of financial support of the child. Similarly, the child should have no right of inheritance against the donors. The best interests of the IVF child are served, and, more importantly, the strength of the family unit is enhanced and its stability assured.

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138 Lorio, supra note 136, at 1007-8.

139 Id.


141 Roe, 410 U.S. 113.

After Roe, some twenty-five states enacted fetal research laws designed primarily to control research on aborted fetuses. Several statutes extend their protective coverage to research on embryos. If cumbersome safeguards


See Vetri, Reproductive Technologies and United States Law, 37 Int'l Comp. L.Q. 505, 520 (1988).

145 Examples are the California and Minnesota statutes. The California statute provides:

(a) It is unlawful for any person to use any aborted product of human conception, other than fetal remains, for any type of scientific or laboratory research or for any other kind of experimentation or study, except to protect or preserve the life and health of the fetus. "Fetal remains," as used in this section, means a lifeless product of conception regardless of the duration of pregnancy. A fetus shall not be deemed to be lifeless for the purposes of this section, unless there is an absence of a discernible heartbeat.


The Minnesota statute provides:

1. Whoever uses or permits the use of a living human conceptus for any type of scientific, laboratory research or other experimentation except to protect the life or health of the conceptus, or except as herein provided, shall be guilty of a gross misdemeanor.

2. The use of a living human conceptus for research or experimentation which verifiable scientific evidence has shown to be harmless to the conceptus shall be permitted.

3. Whoever buys or sells a living human conceptus or nonrenewable organ of the body is guilty of a gross misdemeanor. Nothing in this subdivision prohibits (1) the buying and selling of a cell culture line or lines taken from a nonliving
effecting excess embryo preservation are required, the initiation of medical-scientific programs utilizing IVF procedures could be discouraged. Moreover, in a number of these states, the very legality of IVF as a medical procedure to overcome infertility is in question.

Only Pennsylvania and Louisiana have statutes regarding IVF. Pennsylvania's law simply monitors IVF by requiring anyone conducting the proce-

human conceptus; (2) payments for reasonable expenses associated with the removal, storage, and transportation of a human organ, including payments made to or on behalf of a living organ donor for actual expenses such as medical costs, lost income, or travel expenses that are incurred as a direct result of a donation of the nonrenewable organ; or (3) Financial assistance payments provided under insurance and medicare reimbursement programs.


Michigan statutes, for example, prohibit research on a live embryo if its life or health may be jeopardized. Thus, § 333-2685 provides that:

(1) A person shall not use a live embryo, fetus, or neonate for nontherapeutic research if, in the best judgment of the person conducting the research, based upon the available knowledge or information at the approximate time of the research, the research substantially jeopardizes the life or health of the embryo, fetus, or neonate. Nontherapeutic research shall not in any case be performed on an embryo or fetus known by the person conducting the research to be the subject of a planned abortion being performed for any purpose other than to protect the life of the mother.

(2) For purposes of subsection (1) the embryo or fetus shall be conclusively presumed not to be the subject of a planned abortion if the mother signed a written statement at the time of research, that she was not planning an abortion (Mich. Comp. Laws Ann. § 333.2685) (West 1989) § 333.2686. Sections 2685 to 2691 shall not prohibit or regulate diagnostic, assessment, or treatment procedures, the purpose of which is to determine the life or status or improve the health of the embryo, fetus, or neonate involved or the mother involved. § 14.15 (2692) Sec. 2692. As used in sections 2685 to 2691, “nontherapeutic research” means scientific or laboratory research, or other kind of experimentation or investigation not designed to improve the health of the research subject.


La. Civ. Code Ann. arts. 129, 130 (West 1990). The U.S. Court of Appeals for the Fifth Circuit in Margaret S. v. Edwards, 794 F.2d 994 (5th Cir. 1986), examined the constitutionality of a Louisiana statute that provided, “no person shall experiment on an unborn child or a child born as the result of an abortion, whether the unborn child or child is alive or dead, unless the experimentation is therapeutic to the unborn child or child.” La. Rev. Stat. Ann. § 40.1299.35.13. The court held the statute unconstitutionally vague, because the distinction between experimentation and testing, or between research and practice, is virtually meaningless. Id. at 999.
dure to file quarterly reports with the state Department of Health fully describing the processes involved. In 1986, the Louisiana legislature decreed that, "[a] viable in vitro fertilized ovum is a juridical person" that cannot be destroyed and furthermore—that such an ovum "cannot be owned by the in vitro fertilization patients who owe it a high duty of care and prudent administration." If a renunciation of parental rights by the IVF patients occurs, the "ovum shall be available for adoptive implantation. . . ." Sadly, no other state statutes clarify the legal status of IVF children.

Illinois had a statute which prohibited selling or experimenting upon a "fetus produced by the fertilization of a human ovum by a human sperm unless such experimentation is therapeutic to the fetus thereby produced." However, the statute was recently struck down as unconstitutionally vague and restrictive of women's fundamental right to privacy.

B. U.S. Government's Position

The U.S. Department of Health and Human Services (HSS) has the responsibility for regulating human subjects involved in research conducted or funded by HSS or other federal agencies, including research and development relating to IVF. The HSS Ethics Advisory Board reviews every proposal concerning research projects involving fetuses or pregnant women. The Board examines the research projects' "acceptability from an ethical standpoint." HSS regulations specifically protect fetuses that are the subject of proposed experimentation and IVF research.

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150 See 18 PA. STAT. ANN. § 3212(e) (Purdon 1983).
151 See LA. REV. STAT. Civil Code, § 129 (1986).
152 See id. § 130.
153 Id.
154 See Andrews, supra note 147.
155 See ILL. ANN. STAT. ch. 38, para. 81-26(7) (Smith-Hurd 1989).
157 The only other decision involving an in-vitro fertilization procedure was an unpublished case, Del Zio v. Manhattan's Columbia Presbyterian Medical Center, No. 74-3588 (S.D.N.Y., filed April 12, 1978), which resulted in an award of $50,000 damages to the prospective parents for emotional distress caused by the willful destruction of an embryo produced by IVF. The Chief of Obstetrics and Gynecology had removed the embryo and destroyed it, stating that the physician who had performed the laparoscopy and subsequent fertilization in 1972 lacked the necessary skills, and moreover, the hospital's committee on experimentation had not yet approved IVF. See Lorio, In Vitro Fertilization and Embryo Transfer: Fertile Areas for Litigation, 35 Sw. L.J. 973, 996-97 (1982).
159 Id. § 46.204(d) (1989). See also id. § 46.205 (1989).
160 Id. §§ 46.101-.211 (1985). In vitro fertilization is defined as "any fertilization of human ova which occurs outside the body of a female, either through admixture of donor human sperm and ova or by another means." Id. § 46.203(g) (1989).
Although limited to research efforts funded in whole or in part by the federal government,\textsuperscript{160} these guidelines make a significant distinction with regard to potential legal rights of unimplanted embryos.\textsuperscript{161} The distinction is apparent in the definition of "fetus"—"the product of conception from the time of implantation (as evidenced by any of the presumptive signs of pregnancy, such as missed menses, or a medically acceptable pregnancy test). . . ."\textsuperscript{162}

As a consequence of this structured definition, research undertaken on fetuses in utero and ex utero is prohibited unless the purpose of the activity is either to meet the particular health needs of an at-risk fetus or to obtain biomedical knowledge not otherwise obtainable, but then only if the harm posed to the fetus is minimal.\textsuperscript{163} Research undertaken on non-viable fetuses ex utero is prohibited unless vital functions are not maintained artificially, experimental activities that would terminate vital functions are not used, or the research purpose is to obtain otherwise unobtainable significant biomedical knowledge.\textsuperscript{164} The effect of these restrictions on embryonic and fetal research is that the scientific pursuit of knowledge is significantly handicapped. Because of this de facto moratorium, no federally funded research on IVF has been undertaken since 1975.\textsuperscript{165} Private research into the mysteries and the opportunities of the new reproductive biology continues.\textsuperscript{166} But without a balanced regulatory scheme and sources for federal research funding, the initiative and the momentum for scientific advancement is curtailed.

Both as a response to Louise Brown's extracorporeal birth in 1978 and to a grant application for IVF research, HSS and its Ethics Advisory Board decided to study the complex ethical, legal, social and scientific issues raised by IVF and embryo transfer.\textsuperscript{167} Their report concluded that federal support of research on human IVF, in order to establish both the safety and the effectiveness of IVF procedures, would be ethically permissible so long as certain conditions were met.\textsuperscript{168} The report was ultimately "buried in the bureaucracy."\textsuperscript{169}

\textsuperscript{160} Id. § 46.101(a) (1989).
\textsuperscript{161} Blumberg, supra note 147.
\textsuperscript{162} 45 C.F.R. § 46.203(c) (1989).
\textsuperscript{163} Id. §§ 46.208(a)(1)-(2) (1989).
\textsuperscript{164} Id. §§ 46.209(b)(1)-(3) (1989).
\textsuperscript{165} See also Abramowitz, A Stalemate on Test-Tube Baby Research, 14 Hastings Center Rept. 5 (1984).
\textsuperscript{166} See infra note 172.
\textsuperscript{168} See id. at 35,057. Among these conditions were that the in vitro embryo (blastocyst) be sustained no longer than the implantation stage and that IVF be used only by married couples who had donated their sperm and ova. See also Abramowitz, supra note 165, at 5.
Yet, due largely to the leadership of then-Congressman Albert Gore of Tennessee, hearings were conducted in August, 1984, on the very issue of embryo transfers and the legal, ethical and medical responses to such procedures.\textsuperscript{170} Although no firm or conclusive steps were taken as a result of these hearings, the hearings served to focus attention on the need for continuing dialogue in this area.

Given the oftentimes strident anti-abortion mood of a vocal segment of society, strong positive movement will probably not occur at the federal regulatory level.\textsuperscript{171} Indeed, on November 2, 1989, the Bush Administration extended the prohibition on support for research involving fetal tissue transplants from induced abortions.\textsuperscript{172} The principal reason for such action was that the positive health benefits generated by this research were outweighed by the accompanying complex moral and ethical problems.\textsuperscript{173} Dr. Louis W. Sullivan, Secretary of HSS, stated that permitting human fetal research “will increase the incidence of abortion across the country.”\textsuperscript{174} What is once again evident is the inextricable relationship between abortion and fetal research and experimentation and, even more importantly, the almost inextricable relationship between politics and morality.

C. The Impact and the Promise of Webster v. Reproductive Health Services

In tackling “the most politically divisive domestic legal issue of our time,”\textsuperscript{175} the Supreme Court, on July 3, 1989, upheld the validity of a Missouri statute which significantly restricts a woman’s right to obtain an abortion.\textsuperscript{176} The pre-

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\begin{footnotesize}
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\item Krause, \textit{Artificial Conception: Legislative Approaches}, 19 FAM. L.Q. 185, 190 (1985).
\item This pessimistic, although realistic, view is tied to a perception that it would be far better to hold in abeyance any strong movement at this time for fear of its possible linkage with the right-to-life controversies and would thus give rise to the real possibility that it would never be evaluated in a calmer atmosphere. Abramowitz, \textit{supra} note 165.
\item Department of Health and Human Services, HHS News (Nov. 2, 1989) (discussing the continuation of a limited moratorium on federal funding of research on human fetal tissue transplants; statement by Louis W. Sullivan, M.D., Secretary of Health and Human Services) (on file at the \textit{Boston University International Law Journal}).
\item See \textit{Wash. Post}, Nov. 3, 1989, at A5, col. 1 (discussing the ban on federal research on fetal-tissue due to ethical and moral issues).
\item Id.\textsuperscript{177}
\item Polls show 70\% of Americans believe that abortion should be a decision for women to make alone. Yet more than 50\% also think the act to be inherently wrong. According to a Los Angeles Times poll, 47\% approved of the Supreme Court’s decision in \textit{Webster}, 40\% disapproved, and 13\% were not certain. Cassidy, \textit{U.S. Abortion Ruling Divides a Nation}, The Sunday Times (London), July 9, 1989, at C4, col. 1.
\end{enumerate}
\end{footnotesize}
amble to the challenged statute declares human life to begin at conception—defined conception as "the fertilization of the ovum of a female by a sperm of a male"—in disregard of standard medical tests which equate conception with uterine implantation occurring about six days after fertilization. Thus the statute not only sought impliedly to regulate pre-viable abortions, but common forms of contraception such as the IUD and the morning-after-pill as well. Yet a majority of the Court held the preamble did not actually regulate abortion and therefore the scope of its application would have to await testing until a concrete example restricting the appellees' activities was shown. The majority of the court refused "[t]o decide . . . abstract propositions." It is beyond the purpose of this Article to probe the permutations and interstices of Webster. Suffice it to note that Webster strongly indicates that a clear majority of the Justices are willing to depart from Roe v. Wade and thereby curb, if not abolish, the constitutional right of a woman to have an abortion.

What is relevant to the present analysis is Justice Stevens' opinion in Webster concurring in part and dissenting in part. Stevens would find the Missouri statute violated the establishment clause because of the legislative ("theological") finding in the statute's preamble that endorses the state interest in preserving the life of an embryo during the first forty or eighty days of pregnancy to be at the same level of protection and scrutiny as after viability. Justice Stevens would also invalidate the statute because it violates the right of

177 Webster, 109 S. Ct. at 3047.
178 Id.
179 Id.
180 Id. at 3050. Reproductive Health Service, which brought the action against the Missouri Attorney General, will not be affected by the Webster decision because it is a private facility. Since such privately operated clinics perform 87% of all abortions, Webster will have little impact. If a clinic is, however, on public land, Webster would apply. Cassidy, supra note 176. See also American Survey: The Fearful Politics of Abortion, THE ECONOMIST, July 8, 1989, at 31.
181 Webster, 109 S. Ct. at 3050. The majority further held that Missouri's prohibition on use of public facilities as well as the use of public employees in the performance of abortions was wholly consistent with the position the Court had established by its prior rulings. Id. (citing Tyler v. Judges of Court of Registration, 179 U.S. 405, 409 (1900)).

The viability testing provision of the statute requires physicians to determine fetal viability if the pregnant woman is more than twenty weeks pregnant. If deemed viable, the fetus may not be aborted unless its mother's life is in danger. The majority held that this provision was consistent with the exercise of a physician's professional judgment and complimentary to the state's interest in protecting human life. Id. at 3055.

A simple ultrasound examination can determine gestational age, fetal weight and fetal lung maturity which in turn allows a physician to determine whether a fetus is viable. Smith, Frey & Johnson, Assessing Gestational Age, 33 AM. FAM. PHYSICIANS 215, 219-20 (1986).
182 Webster, 109 S. Ct. at 3079-85.
183 Id. at 3081.
contraceptive privacy set forth in *Griswold v. Connecticut*. Before reaching this conclusion, however, he develops a thoughtful inquiry into the issue of male versus female ensoulment articulated in the early writings of St. Thomas Aquinas which have been accepted by the Roman Catholic Church. Justice Stevens quotes extensively from a *Report on Catholic Teaching on Abortion* prepared by the Congressional Research Service of the Library of Congress.

The disagreement over the status of the unformed as against the formed fetus was crucial for the Christian teaching on the soul. It was widely held that the soul was not present until the formation of the fetus 40 or 80 days after conception, for males and females respectively. Thus, abortion of the 'unformed' or 'inanimate' fetus (from *anima*, soul) was something less than true homicide, rather a form of anticipatory or quasi-homicide. This view received its definitive treatment in St. Thomas Aquinas and became for a time the dominant interpretation in the Latin Church.

For St. Thomas, as for the medieval Christendom generally, there is a lapse of time—approximately 40 to 80 days—after conception and before the soul's infusion. ...

For St. Thomas, 'seed and what is not seed is determined by sensation and movement.' What is destroyed in abortion of the unformed fetus is seed, not man. This distinction received its most careful analysis in St. Thomas. It was the general belief of Christendom, reflected, for example, in the Council of Trent (1545-1563), which restricted penalties for homicide to abortion of an animated fetus only.

What Justice Stevens concludes after analyzing the Aquinas position is most important to a sophisticated understanding of the complex medico-legal-ethical issue of the scope of protection the state should or may extend to research and experimentation of extracorporeal embryos. He states eloquently:

> As a secular matter, there is an obvious difference between the state interest in protecting the freshly fertilized egg and the state interest in protecting a 9-month-gestated, fully sentient fetus on the eve of birth. *There can be no interest in protecting the newly fertilized egg from physical pain or mental anguish, because the capacity for such suffering does not yet exist; respecting a developed fetus, however, that interest is valid.* In fact, if one prescinds the theological concept of ensoulment—or one accepts St. Thomas Aquinas' view that ensoulment does not occur for at least 40 days, a *State has no greater secular interest in protecting the potential life of a sperm or an unfertilized ovum.*

The logic of this position is quite compelling and provides much weight to the position that while the embryo does not theologically have an independent moral status, it is regarded by some as worthy of respect as a "symbol of

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184 381 U.S. 479 (1965).
185 *Webster*, 109 S. Ct. 3083.
186 *Id.* (emphasis added).
life."187 While the embryo might well be treated as “an object of respect,” it arguably does not—consistent with this position—gain any type of moral status or recognition until transferred to a uterus.188 Accordingly, when no transfer occurs, vexatious decisions concerning unused or stored embryos “become occasions to use embryos as a symbol of life or persons generally” are presented.189 What then must be evaluated is whether the need for preserving such symbols outweighs “the costs to autonomy or future knowledge that symbol-making necessarily involves.”190

Justice O’Connor, in concurring in part and concurring in the judgment, addressed the concern that the preamble to the challenged statute might prohibit the development and use of IVF by dismissing them as “intimations of unconstitutionality” that were “simply too hypothetical” to address.191 Regarding the challenge that the statute is violative of Griswold, she found nothing in the preamble that would affect a woman’s right to practice acts of contraception.192

Justice O’Connor stressed that, as to the state’s interest in protecting potential life, the point of viability was the crucial determination when such interest could be focused by the enactment of regulations designed to achieve that end.193 “No decision of this Court has held that the State may not directly promote its interest in potential life when viability may differ with each pregnancy.”194 Its “possibility” can thus be determined within a period of testing—as for example here with Missouri’s twenty week period (that was essentially a presumption of viability at twenty weeks—subject to medical rebuttal).195 As more advanced medical technologies develop, the testing period may commence earlier. Yet, even with an earlier time frame for testing viability, it is well known that fetal lungs do not mature until some thirty-three to thirty-four weeks of gestation.196 The physician is also aided in the

189 Id.
189 Id. at 60.
191 Webster, 109 S. Ct. at 3059.
191 Id.
192 Id. at 3062 (citing Thornburgh v. American College of Obstetricians & Gynecologists, 476 U.S. 747 (1986)).
194 Id.
195 Id at 3061.
196 Webster, 109 S. Ct. at 3063.
determination of viability by ultra sound examinations that determine gesta-
tional age and fetal weight, as well as fetal lung maturity.\textsuperscript{197}

The full Court chose not to address the validity of the statute’s preamble
that recognized life as beginning with human conception. However, the argu-
ments made by Justices Stevens and O’Connor regarding viability and the
tone of the other opinions in the case persuasively show that legal protection of
personhood under present accepted biological and medical knowledge ought
not be extended to unimplanted, extracorporeal embryos. When implanted, as
with normal conception, the embryo must develop into a \textit{viable} fetus before
full state protections will be accorded to it.\textsuperscript{198}

\section{VI. Conclusion}

In exploring the noncoital reproductive sciences, a balance should be struck
between the unfettered use of science for individual satisfaction and the pro-
motion and maintenance of the social good. Thus, embryo research and experimen-
tation which contributes to the goal of minimizing human suffering and
maximizing the social good deriving therefrom must be pursued in a reasona-
ble manner. So long as the central driving force in marital relationships con-
tinues to be procreation and the family unit remains at the core of a progres-
sive society, efforts will be pursued which seek to expand the period of
fecundity, combat infertility and assure that inherited genetic deficiencies are
not passed on to future generations. Genetic experimentation and planning, in
conjunction with eugenic programming, are more rational and humane than
alternatives to population regulation through death, famine and war or an ab-
dication of genetic autonomy to the countervailing doctrines of gene sover-
eignty and biological determinism.\textsuperscript{199}

Socially responsible scientific inquiry should be restrained only when the
scientist “is clearly able to foresee that the particular line of work is leading to
a kind and scale of dangers” that would constitute a “limitation;” or, in other

\textsuperscript{197} \textit{Id.} Chief Justice Rehnquist noted that the \textit{Webster} District Court found uncon-
tradicted medical evidence that a 20-week-old-fetus was not viable, and furthermore,
that the earliest point in pregnancy where a reasonable possibility of viability exists was
between 23 ½ to 24 weeks of gestation. \textit{Webster}, 109 S. Ct. at 3055. However, the
district court also recognized that there was a four week margin of error in determining
gestational age, thus giving support for the commencement of testing at 20 weeks. 662

In \textit{Roe}, which is still controlling, the Court acknowledged that viability was “usually
placed” at or around seven months (or twenty eight weeks), but on occasion may occur
as early as twenty-four weeks.

\textsuperscript{198} See generally Smith, \textit{Intimations of Life: Extracorporeality and The Law}, 21

\textsuperscript{199} Smith, \textit{The Province and Function of Law, Science and Medicine: Leeways of
words, presents "dangers of cataclysmic physical or psychological proportions for mankind as a whole."^200

While some would view research and experimentation in human embryology and reproductive biology as promoting a genetic disaster or cataclysm, the better view is that such work advances the goal of minimizing human suffering and maximizing the quality of purposeful and meaningful existence free of inherited genetic disabilities.\(^{201}\) Certain aspects of the new human reproductive biology (e.g., cloning) might well require greater degrees of reasonable self-restraint. By and large, however, the nature and degree to which restraint is mandated must be determined by the individual scientist.

Preemption of scientific work in human reproductive biology by the state is short-sighted and repressive of the principle of free scientific inquiry.\(^{202}\) Instead of developing a scientific regulatory scheme relying on legislative prohibition, rule-making committees within the pertinent medical and scientific profession should be established to monitor and control scientific inquiry. Perhaps the best model would be a simple organization approached easily on a consultative and advisory basis and designed to assist biologist, scientist and medical researchers make their own decisions.\(^{203}\)

Included in the Health Research Extension Act of 1985\(^{204}\) were provisions to create a Biomedical Ethics Board and a Biomedical Ethics Advisory Committee to report on human genetic engineering and on the federal rules on human fetal research.\(^{205}\) If totally funded, the Committee will also study the ethical, social, and legal implications of human genome mapping, genetic testing, eugenics and gene therapy.\(^{206}\) These bodies would perhaps provide some continuity with the now defunct President's Commission for The Study of Ethical Problems in Medicine and Biomedical and Behavioral Research by advancing efforts to study, evaluate and organize responses to the new reproductive biology.

It remains for lawyers to become more aware and, indeed, educated to the challenges and complexities of these new scientific and technological advances in reproductive biology. If they fail to achieve this level of awareness and education, "they will increasingly lack understanding of the questions to be asked,\(^{207}\)

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^201 See generally, Delgado & Miller, God, Galileo and Government: Toward Constitutional Protection for Scientific Inquiry in \textit{Ethical, Legal and Social Challenges to a Brave New World} at 231 (G. Smith ed. 1982).


^205 Capron, Bioethics on The Congressional Agenda, HASTINGS CTR. RPT. 22 (1989).

^206 Id. at 23.
207 And, one such open-ended question remains: To what extent, if at all, there is a fundamental constitutional or international human right for procreative liberty, health assistance in biological reproduction, and the point in the biological developmental chart that mandates the state to extend its protection to “life.”

While ever mindful of the perhaps unavoidable mixture of religion into science and the new laws of reproductive biology, every step must be taken to assure as pragmatic a view as possible is adhered to in the ultimate structuring of legislative responses and judicial interpretation. Scientific objectivity, if not verifiability, should be not an ideal but a given in this area of decision making. The legislative approaches taken by the European Parliament, the Federal Republic of Germany and the State of Victoria, Australia, run astray of scientific pragmatism. It remains to be seen whether the United States will follow this direction. The sad indications are that it will.