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Articoli/*Articles*

FINAL FINALITY IN LIVINGS FROM ANCIENT PHILOSOPHY AND MEDICINE TO CONTEMPORARY BIOMEDICINE

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SUMMARY

FINAL FINALITY IN HUMAN LIVINGS

In recent years biotechnology has introduced into medicine new possibilities for the manipulation of forms of life, including in vitro fertilization, production of transgenic animals and use of human fetal tissues for therapeutic procedures. This has given rise to a debate on final finality *of the beginning human life, which has involved scientific, philosophical, religious as well as legal issues.*

A report by an English governmental Commission (Warnock Committee, 1984) stated a practical term, e.g. 14 days, during which the so-called preembryo may be useful for research or therapeutics. The time has been chosen on embryological bases (i.e. appearance of nerve-type cells in the primitive streak), whereas a law is claimed to avoid discussions about the time of appearance of sensitivity of embryos.

On the other side is the opinion of the Court for Blount County of Tennessee expressed in the rule Davis vs. Davis (1989). While the term preembryo is considered a false distinction between stages of differentiation of human embryos, human life is considered beginning at conception and human embryos not as property.

A comparative analysis of medical and philosophical thought before the influence of Christianity shows that, for Hippocrates as well as for Aristotle, final finality *of the early embryo leads to consider the human being as a person just when life is* blooding. *This phase occurs after the* milk *one or vegetative stage, which is characterized by the property of doubling life when cells are separated, the same stage considered in the rule Davis vs. Davis.*

Bioethics is increasingly relevant in the medical debate, particularly about the value of incoming life or death. The search

Parole chiave/*Key words:* final finality - embryo - Greek medicine

for a moral consensus in advancement of science, i.e. for the use of fetal tissues in research or therapeutics, has been the object of the establishing of national committees of bioethics by many Governments.

In this field opinions of scientists focus attention on the need of research and sometimes their thinking reflects their own area of interest (e.g. for neurobiologists humans may be so-called only when neural cells may be found).

When commissions of bioethics are established, the opinions of their members may be influenced by many factors, such as their professions or religious believes. Thus, opinions of minorities are frequently registered in official documents and the debate is particularly enlivened when the argument is related to abortion, human fetal tissues transplantation or research.

The problem is very old: in fact, in ancient philosophy and medicine the discussion on the value of incoming life is present, mainly regarding incoming human life, different types of souls and *final finality* of both cosmos and living things.

In Hippocratic medicine a wide respect for incoming life may be found, e.g. in the Oath (*Iusiurandum*) with its celebrated passage which prohibits abortion (...Similarly I will not give to a woman an abortive pessarium...). It may be remembered that in the same text general ethics for physicians is included (...In purity and holiness I will guard my life and my art...), whereas the term used for abortion (πεσσον φθόριον) means drugs or devices which harm or injure the fetus.

Opinions of scientists in this fields are focused on the research for a compromise to favor research[1], whereas philosophy of science points attention on an autonomous evaluation of these problems.

The debate on *final finality* of both cosmos and living things has been recently renewed by scientific, legal as well as political statements. Religious thought is sometimes considered to be as misleading, particularly about the evaluation of incoming life or embryo as human being.

In this field, pre-Christian origin of thought may be useful for an analysis of the problems, as made, for example, in a recent symposium treating *final finality* of living things in its relationship with scientific ideas, from Aristotle to St. Thomas Aquinas and modern philosophy. In the Symposium *natural ends* and *moral ends* have been related to arguments of general ethics as well as to the debate of bioethics, e.g. final casuality in the development of embryos[1].

The main question is if nature is moving for hazards (e.g. latin *fortuna* or *fatus*) or the *final finality* is intrinsic to living things and their properties. The problem may be specified according to contemporary biological knowledge: is life a sum of molecular events under the pressure of casuality[2] or does each creature possess an *inclinatio naturalis* or *appetitus* that belongs to its nature and activity?[3]

Aristotle discussed these problems in his work "Physics", particularly in book VII (where he put the question of causality in the motion) and book VIII (where he explained the problem: does motion exist at all times or had it a beginning?).

The interpretation of this question in a methaphysical view was the aim of the philosophy of nature of St. Thomas Aquinas, who introduced a teleological explanation of the principle of causality[4].

The generic indication of an end property (finality) may be ambiguous, because it may be double-faced, e.g. health may be the finality of physical exercises, but to perform physical exercises it is necessary to be in good health. Thus, the term *final finality* expresses intrinsic properties of both cosmus and living things, because it is related to their specific realization.

The current debate on finality of medicine may be understood following the teleonomy of Aristotle: living things have an intrinsic power or entelechy, which overcomes the conceiving of motion by Anaxagoras and Empedocles[5].

It is certainly true that a single movement between opposites cannot go on forever as supposed by theories of motion-rest (motion alternated to resting) and it may be supposed that inanimate

things are coming into action by an external agent. On the contrary the self-originated motion of animals is caused by changes in the environment or motion inside the body (*Physics* VIII, 252 b).

The reasoning of Aristotle was developed from the demonstration that the four arguments of Zeno against motion as reality are untrue[6]. Confutation grows until Book VIII, chap. VIII, where a demonstration is provided that everlasting, uniform, uninterrupted, rotatory movement may exist.

But the entire Book VIII is dedicated to demonstrate that motion and change exist at all times and the idea of changes was extended also to medicine:

> ...when a man is sick he must have time in which to recover and he cannot make the change at the limit of some period; and also recovery is a change from sickness to health, and not to something else. So to suppose modifications to be continuous and unceasing is a too violent departure from the manifest phenomena, since all change must be a receding from one opposite and an approach to the other[7].

This passage is related to a general reasoning and recalling opposite means the relationship between medicine and philosophy[8]. It is worth noting that Aristotle was the son of a medical doctor, Nicomachus: thus, in his works the influence of medicine is evident in both accuracy of biological view and detailed naturalistic descriptions.

Probably medical observations induce Aristotle to refuse Empedocles, because his cosmology is based on a *linear regularity*, which is evident in non living materials, whereas in living things another principle may be observed, the *homeomery*, which is characterized by specularity of organs, e.g. eyes, ears, etc.

Inorganics are regular, ordered, geometrically organized, says Aristotle and later on St. Thomas Aquinas, whereas random chance is a property of natural events (e.g. meteorological). Chance (the hazard of Monod) cannot be homeomere but doubling (it seems to be a current definition of molecular genetics!) and functional homeomery should be under a higher general control[9]. Till here Aristotle, whereas for Aquinas the general higher principle is God.

Final finality of incoming livings in ancient thought

The effort of St. Thomas of recovering Aristotle in his purity, separated from contaminations by Stoicism or Neoplatonism, brings to the analysis of final causality of living things. This principle is expressed by two terms, *appetitus naturalis* and *inclinatio naturalis*, which may be found in the work of St. Thomas alone or together[10].

These two terms indicate life as an absolute value just after fertilization because the embryo is a human being.
Aristotle calls "product of conception the first mixing (of sperm) between female and male" and explains that.

The male introduces the principle of life and the female introduces the matter[11].

At this point only the vegetative soul is present, whereas soon after an embryo has sensitivity and life: abortion is allowed or not if there are sensitivity and life[12], terms which are quoted together, so unlike Aristotle a different evaluation of embryo and a previous stage are given, such as the so-called preembryo, a term which has been introduced to indicate the embryonic phase preceding the finding of nerve cells or precursors of nervous system.

The debate is very old, because quoted in the same way in a short pseudogalenic medical book of the II century A.D., in which a question has been formulated "if embryo, although inside and part of the internal organs of the mother, is living"[13].

The answer was positive and to reinforce the thesis the author quotes Solon who stated the possibility of inheritance for fetuses before birth: it may be argued that the fetus has been considered an autonomous living and not living only as part of the mother.

Biological knowledge of that time did not allow extrapolation to the present if not considering together the terms life and sensitivity: their whole meaning was a turning point for the evaluation of living things or new lives as persons.

Which influence or relationship may be found in today's debate on human embryology and bioethics?

The Warnock Report on human embriology

Various aspects of these problems have been the object of an inquiry into human fertilization and embryology by the Warnock Report[14] formulated by an English Committee, which was established in July 1982 with the following terms of reference:

> To consider recent and potential developments in medicine and science related to human fertilization and embryology; to consider what policies and safeguards should be applied, including consideration of the social, ethical and legal implications of these developments; and to make recommendations.

The Warnock Committee discussed the meaning of embryo, assuming the embryonic stage to be the six weeks immediately following fertilization which usually corresponds to the first eight weeks of gestation counted from the first day of the woman's last menstrual period[15].

The Committee examined many problems about fertilization and embryology.

Donation of embryos has been assimilated to a form of prenatal adoption, "with the advantage over normal adoption - says the Committee - that the couple share the experience of pregnancy and childbirth" (chapter 7.3), whereas the only rule is the anonymity of the donor (chapter 7.7): the word is used in singular form instead of "donors", thus indicating if referred to male a manly idea of fertilization like in ancient medicine, if referred to female a closed relationship between the mother and children with less rights for the father, i.e. no consideration of

Department of Health & Social Security

REPORT OF THE COMMITTEE OF INQUIRY INTO HUMAN FERTILISATION AND EMBRYOLOGY

Chairman:- Dame Mary Warnock DBE

Presented to Parliament by the Secretary of State for Social Services
the Lord Chancellor
the Secretary of State for Education and Science
the Secretary of State for Scotland
the Secretary of State for Wales
the Secretary of State for Northern Ireland

by Command of Her Majesty
July 1984

LONDON
HER MAJESTY'S STATIONERY OFFICE

Fig. 1 — Report of the Warnock Committee, 1984

the real fatherhood which may be demonstrated by using methodologies of molecular genetics.

Chapters 10-13 treat embryos (freezing, which is allowed under certain conditions; storage for a maximum of ten years). In the reasoning of the Committee the term of ten years is surprising introduced to exert rights by parents[16]. This term has practical origin, like the time to exert an acknowledgement of a son after birth, according to law. Surprising it is that only for this legal aspect the so-called preembryos are considered like newborn foundlings.

This is a crucial point, as evidenced in the rule Davis vs. Davis (see below) and by the opinion expressed by the Committee about rights in case of divorce or disagreement: solution is the same as for children, i.e. entrusted to an authority external to the family[17].

It is also worth noting that although the Committee considered early embryos not to be human persons, the *patria potestas* is extended to these embryos (ten years to exert or legitimate fatherhood, like for foundlings).

A controversial opinion was expressed about the possibility to use embryos as a research subject beyond fourteen days after fertilization[18]: the term preembryo has been introduced to indicate a subject with lower rights with respect to the embryo beyond this limit. The same term has been used by the American Fertility Society, according to the testimony given for the rule Davis vs. Davis. (See Appendix B).

A dissent about the use of human embryos in research was expressed by few members of the Committee. They agree that the embryo of the human species has a special status, but disagree about answers to questions such as "When does life begin?" or "When does the human person come into existence?" or "At what stage of development should the status of a person be accorded to an embryo of the human species?". They observed that in any case different opinions (about fertilization, implantation or stages of development) consider that just after fertilization there is a human being. The Report quotes their conclusion:

> it is wrong to create something with the potential for becoming a human person and then deliberately to destroy it. (They) therefore recommend that nothing should be done that would reduce the chance of successful implantation of the embryo.... (Embryos) should not be used for experimentation. Still less should embryos be deliberately created for the purpose of experimentation[19].

Despite this minority-opinion, the Warnock Committee suggested that legal limits or legal changes should cover only embryos beyond fourteen days after fertilization (the so-called preembryos), a principle which does not have any clear scientific, philosophical or theological support.

The only opinion supporting the idea of a preembryonic stage is due to the period of appearance of nerve cells (which occurs on the fourteenth day) so that we cannot speak of embryo before that time, because the organism is unable to have efficient intercellular communications. But is that true?

The idea of organism

A distinction should be made between cell population and organism: in fact the idea of a cell population as an organism is not enough. A culture of identical cells (e.g. monoclonal cells derived from a single cell) is not an organism, a term which indicates a whole of cells different by function.

Against the theory of spontaneous generation, the cell theory elaborated in the middle of the nineteenth century postulates that organisms are composed of cells, which arise from preexisting cells. Thus, attention was given to embryonic development and factors inducing of development of specialized tissues or organs. Only molecular and cellular biology has opened a window on the mechanisms responsible for the modulation of the

cellular genome during the first phase of differentiation and intercellular communications have been considered as due to a network of hormones, growth factors, small peptides, amines, etc., triggering a chain of cellular events, such as modulation of the level of cyclic nucleotides, phosphorylation of proteins, etc. involved at molecular level in differentiating processes.

Consequently, the role of nervous system or nervous cells is transformed, from the only operator of exchange to one of the operators of an extensive network; neurological research has taken names from other fields and neurosciences (not neurology, which today is a clinical branch) include neurophysiology, neurobiology, neurochemistry, neuropharmacology, neuropathology, etc., i.e. single research branches applied to neurology.

From this revolution it has been clearly evidenced that cells have intercellular comunications, independent from the intermediation of the nervous cells or system. Thus, in the study of early differentiation, the expression of new molecules by proliferating cells as result of fertilization is a crucial point to understand when cells become *different*, i.e. an organism.

Regarding early embryos, molecular biology has found differentiated DNA expression at the three-four cells stage and this is well-known as a critical phase to determine or not human twins (doubling of four cells). It may also be observed that the idea of differentiation changes according to the methodology of study. The terms morula (which is resembling a mulberry, 8-32 cells) and blastula (spherical structure of a single layer of cells, about 60-120 cells) and gastrula (two-three germ cellular layers, ectoderm and mesentoderm in the simplest type) have been based on differentiated appearance. When methods of biochemistry or molecular biology have been introduced in embryological studies, differentiated activities (e.g. synthesis of new proteins, gene expression, etc.) may be found and the early stage of differentiation shifted until 3-4 cells. As these findings agree with philosophical opinions about the unity of a

multicellular organism, as evidenced in ancient philosophy and medicine?

"How and when is a set of cells an individual being ?" says Dr. Anscombe[20], who quotes the opinion of the Court of the State of Tennessee, filed September 21, 1989 in the rule Davis vs. Davis, Blount Circuit No. E-14496[21].

Early embryos as person: Davis vs Davis rule and ancient medicine

The judgement of the Court of Tennessee, expressed by Judge W. Dale Young, concerned a dispute about the disposition of seven cryogenically frozen human embryos at a stage of 4-8 cells (e.g. fertilized eggs). Following a trial for divorce Mr. Davis applied for destruction of embryos, whereas Mrs. Davis opposes. The opinion of the Court was that human embryos are not a property (in contrast to the opinion expressed by the Warnock Committee) because from fertilization the cells of a human embryo are differentiated, unique and specialized to the highest degree of distinction. The judge has treated the trial like a normal dispute of divorce, where he placed the interest of the "children" first, even though at a stage of four cells, but considered human beings. In this case the rights of human beings have been considered the same as those of humans, e.g. children, and the common law doctrine of *parens patriae* about children was extended to *in vitro children*. And best interests of the children, *in vitro*, are that they are available for implantation (see the opinion of the Court, paragraphs 10-12).

The opinion of the Court has been revised by the Court of Appeals of Tennessee at Knoxville and embryos have been entrusted to both parents (see Appendix 3). In fact, the Court considered:

> ...repugnant and offensive to constitutional principles to order Mary Sue (i.e. former wife) to implant these fertilized ova against

IN THE CIRCUIT COURT FOR BLOUNT COUNTY, TENNESSEE,
AT MARYVILLE,
EQUITY DIVISION (DIVISION I)

W. Dale Young
Judge

JUNION L. DAVIS,
Plaintiff,

Vs.

MARY SUE DAVIS,
Defendant,

Vs.

RAY KING, M.D., d/b/a
FERTILITY CENTER OF EAST
TENNESSEE,
Third Party Defendant.

State of Tennessee

No. E-14496

FILED
SEP 21 1989

OPINION OF THE COURT

IN THIS DOMESTIC RELATIONS case, the only issue before the Court is the disposition of seven cryogenically frozen embryos maintained by the Third Party Defendant and the product of in vitro fertilization undertaken by the Plaintiff and the Defendant.

THE CASE is one of first impression.

IN ITS OPINION below, the Court has made certain findings of fact and conclusions of law resulting in judgment.

THE SALIENT findings, conclusions and the judgment are summarized as follows, to-wit:

(1) Mr. and Mrs. Davis undertook in vitro procedures for the purpose of producing a human being to be their child.

(2) The seven cryogenically preserved embryos are human embryos.

(3) American Fertility Society Guidelines are for intra-professional use, are not binding upon the Court, but are of probative value for consideration by the Court.

(4) The term "preembryo" is not an accepted term and serves as a false distinction between the developmental stages of a human embryo.

(5) From fertilization, the cells of a human embryo are differentiated, unique and specialized to the highest degree of distinction.

(6) Human embryos are not property.

(7) Human life begins at conception.

(8) Mr. and Mrs. Davis have produced human beings, in vitro, to be known as their child or children.

(9) For domestic relations purposes, no public policy prevents the continuing development of the common law as it applies to the seven human beings existing as embryos, in vitro, in this domestic relations case.

(10) The common law doctrine of parens patriae controls children, in vitro.

(11) It is to the manifest best interests of the child or children, in vitro, that they be available for implantation.

(12) It serves the best interests of the child or children, in vitro, for their Mother, Mrs. Davis, to be permitted the opportunity to bring them to term through implantation.

JUDGMENT OF THE COURT: The temporary custody of the seven cryopreserved human embryos is vested in Mrs. Davis for the purpose of implantation. All issues of support, visitation, final custody and related issues are reserved to the Court for consideration and disposition at such time as one or more of the seven human embryos are the product of live birth.

Fig. 2 - Opinion of the Court for Blount, County, Maryville, Tennessee - Davis vs. Davis, 1989

> her will. It would be equally repugnant to order Junior (i.e former husband) to bear ... consequences of paternity against his will ...

Although the Court of Appeals has been "required to resolve the issue consistent with the existing Tennessee law and the parties' constitutional rights", attention has been pointed also on biological considerations.

The Court has stressed the fact that the development of ova fertilized through biological manipulation is limited to the stage of eight cells, a stage at which:

> there is no development of the nervous system, the circulatory system or the pulmonary system and it is thus possible for embryonic development to be indefinitely arrested at this stage by cryopreservation or "freezing".

These biological considerations do not modify the more complete overview which is shown by the Judge W. Dale Young in the lower grade trial. In fact, the Court of Appeals has quoted "the foundations of the Tennessee common law", as desumed by few sentences (see Appendix 3) and remembered a statutory scheme about abortion and protection of life, by which "viable fetuses in the womb are not entitled to the same protection as persons".

The opinion of the Court of Appeals is "that as embryos develop, they are accorded more respect than mere human cells because of their burgeoning potential for life".

The unresolved question is the passage from *human cells* to *organism*, which is an "*individual* living thing" (Dorland's Illustrated Medical Dictionary, 25th edition, Saunders, Philadelphia, 1974). Under a view of cellular biology the individuality is reached by an organism when a stage of whole of *differentiated* cells may be clearly found. Today technology and observations about monozygotic twins let us to conclude that the turning point is just after the 8-cells stage. The Court of Appeals has considered the trial under legal aspect, despite the arguments of the lower Court about finality of fertilized ova as human being.

It is clear that the Court applied the principle of *final finality* to human life as beginning at the phase of conception, according to the testimony of dr. Lejeune:

> the Court accepts his testimony (of Dr. Lejeune) founded on the fact that DNA manipulation of the molecules of human chromosomes reliably detect these features of man; that the life codes for each special, unique individual are resident at conception and antimate the new person very soon after fertilization occurs... The Court finds and concludes that the cells of human embryos (at the stage of four cells) are comprised of differentiated cells, unique in character and specialized to the highest degree of distinction ... The argument that the human embryo may never realize its biological potential, it appears to the Court, is statistically and speculatively true, but is a hollow argument. A newborn baby may never realize its biological potential, but no one disputes the fact that the newborn baby is a human being. And if it is a part of the logic that an embryo, only a few hours old and perhaps only four cells in development, is no a being because it cannot sustain itself, then we must also reason that a newborn baby (which no one disputes is a human being) can likewise not sustain itself without the aid and assistance of a mature individual... And we must reason the newborn also lacks a necessary criteria to qualify as a human being. For surely it is good logic that a newborn human being, left naked in a field without the sustenance, aid and assistance of another human being will surely die; it is utterly helpless; it, too, lacks the capacity to sustain itself (pp. 15-16 of the Appendices to opinion of the Court).

It may be observed that the opinion of the Court closely agrees with ancient philosophical and medical thought.

In fact, passages of ancient medicine may be connected to a similar thinking, when the value of life, particularly of incoming life, was the object of speculations in ancient philosophy and medicine.

A difference between contraception and abortion was clear in Hippocratic medicine as well as in the work of Soranus of Ephesus, who claimed that Hippocrates forbade abortion but not contraception[22].

Soranus came from Asia Minor to the medical school of Alexandria, which was the most celebrated at that time. Later on he practiced in Rome during the reigns of Emperors Trajan and

Hadrian. Thus, it is worth noting that his thought was developed before the possibility of a Christian influence on medicine and embryology. Soranus quotes the Hippocratic Oath and *De Natura Pueri* (On the Nature of the Child) to bring the authoritative opinion of classical Greek medicine as a support against abortion.

Because it is likely that the book *De Natura Pueri* may be attributed to the School of Cnidos[23], reintroducing of Soranus to this School is due to derivation of the School of Alexandria by the Asclepiads. In fact, Praxagoras of Cos (340-320 B.C.) was the teacher of Herophilus, and Chrysippus of Erasistratus. They have been considered the founders of the School of Alexandria, deriving their knowledge from Greece, mainly from the Schools of Cnidos and Cos, which had representatives at Alexandria[24].

Thus, the opinion of Soranus may be considered as taken from the whole tradition of Hippocratic medicine according to the teaching in Alexandria. Soranus maintains that Hippocrates was against abortive drugs, but allowed expulsive means consisting in jumping and shaking, to free the mother of a product which was considered without sensitivity and life before the sixth day following fertilization. In fact, ancient philosophy and medicine believed that until the sixth day the product of fertilization was *milk-white* and only after the eighth day *blood-reddish*, i.e. flesh. Maybe this term is due to the idea of complexion of a period (e.g. fertilization) ascribed to the number 7. Thus, Pythagoras believed that a period of seven days closes the first phase of human conceiving[25].

This passage should be underlined, because sensibility is due to relationships between cells, a stage which for a long time has been related by embryologists to the first finding of nerve cells, i.e. the fourteenth day of the supporters of a pre-embryonic stage.

It is clear that in ancient thought a debate and a clear cut were present about difference between an amorphous cellular stage and an intercellular stage, in which sensitivity and life may be recognized.

This is the crucial point of the different evaluations of the Warnock Committee and the Court of Tennessee.

Sensitivity and life: when?

The Warnock Report says:

> 11.5 The first of these features is the primitive streak, which appears as a heaping-up of cells at one end of the embryonic disc on the fourteenth or fifteenth day after fertilization. Two primitive streaks may form in a single embryonic disc. This is the latest stage at which identical twins can occur... By the seventeenth day the neural groove appears and by the twenty-second to twenty-third day this has developed to become the neural folds, which in turn starts to fuse and form recognisable antecedent of the spinal cord.
>
> 11.6 Once fertilization has occurred, the subsequent developmental processes follow one another in a systematic and structured order, leading in turn through cleavage, to the morula, the blastocyst, development of the embryonic disc, and then to identifiable features within the embryonic disc such as the primitive streak, neural folds and neural tube...[26].

The opinion of the majority of the Warnock Committee was not moved by the consideration that fertilized human eggs are human beings. They believe that human embryos may be used at a very early stage:

> They did not rely, that is to say, as the minority did, on "potentiality", but on the consideration of what the embryo was at a particular time, its actual mode of existence immediately after fertilization... The precise point of dispute within the Committee was not on the value that should be attached to human life in general, but to the value that should be attached to human life at its very earliest stage of development... The proposition was that, if the resulting benefits were manifest, an embryo at a particular and very early stage might be used ...[27]

But when is "very early" ? A practical answer has been given, because the recommendation of a limit of fourteen days is based on a practical choice more than on a scientific turning-point

on development of the human embryo. The Committee noted that

> the human embryo *per se* has no legal status ... and the law does not treat the human embryo as having a right to life, (but) it provides a measure of protection for the embryo in vivo (p. xv-xvi).

Thus, recommendations have been formulated as follows:

> We recommended ... a limit of fourteen days. The point was not however the exact number of days chosen, but the absolute necessity for there being a limit set on the use of embryos, in terms of days from fertilization. In this way the law would be clear. If the limitation on research were set in terms of stage of development or the capacity of the embryo to feel pain, then these limits might be subject to dispute. If the limit is in term of days, on the other hand, this is a simple matter of counting, and there can be no dispute. This was the reasoning of the Committee[28].

Difficulties about a political ethics in the conclusions of the Committee are evident. In fact when a law is invoked, it is clear that the problem is hardly solved by scientific agreement. In this context it is surprising that biological, philosophical as well as political considerations have been much better combined in ancient philosophy, e.g. in the thought of Aristotle.

In fact the Stagirite shows an advanced political reasoning of the value of life, when he exposed politics about demography, marriage, procreation, training of infancy, education of children.

He draws attention to the best procreation and demography:

> As to exposing or rearing the children born, let there be a law that no deformed child shall be reared; but on the ground of number of children, if the regular customs hinder any of those born being exposed, there must be a limit fixed to the procreation of offspring, and if any people have a child as a result of intercourse in contravention of these regulations, abortion must be practised on it before it has developed sensitivity and life ...[29]

And he concludes with a clear indication for lawgivers:

> for the line between lawful and unlawful, abortion will be marked by the fact of having sensation and being alive.[30]

The thought of Aristotle about living things may be better explained by considering his definition of soul, that is a starting-point to distinguish living things from non living things. He notes that the word living is used in many senses, when any one of these characteristics is present, e.g. mind, sensation, movement, the latter implying nutrition and decay or growth:

> Consequently all plants are considered to live, for they evidently have in themselves a capacity and first principle by means of which they exhibit both growth and decay... they are nourished and continue to live, as long as they are able to absorb food. This capacity to absorb food may exist apart from all other powers, but the others cannot exist apart from this in mortal beings. This is evident in the case of plants; for they have no other capacity of the soul.
> This, then, is the principle through which all living things have life, but the first characteristic of an animal is sensation; for even those which do not move or change their place, but have sensation, we call living creatures, and do not merely say that they live....
>
> Let us be satisfied with saying that the soul is the origin of the characteristics we have mentioned..., that is by the faculties of nutrition, sensation, thought and movement...
> For just as in the case of plants some parts clearly live when divided and separated from each other, so that the soul in them appears to be one in actuality in each whole plant, but potentially more than one, so we can see that in other varieties of the soul the same things happen ...; for each of the parts has sensation and movement in space; and, if it has sensation, it must also have imagination and appetite; for, where sensation is, there is also pain and pleasure...[31]

The crucial point is that vegetative life is characterized by autonomous living when the organism is separated in two parts and by the absence of intercellular relationship (i.e. sensitivity).

This latter point has been sometimes interpreted as a requirement of nervous cells for a superior living thing, but today it is well known that the organism (distinct as explained from culture of cells) is characterized by different cells cooperating together, so that the loss of one type is crucial for its life.

The question concerns the possibility of applying ancient thought to contemporary bioethics. It seems conceivable that Aristotle was more careful than the Warnock Committee, probably because facing difficulties for a general agreement the only way for the Committe was a practical approach.

It is worth noting that during the 5th-4th centuries B.C. both philosophy and medicine of the Greek world were transformed in a lay manner and medicine was influenced in this transformation by naturalistic philosophy. Thus, the ethics of philosophers influenced medical ethics, as evidenced by the fact that the first example of end of actions (*final finality*) made by Aristotle is about medicine[32]. This lay bioethical thought may be of help today.

Ancient thought and bioethics

In classical Greek philosophy, ethics was identified with universal good, which is called in the categories of substance (e.g. god and mind), quality (e.g. virtue) and relation (e.g. usefulness). This thought was also applied in art and sciences, and craftsmen (e.g. a weaver or builder or physician) should follow it. But it is hard to see *how* they will benefit in their art, by knowing this Idea of good, says Aristotle in his *Ethics* (Book I, 6):

> How will a man who has seen the Idea (of good) be a better general or doctor? Doctors do not study health in this way (i.e. as an universal Idea); they study the health of man, or, better, the health of "this" individual. Doctors practice on individuals, not on the species.

Despite the ethics of Plato, which may be defined as a general absolute ethics corresponding to the ethics of the Ideal State, for Aristotle there is space for individual ethics, particularly when a single man (craftsman or patient) is involved. This is the case of medicine, where " the treatment is private", he says and explaines that scientific knowledges are general or universal, but actually knowing is individual[33].

Written rules may be made by lawgivers in a non mandatory way: in fact, it is worth noting that Aristotle focused his attention on ethics considered a value independently by law, which "whether... written or unwritten makes no difference", thus indicating that a general and universal rule is a guideline even when written rules cannot be found. This principle has been applied in the ruling of Davis vs. Davis, founded on a general law (i.e. the value of life, which is protected in the Universal Declaration of Human Rights and Constitution of Single States) more than on a specific one, which cannot be recognized in the legislation of a community. In this case (i.e. the State of Tennessee) it would appear uncorrect the invocation of absence of positive written laws by a Court of Justice[34]: in fact, Judge W. Dale Young applied the Aristotelian principle of general ethics as a guideline and the general principle of Roman jurist Celsus of *ius est ars boni et aequi*, that is "Law is the science of what is good and just".

The English words "just" or "justice" (latin *aequus* or *aequitas*) mean equality, a principle which is present in many Constitutions (e.g. art. 3 of Italian Constitution). In the ancient classical world principles of justice may be unwritten: only with Justinian (483-565 A.D.) the *ius aequum* necessarily is *ius conditum*, because the reference for behaviour is the collection of Roman laws and edicts (Code), edicts issued by Emperor Justinian himself (Novels) and decisions of jurists (Digest).

With a textbook for law students (Institutes) they constitute the body of the Roman law (*Corpus Juris Civilis*). Judges must apply the law, which is the only source of *aequitas*, without any possibility of interpretation: because the law is issued by the

Emperor as *res divina*, the function of the judge is to "find" the law (*bonum et aequum in iustitia*[35]), never to "make" or "interpret" the law.

But the same Justinian complained about judges, who applied few years later freely the law: in the balance between the believe in certain *a priori* principles (rationalism or naturalism) and search for explanations reached through observation (positivism) written laws cannot be enough.

In ancient philosophy law and medicine have been frequently quoted together regarding general principles: physicians and judges let to die person who has body or soul incurable, says Plato[36]. And he adds that doctors and magistrates have a crucial role in a well functioning State, mainly when disorders in health or civil life (quoted together, we note) are spreading[37].

And in the last book of his *Ethics*, Aristotle explains the uncomplete function of written laws using an example regarding medicine:

> How can someone become a lawgiver through studying laws or how to pick the best laws? People do not become doctors through treatises; yet, they try to determine not only what the various treatments are but also how particular people can be cured and how individuals should be treated, by distinguishing the different states of the body... Perhaps collections of laws and constitutions will be of use to those who can see the whole subject and judge what is good or bad and what suits certain people.

Thus, *final finality* of philosophical view of Aristotle became a general principle of behaviour (ethics) for both physicians and judges, joining absolute values and experience. This thought is found in the Hippocratic Oath and Aristotelian works, as a general everlasting rule, unwritten or written, for a fraternal group (physicians) or all citizens. The idea of good and just as general behavioural criterion from classical antiquity and the balance between Plato and Aristotle, i.e., the balances between prevailing of ethics of the State or individual ethics, are the horns of the dilemma which opposes different opinions about the value of incoming human life.

NOTES AND BIBLIOGRAPHY

1. About the use of human tissues for research or therapeutics, articles frequently appear in largerly diffused specialized Journals. See, e.g. BOOKSTEIN R., Research with fetal tissue. Nature 344 (1990) 284
For general embryology see:
GILBERT S. F.,Developmental Biology, 2nd edition, Sinauer Associated Inc. Publishers, New York, 1988.
For the relationship between human embryology and research see:
Report of the Advisory Committe to the Director, National Institutes of Health - Human Fetal Tissue Transplantation Research - Bethesda, Md., USA, December 14, 1988 (Report; Panel Vol. I-II).
BERTAZZONI U., FASELLA P., KLEPSCH A. and LANGE P. editors,
Human Embryos and Research, Campus Verlag, Frankfurt, 1990.
Related to this field a Symposium on "Finality and Intentionality. St. Thomas' teaching and modern perspectives" has been held at the Thomas More College of Louvain-la-Neuve, by the "Institute Superieur de Philosophie", May 21-23, 1990.
The first part of the Symposium focused on the implication of the principle of final casuality on science, e.g. biomedicine and cosmology, with the following program:

J. McEvoy (Catholic University of Louvain) - "Finis est causa causarum": le primat de la cause finale chez S. Thomas d'Aquin.
J. Follon (Catholic University of louvain) - Le principle teleologique chez Aristote e St. Thomas d'Aquin.
J. Hamesse (Catholic University of Louvain) - "Finis" et "intentio" chez S. Thomas: approches lexicographiques.
G.E.M. Anscombe (University of Cambridge) - Final casuality and the Development of Embryos.
J. Ladriere (Catholic University of Louvain) - Le principe anthropique et la finalité.
C. Steel (Katholieke Universiteit Leuven) - Natural Ends and Moral Ends.
J. Finnis (University of Oxford) - Object and Intention in Moral Judgements According to St. Thomas Aquinas.
J. Verbeke (Katholieke Universiteit Leuven) - Teleology and Logic in Stoicism and Aquinas.
The last day was dedicated to a comparative analysis of thomistic finality in modern philosophy, e.g. in the thought of Kant, Ockham and Brentano.

2. A cosmological casualism has been asserted by Jacques Monod. "Le hasard et la necessite" of MONOD (1970) was based on the definition "Tout ce qui existe dans l'Univers est le fruit du hasard et de la necessité", which was originally formulated by Democritus as explanation of atomism and derivation of complex bodies by collision and entanglement of simple bodies (atoms). This theory was the philosophical explanation of life seen as the sum of molecular events, under "pressure" of two powers, the emergency and, only derived from it, teleonomy (synonym of finality). DNA is the molecular support and permanent memory of the emergency, without an absolute finality (the *final finality* of Aristotelism), which is present only as a derivation of the emergency. The thought of Monod refuses the physics of Aristotle, the idealism of Hegel and

the biological methaphysics of Theilard de Chardin (MONOD J., De la Biologie Moleculaire a l'etique de la connaissance, *Lectura magistralis*, College de France, November 3, 1967).

3. ARISTOTLE in his work "Physics" says that motion is caused by a direct touch of the thing moved (e.g. pushing or pulling by an external agent; VII, 243 a). Each physical event may be explained by this law, except homeomerous substance or flesh, which may be defined as genesis and cannot be a "bringing together" (VII, 243 b), but "generation or production" (VII, 249 b). In fact for life it would be necessary to presuppose a principle of final causality of this entity seen as being or entelechy.

4. MCEVOY (Symp., ref. 1), speaking about the supremacy of final casuality in St. Thomas Aquinas, draws attention to the main goal of St. Thomas, which was to recover the thought of Aristotle in the philosophy of nature, separated from historical accretions of Stoic or Neoplatonic origin. St. Thomas developed Aristotle generalizing his thought on general finalism in three ways. Firstly every natural act shows a regular tendency (*inclinatio naturalis or appetitus*). Secondly, human intentionality has an instance of finality. Thirdly, all livings exhibit in their activity a series of relationships between means and ends. St. Thomas believed that this is a demonstration of the divine intelligence (St. THOMAS, De Principiis Naturae: Finis est causa causarum, quia est causa causalitatis in omnibus causis).

5. ARISTOTLE, Physics, VIII 250 b. Ancient naturalistic philosophers (except Eleatics) admit the exsistence of motion, everlasting as "substantia" but perishing and renewing for Atomists. The origin of motion for Anaxagoras is due to an indefinite duration of motionlessness, whereas for Empedocles cosmoi alternate periods of motion and rest, a conceiving similar to relaxation theories of dynamics of cosmus. Democritus believes that cosmus has no origin, because time has not, but Plato answers that the existence of time was simultaneous with the Universe (Timeus 38 b).

6. The confutation of Zeno's thesis has been made by Aristotle in Physics, beginning from book VI, IX. As it is well known, the opinion of Zeno was that the time of a movement is made by an infinitesimal indivisible instant in which the object is resting. The four examples may be thus summarized:
a) space as function of time:
— a moving object cannot reach a given point, because however near it may be, it must reach half-way between its position and the given point;
for the same reason Achilles cannot overtake a tortoise;
b) time as function of space:
— an object, like a flying arrow, cannot be moved in a certain period of time, because it cannot be moved at an indivisible instant;
— equal bodies moving opposite in a Stadium at equal speed are not moving because the half time of movement is equal to its double or whole time.

7. ARISTOTLE, Physics VIII, 253 b 27-31), by P.H. Wicksteed and F.M. Cornford (Loeb Classical Library), Harvard Univ. Press, 1934, Cambridge, Mass., USA.

8. ANGELETTI L.R. and FRATI L., The irresistible fascination of medical theories about opposites. Medicina nei Secoli 1 (1989) 133-155

9. FOLLON J., Communication at the Symp., ref. 1

10. HAMESSE J. et al., Communication at the Symposium ref. 1. By using a cross-search program on a CD-RM computing system in which the whole work of Aquinas has been loaded, the group of Hamesse has analyzed the occurrence of the two terms (appetitus naturalis and inclinatio naturalis) in the complete work of Aquinas (Index Thomisticus Sancti Thomae Aquinatis Operum Omnium Indices and Concordantiae, 49 voll., Frommann-Holzboog, 1974-1980, Stuttgart-Bad Cannstatt)

11. ARISTOTLE, Reproduction of Animals 728 b; 730 a

12. ARISTOTLE, Politics 1335 b 15

13. PSEUDO-GALENUS (2nd century A.D.) says: *εἰ ζῶον τὸ κατὰ γαστρός*, which is: an animal that is in the uterus.

14. Report of the Committee of Inquiry into Human Fertilization and Embryology, Chairman Mary Warnock, Department of Health and Social Security, 1984, London (thereafter quoted as Warnock Committee).

15. WARNOCK Committee, chap. 1.4

16. WARNOCK Committee:
chap. 10.10:... We recommend a maximum of ten years for storage of embryos after which time the right to use or disposal should pass to the storage authority...
chap. 10.11:... the couple who has stored an embryo for their use should be recognized as having rights to the use and disposal of the embryo...
chap. 10.12:... We therefore recommend that when one of a couple dies the right to use or dispose of any embryo stored by that couple pass to the survivor...

17. WARNOCK Committee:
chap. 10.13: problems might also arise when, in case of marital breakdown or not, the couple fails to agree how the shared embryo should be used. We recommend that when there is no agreement between the couple the right to determine the use or disposal of an embryo should pass to the storage authority as though the ten year period had expired.

18. WARNOCK Committee, List of recommendations:

#12. No live human embryo derived from in vitro fertilization, whether frozen or unfrozen, may be kept alive, if not transferred to a woman beyond fourteen days after fertilization, nor may it be used as a research subject beyond fourteen days after fertilization. This fourteen day period does not include any time during which the embryo may have been frozen (11.22).

#43. Legislation should provide that research may be carried out on any embryo resulting from in vitro fertilization, whatever its provenance, up to the end of the fourteenth day after fertilization, but subject to all other restrictions as may be imposed by the licensing body.

#44. It shall be a criminal offence to handle or to use as a research subject any live human embryo derived from in vitro fertilization beyond that limit (i.e. fourteen days after fertilization).

19. WARNOCK Committee, Expression of dissent by M. Carrline, J. Marshall and J. Walker, pp. 90-91

20. ANSCOMBE G.E.M., communication at the Symposium, ref. 1

21. State of Tennessee, Blount County Circuit Court, Maryville, Tennessee, Judgment Davis vs. Davis No. E-14496, filed September 21, 1989, Judge W. Dale Young.
It is worth noting that the opinion of the Court considers the Guidelines of American Fertility Society (April 14, 1986), which uses the term "preembryo" for a stage "from fertilization to the appearance of the embryonic axis...(which) lasts until 14 days after fertilization". This definition has been interpreted by Prof. J. Robertson as a group of undifferentiated cells which have no organs or nervous system. That at about 10-14 days the preembryo - says Professor Robertson - attaches itself to the uterine wall, develops its primitive streak and embryonic life then commences (see Appendices to opinion of the Court).
But the opinion of the American Fertility Society was that the definition of preembryo "is not intended to imply a moral evaluation of the preembryo" (p. 10).
The Court noted that Professor Robertson, in contrast with his testimony, uses in a paper the term embryo instead of preembryo and dr. King, a coworker of Professor Robertson, describes fertilized ova as "embryos, condition of embryo, 4 cell embryo, etc. Thus, the Court was convinced by the opinion of Dr. Jerome Lejeune, who gives "emphatic testimony that the cells are especially differentiated and that such position is a proven scientific fact" (p. 13).
For the Court the technology of molecular biology "opens a tiny window to the world to see and be aware of the most intimate and intricate details of man from his very beginning" (p. 15).
Finally, the Court believes that the term preembryo does not represent a truth of cellular biology, but serves as a false distinction between developmental stages of a human embryo. Thus, from fertilization "cells of a human embryo are differentiated, unique and specialized to the highest degree of distinction" (Opinion of the Court, #4).

22. SORANUS, Gynecology, by O. Temkin, The Johns Hopkins Univ. Press, Baltimore, 1956; see Book I, chapter XIX: Whether One Ought to Make Use of Abortives and Contraceptive and How ?
A contraceptive differs from an abortive, for the first does not let conception take place, while the latter destroys what has been conceived. Let us, therefore, call the one "abortive" (*φθορίον*) and the other "contraceptive" (*ἀτοκιον*). And an "expulsive" (*ἐκβολιον*) some people say is synonymous with an abortive; others, however, say that there is a difference because an expulsive does not mean drugs but shaking and leaping ... For this reason they say that Hippocrates, although prohibiting abortives, yet in his book *"On the Nature of the Child"* employs leaping with the heels to the buttocks for the sake of expulsion. But a controversy has arisen. For one party banishes abortives, citing the testimony of Hippocrates:

> ...who says: "I will give to one an abortive"; moreover, because it is the specific task of medicine to guard and preserve what has been engendered by nature...
> And since it is safer to prevent conception from taking place than to destroy the fetus, we shall now first discourse upon such prevention...

On the same kind, Hippocrates says that:

> abortion is more dangerous than labour... it is with violence that the embryo is aborted, either by drugs, beverages or pessaries or in other ways. And violence is evil. *De Morbis Mulierum*, I, 72; Oeuvres Complete d'Hippocrate, by E. LITTRÉ, Bailliere, Paris, 1839-1861, vol. 8, p. 152.

23. ANGELETTI L.R., Polybos and the heritage of Hippocrates. Medicina nei Secoli 1 (1989) 23-38

24. CUMSTON C.G., The History of Medicine, Dorset Press, New York, 1987, p. 109.

25. The opinion of Pythagoras is reported by CENSORINUS, De Die Natali, chap. XI: *"quod ex semine conceptum est, sex ... primis diebus umor est lacteus, deinde proximis octo sanguineus"*.

26. WARNOCK Report, cit., 1984, pp. 58-59

27. WARNOCK Report, cit., 1984, Introduction, p. xv.

28. WARNOCK Report, cit., 1984, Introduction, pp. xv-xvi

29. ARISTOTLE, Politics, 1335b 19-25, translation by H. Rackam, Loeb Classical Library, Harvard Univ. Press, Cambridge, Mass., 1944.

30. ARISTOTLE, Politics, 1335b 25-26

31. ARISTOTLE, On the Soul, 413b 22-25, translation by W.S. Hett, Loeb Classical Library, Harvard Univ. Press, Cambridge, Mass., 1957).

32. ARISTOTLE, Ethics, Book I: Every skill and every inquiry, and similarly, every action and choice of action, is thought to have some good as its object. This is why the good has rightly been defined as the object of all endeavour.

However, there appears to be some difference among the ends: some of them are activities, whereas others are products, apart from the activities. Where there are ends apart from the activities, in these cases the product is by nature better than the activity.

Just as there are many activities, crafts and sciences, so too, there are many ends. For example, health is the end of medicine, the vessel of shipbuilding, victory of generalship, and wealth of estate management...

It makes no difference whether the end of action is the activity itself, or something else apart from that, as we said above.

33. ARISTOTLE, Ethics, Book X, 9:

On the basis of what we have said, a man would be better able to do that by becoming a lawgiver. State control, clearly is produced by means of laws, and good control by means of worthy laws. Whether these are written or unwritten makes no difference, nor does it matter in music, physical training, and other pursuits...

There is another difference between private training and state training, similar to the situation of medicine. In general, quiet and fasting are proper treatment for people with fever; but it may not be so far a particular individual ... The particular case seems to get more precise attention when the treatment is private, for then the individual is more likely to get what is suitable. But the best individual treatment can be given by doctor, trainer, etc., when they know the general treatment, that is what is good for all cases or this sort of case (the science are said to be, and are, sciences of the general or universal). However, one may well be able to give *good treatment* to an individual without actually knowing, but through having observed carefully what happens in each case; some people seem to be their own best doctors, although they would be unable to cure others. Nevertheless, the man who wants to be a good craftsman and know the subject must, it seems, proceed to the universal and know it as far as possible, since this, as we said, is the object of the science... It is not just for anyone at all to set a given person right; if anyone can do it, it is the man who knows, just as it is in medicine and in other cases where care and prudence (which is a human virtue, we say) are involved.

34. The Universal Declaration of Human Rights was adopted without dissent on December 10, 1948 by the General Assembley of the United Nations, New York. The declaration enumerates general and specific rights, first of all the rights of life.

35. ST. THOMAS AQUINAS, Summa Theologica IIa-IIae q.L.VII, art I

36. PLATO, Republic III, 409d-410a

37. PLATO, Republic III, 405a-b

38. Author thanks Prof. M. Stefanini, Institute of the Histology, University of Rome La Sapienza, for critical revision of parts of the paper related to embryology and Mrs. Diane Marinelli and Mrs. Giuliana Pompa for help in preparing the manuscript.
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Appendix A. Warnock Report, London, 1984, pp. 164-188
Appendix B. Davis vs. Davis, Opinion of the Court of the Blount County, State of Tennessee, 1989, pp. 189-206
Appendix C. Davis vs. Davis, Sentence of the Court of Appeals of Tennessee, 1990, pp. 207-211

Appendix A - *Report of the Committee of Inquiry into Human Fertilization and Embriology*

Chairman: Dame Mary Warnock, London, July 1984

The Committee has been established in July 1982 "to examine the social, ethical and legal implications of recent and potential developments in the field of human assisted reproduction".

At the end the majority of the Commission adopted a principle of utility to solve the main problem, which is related to the question if and when the embryo has autonomous value in its very earliest stage of development.

Since a legal definition of the time is claimed, but presently not available, the Commission recommended a limit of fourteen days as the limit set for the use of embryos.

In fact, the Commission says, if the limitation on research were set in terms of stage of development or the capacity of the embryo to feel pain, then these limits might be subject to dispute. If the limit is in term of days, on the other hand, this is a simple matter of counting, and there can be no dispute. This was the reasoning of the Committee.

Differences between members of the Commission have been presented in three formal expressions of dissent about surrogacy and use of human embryos in research.

The Appendix includes the following parts of the Warnock Report:

A1. INTRODUCTION

The *Times*, on 15 December 1984, carried a dramatic headline. It read "Warnock: Ethics Undermined". What followed was a denunciation of the Report

of the Committee of Inquiry into Human Embryology ascribed to the Chief Rabbi which was, in fact, moderate in tone compared with some of the abuse to which members of the Inquiry had been, and are still, subjected both collectively and individually, since the publication of our report in July 1984. None of the members of the Inquiry had any doubt that they were concerned with moral issues. But we were not perhaps all of us certain how such issues ought to be approached, and especially how they should be approached by a body set up by Parliament to make recommendations which might lead to legislation. Many of our critics (including, I believe, the Chief Rabbi) have not really addressed themselves to this problem either: the problem of legislation, and its relation to morality, in such controversial fields. Many of them also embarked on their denunciations without having read the report. In the following pages the report is reproduced in its original form. By way of introduction I append a few observations of a general kind on the nature of moral issues, and the relation between such issues and the law. At the end of the report, I add some notes of a more specific nature about what was expected of this particular Committee of Inquiry, and what may happen as a result of our deliberations.

I do not believe that there is a neat way of marking off moral issues from all others; some people, at some times, may regard things as matters of moral right or wrong, which at another time or in another place are thought to be matters of taste, or indeed to be matters of no importance at all. But it seems likely that in any society, at any time, questions relating to birth and death and to the establishing of families are regarded as morally significant. It was therefore clear from the start that we, the Inquiry, were dealing with moral problems.

The philosopher Hume, in the *Treatise of Human Understanding* (1738) wrote that morality was "more properly felt than judg'd of". He argued that moral distinctions, the basic distinctions between right and wrong, were drawn by *moral sense* and not by *reason*. Most ordinary people agree with Hume. Faced with an unfamiliar possibility or a new practice, they reflect on it, and say "I simply feel that it is wrong." Those who discuss moral decisions in terms of what is or is not compatible with the dictates of conscience are, at least in part, appealing to an inner sense of what is or is not tolerable behaviour.

Some people, it is true, are inclined to regard morality not so much as a matter of feeling or sentiment, as of obedience to certain established rules. But even for these people the subjects we were concerned with on the Inquiry presented grave difficulties. For how could rules exist to regulate things like the creation of embryos in the laboratory, which had simply not been envisaged even a decade ago? If morality is indeed obedience to rules, then the rules were yet to be invented.

An alternative and superficially attractive theoretical solution to the problem of how to arrive at moral decisions is offered by utilitarianism. The principle of utility lays down, as the foundation of morality, that an act is right if it benefits more people than it harms, wrong if the balance is the other way. Many scientists engaged in research using human embryos, or doctors employing new techniques to remedy infertility have recourse, wittingly or unwittingly, to utilitarian arguments to justify what they are doing. They point to the immense increase in human happiness when a hitherto infertile couple, like the parents of Louise Brown, manage to have a child; and they argue that there is no pain caused to anyone to weigh in the balance against this happiness. Again, research using embryos may bring unknown benefits in the control of inherited or genetically related disease, and no-one is harmed by such research. Now there are some respects in which a Committee of Inquiry such as ours has to argue on utilitarian presumptions, especially with regard to legislation. I shall discuss this below, but it is necessary to point out first that in a very obvious way the principle of utility cannot solve, by itself, the essential moral problem with regard to research using human embryos on which, in turn, programmes of in vitro fertilisation depend. For such research does manifestly harm the embryos. If a strict utilitarian says that embryos do not count, for the purposes of calculation of pleasures and pains, harms and benefits, he is, in saying this, making a moral decision about *how to regard embryos*; and this decision has to be made before any such calculation becomes morally relevant.

By themselves, then, neither utilitarianism nor a blind obedience to rules could solve the moral dilemmas the Inquiry was faced with. We were bound to have recourse to moral sentiment, to try, that is, to sort out what our feelings were, and to justify them. For that a decision is based on sentiment by no means entails that arguments cannot be adduced to support it. Nor are utilitarian arguments based on possible benefits and harms ruled out. It is only that they will not suffice alone. What is essential is to recognise that sentiment has some part, and indeed a crucial part, in arriving at moral decisions. For if this is recognised, it may be less surprising that agreement is not always possible in matters of morality. We know that people's feelings differ. Therefore moral conflict may be unavoidable. If morality were really a question of weighing up harms and benefits, there would be more hope of agreement; and if it were a case of obeying certain rules, we ought to be able to find out what the rules lay down, and come to an agreed decision. In real life morality is more complicated and more various than that. There is no single "correct" view.

If anything, I was more impressed by the extent of moral agreement than of disagreement among members of the Committee of Inquiry, especially considering how many different professions, religions and races we had among our number. But of course we were not set up simply to utter moral pro-

nouncements, agreed or otherwise. We were supposed to advise Ministers with a view to future legislation. Our critics, in Parliament and outside, have frequently forgotten this. We have been accused of making recommendations which attempt a compromise between incompatible moral positions; of proposing arbitrary limits; or of suggesting that things offensive to numbers of people should be legally permissible. But the law is not, and cannot be, an expression of moral feeling. It must apply to everyone, whatever their feelings; it must be both intelligible and enforceable. We were bound, if we were to fulfill our task, to bear in mind the differences between the law and morality. On the other hand, we had, obviously, to recognise their interconnection.

The relation between morality and the law has been a central issue in jurisprudence for very many years. There is a distinction between the way we approached this issue in the two parts of our report, that concerned with the treatment of infertility and that concerned with research. If the question is what measures to remedy infertility should be permitted in this country, the problem may be put in the following form: Why should the law intervene to prevent people using whatever methods are possible to enable them to have children? Why should not everybody be entitled to whatever is currently the best and most efficient treatment for infertility? The issues here are quite closely parallel to the issues raised in the 1960s by the Wolfenden Report on homosexuality between consenting males. Ought the law to intervene to make such conduct criminal or ought it not? The famous view of Lord Devlin (*The Enforcement of Morals*, Oxford, 1959) was that where there is a consensus of opinion against a certain practice among members of the general public (exemplified by the notorious "man on the Clapham omnibus") then the law must intervene to prevent conduct which is repellent to that public. A shared moral view, Lord Devlin argued, was the cement that bound society together. If such shared views were not reflected in law, if law did not enforce what society held to be morally right and wrong, then society itself would disintegrate. A society is characterised by a shared moral view; without it there would be no society. Therefore to act against such a shared view would be tantamount to treason. The law could no more permit acts contrary to the shared morality than it could permit treason.

The drawback with Devlin's view is that, increasingly, we are compelled to accept that "common morality" is a myth. There is no agreed set of principles which everyone, or the majority, or any representative person, believes to be absolutely binding, and especially is this so in areas of moral concern which are radically and genuinely new. We saw that the concept of a "rule" breaks down, in novel and hitherto unthought-of cases, and the notion that there is a consensus morality in such cases is equally untenable. The question must be recast: In situations where people disagree with each other as to the rights and wrongs of a specific form of behaviour, how do we decide whether or not the law is to intervene?

H.L.A.HART (*Law, Liberty and Morality*, Oxford, 1963) identified two moral problems, on "primary" and the other "critical". At the first level the question is whether a certain practice (homosexual acts between consenting males, or AID) is morally right or wrong; at the second level the question is whether, if the law intervened on this matter, the infringement of liberty involved would itself be morally right or wrong. If we consider a case that concerned the Inquiry, the case of AID, it is plain that moral opinions about it vary through the whole spectrum, from those who think it absolutely wrong (like members of the Jewish Community, who think that it is "bringing orphans into the world", and therefore necessarily wrong) through those who are doubtful, because of the possible risks to AID children, to those who regard it as an absolute right that anyone should have access to AID, whether they are married or single, hetero- or homosexual.

Furthermore, any law enacted to render AID a criminal offence, besides going against the moral views of a fair number of the community, would involve, in itself, a disagreeable intrusiveness, for AID is something that can relatively easily be carried out at home, without any medical intervention. For a law to be enforceable, there would need to be a band of snoopers or people ready to pry into the private lives of others, which might well itself constitute a moral wrong.

Similarly, in the controversial matter of surrogate mothers, the Inquiry agreed unanimously that they disapproved of the practice (largely because of possible consequences for the child); but they also agreed that it could not be prevented by law, because of the intrusiveness of any law that would be enforceable. The Inquiry therefore concentrated on how surrogacy for commercial purposes might be checked, leaving on one side the question whether surrogacy was intrinsically morally right or wrong. We might all of us have answered the primary moral question in a way which made surrogacy wrong. This did not pre-empt the answer to the second-order moral question, Should the law be invoked to stop surrogacy? We all agreed that it would be morally wrong to envisage a law which would intrusively curtail human freedom, and which would in addition be impossible to enforce (how could the law tell whether the child whom Abraham claimed as his own was born to Sara, or to a servant girl who happened to be more fertile?) The Inquiry, then, while unanimously answering the first-order question negatively, holding that surrogacy was wrong, nevertheless held that legislation should not be invoked to prevent it. We did however by a majority recommend that the commercial use of surrogacy arrangements, as a way of making money for an agency, could and should be made a criminal offence. For not only was the wrongness of surrogacy compounded by its being exploited for money, but also a law against agencies would not be intrusive into the private lives of those who were actually engaged in setting up a family.

Thus in some cases it was necessary to distinguish the issue of moral right or wrong, as we saw it, from a further, also moral question, whether it would be right to enforce a moral view, even if such a view were agreed. There was, however, a more testing kind of question, infinitely more important, in my opinion. This was the question of research using human embryos. I have already suggested reasons for the extreme difficulty of reaching an agreement on this matter. Utilitarianism could, as I have argued, by itself provide no solution, simply because the very question at issue was whether or not embryos count as those whose harms and benefits, pleasures and pains, have to be thrown into the balance to be weighed against the benefits or harms to society as a whole. But here we had, it seemed, an issue on which legislation must be foreseen, and must be enacted quickly. No-one felt inclined to argue that the decision whether or not to embark on research with the use of human embryos was a matter of personal conscience, as they might in the case of AID, surrogacy, or, for that matter, homosexuality between adults. Everyone agreed that this was a matter on which there must be legislation, and that whether and to what extent embryos should be used must be a decision for the law.

The reason for this certainty, for the distinction, that is, between what might be thought a private matter and one which was *necessarily* public was somewhat obscure. Nor did the Inquiry draw the distinction explicitly or clearly. But the grounds for it are something like this: research is largely publicly funded. Therefore society, from whom ultimately funding comes, is entitled to know, and even to some extent to control, what research methods are used. If it were revealed after years of work that a number of human embryos had been used to achieve a particular advance in knowledge, the public would still feel that they should have known in advance what research methods were being used; the actual processes and development of the research should have been monitored, and subjected to public scrutiny. This view may be exaggerated; but it is widely held. Society, insofar as it is a single identifiable body, has here, perhaps uniquely, a corporate reaction. It is one of fear. People generally believe that science may be up to no good, and must not be allowed to proceed without scrutiny, both of its objectives and of its methods. There are some things which, manifestly, society would not like to occur in its laboratories. Nor would people be prepared to allow that, even if all such work in laboratories relying on public funds (such as the laboratories of the Medical Research Council) were brought to an end, it could continue in privately funded laboratories. There is a strong feeling that certain possible experiments and research should be subject to criminal law and made a criminal offence, wherever undertaken.

To suggest that it would be all right provided only that it were not publicly financed would be like saying that certain kinds of experiments on patients, let us say children, should be banned from the NHS hospitals but might be

permitted in the private sector. I do not believe that the question of individual freedom enters here into public thinking. A scientist who argued that he must be free to carry out whatever research he liked, by whatever methods, would not get much public support, if this involved the use of other human beings. Society feels, albeit obscurely, that its members, especially the most helpless, such as children and the very old, must be protected against possible exploitation by enthusiastic scientists: and embryos are brought into the category of those deserving protection, just as animals are. This is a matter of public, and widely shared, *sentiment*.

Here, then, is an area different from the first. In the case of methods of treating infertility, or of establishing a family, there was a fairly strong view that the freedom of the individual to take what steps he could had to be respected. In addition, as we have seen, the enforcement of a law would in any case be intrusive and would provide, in itself, a hazard to individual liberty. In the case of research, on the other hand, there was general agreement that the issue of individual liberty did not arise. We were confronted here with an area of general moral consensus, with no countervailing arguments against legal enforcement. Perhaps this distinction is not sufficiently brought out in the report itself.

However, as becomes clear from the report and the dissenting opinions appended to it, the degree of protection that the law should afford to the human embryo was not unanimously agreed. Some held that an embryo, being human, should be granted the full protection of the law, and should indeed be treated as though it were no different from a child or an adult. Just as children may not be used in experiments, or for the purposes of research, even if their parents were willingly to permit it, so embryos ought on this view to be totally protected. The majority of the Inquiry held, on the contrary, that its stage of development made an important difference to the degree of protection that should be afforded to a human embryo.

According to the majority view, the question was not, as is often suggested, whether the embryo was alive and human, or whether, if implanted, it might eventually become a full human being. We conceded that all these things were true. We nevertheless argued that, in practical terms, a collection of four or sixteen cells was so different from a full human being, from a new human baby or a fully formed human foetus, that it might quite legitimately be treated differently. Specifically we argued that, unlike a full human being, it might legitimately be used as a means to an end that was good for other humans, both now and in the future.

This, then, was a matter of judgment; and no-one would deny that it was a moral judgment. What was being weighed up was certain human goods on the one hand and the status of these collections of cells on the other. One was to be valued against the other. The majority of the Committee was not moved by the argument that these cells could, if certain conditions were satisfied,

become human beings. They did not rely, that is to say, as the minority did, on "potentiality", but on the consideration of what the embryo was at a particular time, its actual mode of existence immediately after fertilization. If, on broadly utilitarian grounds, the benefits from the use of embryos at this stage seemed very great, and if not only was there no harm in the sense of immediately felt pain to the embryo but also in addition there were no absolute outrage of general moral sentiment (as there would be, for instance, if even a very young or profoundly defective child were used for research) then the majority argued that the embryo might be used for research. The precise point of dispute within the committee was not on the value that should be attached to human life in general, but to the value that should be attached to human life at its very earliest stage of development. It was here that it was necessary to invoke the law. The Committee was not advocating that any embryo, at any stage of its development, should be used as material for research: everyone would have regarded that as morally outrageous. The proposition was that, if the resulting benefits were manifest, an embryo at a particular and very early stage might be used. Therefore there must be a law so drafted as to provide a definition of "very early". We recommended, for reasons set out in the report, a limit of fourteen days. The point was not however the exact number of days chosen, but the absolute necessity for there being a limit set on the use of embryos, in terms of a number of days from fertilisation. In this way the law would be clear. If the limitation on research were set in terms of stage of development or the capacity of the embryo to feel pain, then these limits might be subject to dispute. If the limit is in terms of days, on the other hand, this is a simple matter of counting, and there can be no dispute. This was the reasoning of the Committee.

It was clear then, as I have said, that we had here a genuine moral disagreement, one with regard to fundamental values, within the Committee itself. The law cannot reflect this disagreement. It must come down on one side or the other. But it is important to emphasize that the dispute is not, as has sometimes been suggested, between those who hold that human embryos should never be used for research and those who hold that they may always be used. It is between those who hold that they may never be used, and those who hold that they may be used only subject to stringent regulation and control.

All members of the Committee wanted the criminal law to be invoked in this matter. Members were therefore agreed that there must be a means of enforcing the law, whatever it was, and that this would entail the establishing of an inspectorate, whose task would be to monitor laboratory work in human biology, genetics and embryology. The difference is whether some work involving live embryos should be licensed or none. Those of us who argued for the licensing of some work using human embryos were not, I think, unduly

moved by the fact that such work has been going on for a long time up and down the country, nor by the thought that if it were altogether banned from this country many scientists would go abroad to continue it. We tried as far as possible to put such considerations on one side and to consider the matter purely as a question of moral values.

All the other issues we had to consider seemed relatively trivial compared with this one, concerned as it is with a matter which nobody could deny is of central moral significance, the value of human life. Without agreed rules (and it is, as I have already said, idle to pretend that there are rules, somehow already laid down, which tell us what to do in these wholly unfamiliar matters) and without any agreed feeling except the feeling that some regulation or other had to be introduced, the Committee was obliged to use a mixture of utilitarian considerations and of judgment. We were obliged moreover to bear in mind that any law must be generally seen to be beneficial, that it must be intelligible and that it must be enforceable. The law must not outrage the feelings of too many people; but it cannot reflect the feelings of them all. It must therefore be drawn with a view to the common good, however this notoriously imprecise goal is to be identified. This was the task that, especially in the second part of the report, the Committee had to tackle. It was a task, as I have suggested, which raised profound and far-reaching questions about the relation between the law and the morality of society.

A2. FOREWORD

1. Our Inquiry was set up to examine, among other things, the ethical implications of new developments in the field. In common usage, the word "ethical" is not absolutely unambiguous. It is often used in the context, for example, of medical or legal ethics, to refer to professionally acceptable practice. We were obliged to interpret the concept of ethics in a less restricted way. We had to direct our attention not only to future practice and possible legislation, but to the principles on which such practices and such legislation would rest.

2. Members of the Inquiry were reluctant to appear to dictate on matters of morals to the public at large. They were also keenly aware that no expression of their own feelings would be a credible basis for recommendations, even if they all felt exactly alike. As our reading of the evidence showed us, feelings among the public at large run very high in these matters; feelings are also very diverse; and moral indignation, or acute uneasiness, may often take the place of argument. But that moral conclusions cannot be separated from moral feelings does not entail that there is no such thing as moral reasoning. Reason and sentiment are not opposed to each other in this field. If, as

we believe, it was our task to attempt to discover the public good, in the widest sense, and to make recommendations in the light of that, then we had, in the words of one philosopher, to adopt "a steady and general point of view". So, to this end, we have attempted in what follows to argue in favour of those positions which we have adopted, and to give due weight to the counter-arguments, where they exist.

3. Our emphasis on the arguments may make it appear that there was a uniformity of approach and moral feeling in the Inquiry. The reality however has been that our personal feelings and reactions have been as diverse as those presented in the evidence. Some members have a clear perception of the family and its role within society; in considering the various techniques before us their focus has been on the primacy of the interests of the child, and on upholding family values. Other members have felt equally strongly about the rights of the individual within society. Whatever our original feelings and reactions, we have all found that our feelings changed and were modified as work progressed and as we examined the evidence in more detail. This has been a further reason for basing our views on argument rather than sentiment, though we have necessarily been mindful of the truth that matters of ultimate value are not susceptible of proof.

4. A strict utilitarian would suppose that, given certain procedures, it would be possible to calculate their benefits and their costs. Future advantages, therapeutic or scientific, should be weighed against present and future harm. However, even if such a calculation were possible, it could not provide a final or verifiable answer to the question whether it is right that such procedures should be carried out. There would still remain the possibility that they were unacceptable, whatever their longterm benefits were supposed to be. Moral questions, such as those with which we have been concerned are, by definition, questions that involve not only a calculation of consequences, but also strong sentiments with regard to the nature of the proposed activities themselves.

5. We were therefore bound to take very seriously the feelings expressed in the evidence. And, as we have said, it would be idle to pretend that there is not a wide diversity in moral feelings, whether these arise from religious, philosophical or humanist beliefs. What is common (and this too we have discovered from the evidence) is that people generally want *some principles* or other to govern the development and use of the new techniques. There must be *some barriers* that are not to be crossed, some limits fixed, beyond which people must not be allowed to go. Nor is such a wish for containment a mere whim or fancy. The very existence of morality depends on it. A society which had no inhibiting limits, especially in the areas with which we have been con-

cerned, questions of birth and death, of the setting up of families, and the valuing of human life, would be a society without moral scruples. *And this nobody wants.*

6. In recognising that there should be limits, people are bearing witness to the existence of a moral ideal of society. But in our pluralistic society it is not to be expected that any one set of principles can be enunciated to be completely accepted by everyone. This is not to say that the enunciating of principles is arbitrary, or that there is no shared morality whatever. The law itself, binding on everyone in society, whatever their beliefs, is the embodiment of a common moral position. It sets out a broad framework for what is morally acceptable within society. Another philosopher put it thus: "The reasons that lead a reflective man to prefer one. . . Legal system to another must be moral reasons: that is he must find his reasons in some order of priority of interests and activities, in the kind of life that he praises and admires". In recommending legislation, then, we are recommending a kind of society that we can, all of us, praise and admire, even if, in detail, we may individually wish that it were different. Within the broad limits of legislation there is room for different, and perhaps much more stringent, moral rules. What is legally permissible may be thought of as the minimum requirement for a tolerable society. Individuals or communities may voluntarily adopt more exacting standards. It has been our business, however, to recommend how the broad framework should be established, within our particular area of concern.

7. We realise that some people may think that we have set the limits, or have suggested that the barriers be erected, in the wrong places. But at least we hope that we have stated clearly what we think should be done, and exposed, as far as possible, the reasoning that lay behind our recommendations.

8. Barriers, it is generally agreed, must be set up; but there will not be universal agreement about where these barriers should be placed. The question must ultimately be what kind of society can we praise and admire? In what sort of society can we live with our conscience clear?

A3. CHAPTER ONE - THE GENERAL APPROACH

Background to the Inquiry

1.1 The birth of the first child resulting from the technique of in vitro fertilisation in July 1978 was a considerable achievement (this Report distinguishes between *in vitro* meaning "in a glass" and *in vivo* "in the body". The technique, long sought, at last successful, opened up new horizons in the

alleviation of infertility and in the science of embryology. It was now possible to observe the very earliest stages of human development, and with these discoveries came the hope of remedying defects at this very early stage. However there were also anxieties. There was a sense that events were moving too fast for their implications to be assimilated. Society's views on the new techniques were divided between pride in the technological achievement, pleasure at the new-found means to relieve, at least for some, the unhappiness of infertility, and unease at the apparently uncontrolled advance of science, bringing with it new possibilities for manipulating the early stages of human development.

1.2 Against this background of public excitement and concern, this Inquiry was established in July 1982, with the following terms of reference:

"To consider recent and potential developments in medicine and science related to human fertilisation and embryology; to consider what policies and safeguards should be applied, including consideration of the social, ethical and legal implications of these developments; and to make recommendations."

Scope of the Inquiry

1.3 In considering our terms of reference, we recognised that we were being asked to examine a sphere of activity still developing, and rapidly changing. A common factor linking all the developments, recent or potential, medical or scientific, was the anxiety which they generated in the public mind. We have therefore looked at the new processes of assisted reproduction including surrogacy, which can cause public concern. We have also considered artificial insemination, which, though practised in this country for many years, is not universally accepted ethically, nor indeed regulated by law. There were, however, some matters which, though in some sense related, fell outside our terms of reference. Chief among these were abortion and contraception. We have not concerned ourselves directly with these, although the present state of the law in relation to them has been a necessary point of reference in discussions.

1.4 Within the terms of reference we were given two words that had to be clarified. The first of these was *embryology*. While the term "embryó' has been variously defined in considering human embryology, we have taken as our starting point the meeting of egg and sperm at fertilisation. We have regarded the embryonic stage to be the six weeks immediately following fertilisation which usually corresponds with the first eight weeks of gestation counted from the first day of the woman's last menstrual period.

1.5 The second word in need of clarification was *potential*. The pace of scien-

tific discovery is unpredictable. Indeed, a number of major developments has taken place during the lifetime of the Inquiry. The changes which take place in society itself are also difficult to predict. The impact of scientific discoveries on the society of the future is therefore doubly hard to predict. We took the pragmatic view that we could react only to what we knew, and what we could realistically foresee. This means that we must react to the ways in which people now see childlessness and the process of family formation, taking into account the range of views encompassed by our pluralistic society, the nature and value of clinical and scientific advances and the benefits of research.

Methods of working

1.6 We found it convenient to divide our task into two parts. The first concerned processes designed to benefit the individual within society who faced a particular problem, namely infertility; the second concerned the pursuit of knowledge, much of it designed to benefit society at large rather than the individual. The distinction is not absolute. One cannot divorce pursuit of an individual's goals from the goals of society as a whole and, moreover, policies undertaken for the public good while they may well also benefit individuals can, on the other hand, impose limitations on them. Nonetheless, we found it a useful division, and the report thus deals first with the alleviation of infertility, and second with scientific developments.

1.7 We recognised that within society there is a multiplicity of views on the issues before the Inquiry. We therefore decided to seek evidence from as many organizations, reflecting as many different perspectives, as possible. A list of those who submitted evidence is included as the Appendix. We are particularly grateful for all the time and trouble taken by those who prepared submissions and for the insight they gave us into the problems we were asked to consider. But even with submissions from so many organizations we have to record with regret that we did not receive evidence from as wide a range of minority and special interest groups as we would have liked, despite our best endeavours.

The international dimension

1.8 Anxiety about the implications of the new developments in assisted reproduction is not confined to the United Kingdom. While there is an obvious attraction in a unity of approach to difficult ethical issues, and we have tried as far as possible to keep in touch with developments around the world, there are, in our view, sound reasons for not pursuing this unity of approach at the present time. Different countries are at different stages in the development both of services and of a policy response. They have different cultural, moral and legal traditions, influencing the way in which a problem is tackled and the ways in which it might be resolved. We have therefore made recommendations which we believe to be appropriate specifically in the United Kingdom. Nonetheless, we hope that others may find our proposals of value, just as we have benefitted from the experience of other countries. We accept that there is a case for an international approach. This approach will be best formulated, however, when individual countries have formed their own views, and are ready to pool knowledge and experience.

The role of the Inquiry

1.9 We have confined our recommendations to certain practical proposals, capable of implementation. We have tried to frame these recommendations in general terms, leaving matters of detail to be worked out by Government and other appropriate organisations. We have also indicated what we consider should be matters of good practice. We have clearly indicated where our formal recommendations, if accepted, would require legislative change. The development of science and medical technology in the field of human fertilisation opens up many new issues for the law. In vitro fertilisation, for example, has brought about situations not previously contemplated, in relation to which there is either no law at all, or such law 8S exists was designed for entirely different circumstances. We believe that new laws will be necessary to cope with the new techniques for alleviating infertility and their consequences, and to deal with the developments in research in the field of embryology. But we foresee real dangers in the law intervening too fast and too extensively in areas where there is no clear public consensus. Furthermore both medical science and opinion within society may advance with startling rapidity.

1.10 We do not discuss in the following chapters every situation which might arise and then relate it to all existing law. We have had neither the time nor the resources to do this; nor, in our view, would such a course have been appropriate. Rather we have considered the fundamental questions there raised in relation to any existing law and confined ourselves to what we regard as essential legislative changes. We wish to stress our view that the changes which we propose should apply equally throughout the United Kingdom of Great Britain and Northern Ireland.

A4. LIST OF RECOMMENDATIONS

We recommend that:

A. *The licensing body and its functions*

1. A new statutory licensing authority be established to regulate both research and those infertility services which we have recommended should be subject to control (13.3).

2. There should be substantial lay representation on the statutory authority to regulate research and infertility services and that the chairman must be a lay person. (13.4)

3. All practitioners offering the services we have recommended should only be provided under licence, and all premises used as part of any such provision, including the provision of fresh semen and banks for the storage of frozen human eggs, semen and embryos should be licensed by the licensing body. (13.7)

4. AID should be available on a properly organised basis and subject to the licensing arrangements described in Chapter Thirteen, to those infertile couples for whom it might be appropriate. The provision of AID services without a licence for the purpose should be an offence (4.16).

5. The service of IVF should continue to be available subject to the same type of licensing and inspection as we have recommended with regard to the regulation of AID (see Chapter Four 5.10).

6. Egg donation be accepted as a recognised technique in the treatment of infertility subject to the same type of licensing and controls as we have recommended for the regulation of AID and IVF (6.6).

7. The form of embryo donation involving donated semen and egg which are brought together in vitro be accepted as a treatment for infertility, subject to the same type of licensing and controls as we have recommended with regard to the regulation of AID, IVF and egg donation (7.4).

8. The technique of embryo donation by lavage should not be used at the present time (7.5).

9. The use of frozen eggs in therapeutic procedures should not be undertaken until research has shown that no unacceptable risk is involved. This will be a matter for review by the licensing body (10.2).

10. The clinical use of frozen embryos may continue to be developed under review by the licensing body (10.3).

11. Research conducted on human in vitro embryos and the handling of such embryos should be permitted only under licence (11.8).

12. No live human embryo derived from in vitro fertilisation, whether frozen or unfrozen, may be kept alive, if not transferred to a woman beyond fourteen days after fertilisation, nor may it be used as a research subject beyond fourteen days after fertilisation. This fourteen day period does not include any time during which the embryo may have been frozen (11.22).

13. Consent be obtained as to the method of use or disposal of spare embryos (11.24).

14. As a matter of good practice no research should be carried out on a spare embryo without the informed consent of the couple for whom the embryo was generated, whenever this is possible (11.24).

15. Where trans-species fertilisation is used as part of a recognised programme for alleviating infertility or in the assessment or diagnosis of subfertility it should be subject to licence and that a condition of granting such a licence should be that the development of any resultant hybrid should be terminated at the two cell stage (12.3).

16. The licensing body be asked to consider the need for follow-up studies of children born as a result of the new techniques, including consideration of the need for a centrally maintained register of such births (13.9).

17. The sale or purchase of human gametes or embryos should be permitted only under licence from, and subject to, conditions prescribed by the licensing body (13.13).

B. *Principles of provision*

18. As a matter of good practice any third party donating gametes for infertility treatment should be unknown to the couple before, during and after the treatment, and equally the third party should not know the identity of the couple being helped (3.2).

19. Counselling should be available to all infertile couples and third parties at any stage of the treatment, both as an integral part of NHS provision and in the private sector (3.4).

20. On reaching the age of eighteen the child should have access to the basic information about the donor's ethnic origin and genetic health and that legislation be enacted to provide the right of access to this (4.21).

21. In the case of more specialised forms of infertility treatment the consent in writing of both partners should be obtained, wherever possible, before treatment is begun, as a matter of good practice. Any written consent should be obtained on an appropriate consent form (4.21).

22. The formal consent in writing by both partners should, as a matter of good practice, always be obtained before AID treatment begins. A consent form should be used and thoroughly explained to both partners (4.23).

23. For the present, there should be a limit of ten children who can be fathered by one donor (4.26).

24. In cases where consultants decline to provide treatment they should always give the patient a full explanation of the reasons (2.13).

25. The NHS numbers of all donors be checked by the clinics where they make their donations against a new centrally maintained list of NHS numbers of existing donors, which is to be held separately from the NHS donor register (4.26).

26. There should be a gradual move towards a system where semen donors should be given only their expenses (4.27).

27. In relation to egg donation the principles of good practice we have already considered in relation to other techniques should apply, including the anonymity of the donor, limitation of the number of children born from the eggs of any one donor to ten, openness with the child about his genetic origins, the availability of counselling for all parties and informed consent (6.6).

28. It should be accepted practice to offer donated gametes and embryos to those at risk of transmitting hereditary disorders (9.3).

29. All types of "do-it-yourself" sex selection kits should be brought within the ambit of control provided by the Medicines Act with the aim of ensuring that such products are safe, efficacious and of an acceptable standard for use (9.12).

30. The use of frozen semen in artificial insemination should continue (10.1).

31. There should be automatic five-yearly reviews of semen and egg deposits (10.8).

32. There should be a maximum of ten years for the storage of embryos after which time the right to use or disposal should pass to the storage authority (10.10).

33. When one of a couple dies the right to use or dispose of any embryo stored by that couple should pass to the survivor. If both die that right should pass to the storage authority (10.12).

34. Where there is no agreement between the couple the right to determine the use or disposal of an embryo should pass to the storage authority as though the ten year period had expired (10.13).

C.. *Service provision*

35. Funding should be made available for the collection of adequate statistics on infertility and infertility services (2.14).

36. Each health authority should review its facilities for the investigation and treatment of infertility and consider the establishment, separate from routine gynaecology, of a specialist infertility clinic with close working relationships with specialist units, including genetic counselling services, at regional and supraregional level (2.16).

37. Where it is not possible to have a separate clinic, infertility patients should be seen separately from other types of gynaecological patient, wherever possible (2.16).

38. The establishment of a working group at national level made up of central health departments, health authorities and those working in infertility, to draw up detailed guidance on the organisation of services (2.17).

39. Consideration be given to the inclusion of plans for infertility services as part of the next round of health authority strategic plans (2.18).

40. IVF should continue to be available within the NHS (5.10).

41. One of the first tasks of the working group, whose establishment we recommend in 2.17, should be to consider how best an IVF service can be organised within the NHS (5.11).

D. *Legal limits on research*

42. The embryo of the human species should be afforded some protection in law (11.17).

43. Any unauthorised use of an in vitro embryo would in itself constitute a criminal offence (11.18).

44. Legislation should provide that research may be carried out on any embryo resulting from in vitro fertilization, whatever its provenance, up to the end of the fourteenth day after fertilization, but subject to all other restrictions as may be imposed by the licensing body (11.30).

45. It shall be a criminal offence to handle or to use as a research subject any live human embryo derived from in vitro fertilization beyond that limit, ie fourteen days after fertilization (11.22).

46. No embryo which has been used for research should be transferred to a woman (11.22).

47. Any unlicensed use of trans-species fertilization involving human gametes should be a criminal offence (12.3).

48. The placing of a human embryo in the uterus of another species for gestation should be a criminal offence (12.9).

49. The proposed licensing body promulgates guidance on what types of research, apart from those precluded by law, would be unlikely to be considered ethically acceptable in any circumstances and therefore would not be licenced (12.16).

50. Unauthorised sale or purchase of human gametes or embryos should be made a criminal offence (13.13).

F. *Legal changes*

51. The AID child should in law be treated as the legitimate child of its mother and her husband, where they have both consented to the treatment (4.17).

52. A change in the law so that the semen donor will have no parental rights or duties in relation to the child (4.22).

53. Following the English Law Commission, that it should be presumed that the husband has consented to AID, unless the contrary is proved (4.24).

54. The law should be changed so as to permit the husband to be registered as the father (subject to 4. 17; 4.25).

55. Legislation should provide that when a child is born to a woman following donation of another's egg the woman giving birth should, for all purposes, be regarded in law as the mother of that child, and that the egg donor should have no rights or obligations in respect of the child (6.8).

56. The legislation proposed in 4.25 and 6.8 should cover children born following embryo donation. (see recommendations 53 and 54 ;7.6).

57. Legislation should be introduced to render criminal the creation or the operation in the United Kingdom of agencies whose purposes include the recruitment of women for surrogate pregnancy or making arrangements for individuals or couples who wish to utilize the services of a carrying mother; such legislation should be wide enough to include both profit and non-profit making organisations (8.18).

58. Legislation should be sufficiently wide enough to render criminally liable the actions of professionals and others who knowingly assist in the establishment of a surrogate pregnancy (8.18).

59. It be provided by statute that all surrogacy agreements are illegal contracts and therefore unenforceable in the courts (8.19).

60. Legislation should provide that where a person dies during the storage period or cannot be traced at a review date the right of use or disposal of his or her frozen gametes should pass to the storage authority (10.8).

61. Legislation be introduced to provide that any child born by AIH who was not in utero at the date of the death of its father shall be disregarded for the purposes of succession to and inheritance from the latter (10.9).

62. Legislation be enacted to ensure there is no right of ownership in a human embryo (10.11).

63. For the purposes of establishing primogeniture the date and time of birth and not the date of fertilization shall be the determining factor (10.14).

64. Legislation be introduced to provide that any child born following IVF, using an embryo that had been frozen and stored, who was not in utero at the date of the death of the father shall be disregarded for the purposes of succession to and inheritance from the latter (10.15).

A5. *CONCLUSION*

The Committee of Inquiry worked hard to produce its report, both in the time allotted, and, as we believe, with reasonable jargon-free clarity. That must, however, be for readers to judge. What I hope is that it will not have seemed, to those who have read it, a thoughtless or casual piece of work. We did our very best to consider all the arguments, and all the doctrines and expressions of feeling that came before us. We had, as well, to take account of our own very various opinions, which changed, in many cases, as we got deeper into the subject. But it is plainly not enough to plead that the report was the outcome of hard work and serious thought: so are many of the worst books in the world. The question has to be raised of its status. Will it, and should it, be taken as in any way authoritative? This in turn leads to the more general question, What is the standing of Committees of Inquiry such as ours?

In the first place, this was not, and could not be a committee of experts. Our task, as has been emphasised in the foregoing pages, was primarily to give advice to Ministers, based on moral judgments; and there is no such thing as a moral expert. Perhaps this point should be elaborated. Peter Singer and Deane Wells in their useful book The Reproductive Revolution (Oxford, 1984) argue that ethical committees set up to advise governments, if they are composed as ours was, with a general intention to include a fair number of different points of view, are bound to produce wishy-washy and feeble reports. The only way such a committee can produce the appearance of consensus out of pluralism is to give with one hand and take away with the other; to put one point of view and then immediately weigh against it another, until the issue is irrevocably fudged. I hey therefore argue that committees of inquiry into ethical issues should be made up of ethical experts. They realise that many people will find the idea of such an expert repugnant. But, they say, if reason and logical argument have any role to play in ethics it follows that thc first requirement of the expert is to be able to reason well and detect errors in his own or other people's reasoning. In this sense at least there could be agreed experts. But there are other requirements too. An expert in ethics must understand the nature of ethics and the meaning of moral concepts. He may usefully have a fair knowledge of major ethical theories such as utilitarianism, or

theories of rights or of justice. Finally an expert must be able to learn salient facts relevant to the issues to be settled.

Ethical experts so described do not sound very threatening. They do not sound like philosopher kings, who mysteriously know things that other people do not, or who have access to moral truths hidden from ordinary people. Indeed they sound like a collection of reasonably intelligent first-year philosophy students, following an introductory course in moral philosophy, and capable of benefitting from books and lectures. But of course it would be totally misleading to call such people experts. The only point of the expression is to suggest that their conclusions should be accepted without question. Other people, both Ministers who have sought their advice, and the public at large, must be prepared to say "the experts have decided that this or that is right; we are in no position to disagree." But no-one would say this kind of thing about the sort of "experts" Singer and Wells suggest. No-one would suppose for one moment that their statements carried any special authority. In matters of life and death, of birth and of the family, no-one is prepared to defer to judgments made on the basis of a superior ability in philosophy. For these are areas which are central to morality, and everyone has a right to judge for himself. Such issues indeed lie at the heart of society; everyone not only wants to make their own choices but are bound to do so. And this is why there cannot be moral experts. Everyone's conscience is his own. The Protestant tradition founded on such a belief runs very deep in this country.

In fact the question whether there are moral experts or not is something of a red herring. For even if all the members of the Inquiry had been professionally trained philosophers, even if they had been much more professional than Singer and Wells suggest, still they probably would not have agreed with one another. People feel strongly on the matters we had to discuss, and they feel in different ways, and this would have been true even if all members had been expert logicians, and had read the works of John Stuart Mill, and John Rawls. It cannot be too strongly emphasized that in questions of morality, though there may be better and worse judgments, there is no such thing as a correct judgment. That being so, no judgment can be imposed by one person on another as the only right or possible or proper judgment to make (even though each of us may feel that his judgment is manifestly best). This is why the notion of experts is not only out of place, but totally unacceptable.

If it is agreed, then, that there are no moral or ethical experts, what advantage do members of a committee such as ours have over other members of the public? Why should we have presumed to advise Ministers on matters with which everyone is equally concerned, and has an equal right to be thought competent? First, I suppose, it can be said that a committee, having been asked to make recommendations, has time to think about the issues. And this leads to the second and major advantage. They are in a position, through the civil service who form their secretariat, to discover as many facts as they can rele-

vant to their enquiry, and to canvas as many opinions as they have time to listen to. All such Inquiries take written evidence, and most, including our own, seek oral evidence as well so that they can have the facts further explained or discuss the opinions in greater depth. People nearly always think that such committees take too little evidence, or pay too little attention to it; but I doubt whether this is so. They generally do the best possible in the allotted time. In this way, then, members of the committee, though at the beginning they may have been both ignorant and prejudiced, gradually acquaint themselves with the complexities of the facts and the differing moral values involved in the facts. So at the end though they are not moral experts, they are nevertheless in a position to base their judgments on knowledge. In the case of our Committee, for example, it was especially necessary that we should become familiar with the nature of early embryonic development, as far as is possible in the present state of scientific knowledge. We also had to distinguish various different forms of infertility treatment, and try as far as we could to ascertain their likely success rate. None of these things was particularly difficult to grasp, but some of them were quite difficult to find out, and in any case the ordinary public, and the "lay" members of the Committee were by no means familiar with the facts at the beginning. In these kinds of ways, then, though members of the Committee were not necessarily wiser than other people they became, and had a duty to become, better informed.

In one sense, then, the purpose of a committee such as ours is educational. For it must be the aim of the report that issues from it to share the knowledge which the committee has had time to gain, and to explain how their judgments flow from this knowledge. The explanation contained in the report, its educational content, is directed both to members of the public who are interested (and in our case that was practically all of society), and also to Members of Parliament who will have to consider the question of legislation.

It is often said that committees are set up only when Parliament wants to postpone legislation, to give themselves a breathing space. For it is very disagreeable to have to legislate on a controversial non-party matter which has wide public effects and the longer it can be put off the better. There is much truth in this. No government can look forward to legislating on matters in regard to which they know in advance that many voters will be outraged whatever they do. They may well wish to put off the evil hour. Nevertheless, on a more charitable view, it can be argued that if they did not establish a committee, Ministers would have to seek advice only from their own civil servants. Civil servants are often extremely cautious in the advice they give; and, much more important, they are necessarily secretive. No-one in the public at large knows who the particular civil servants are who proffer advice to Ministers. There is no guarantee that a variety of different views are considered, though doubtless this often happens. A committee of inquiry, on the other hand, though not exactly accountable to the public, is nevertheless far

more open in its work, and a great deal less anonymous than the civil service. For this reason, if for no other, I believe that Ministers are fully justified in seeking advice in this way.

But, it may be said, why does a Minister not simply listen to the public? Why need he establish this go-between body, often seen as a cumbersome, expensive and inefficient extra, neither society itself, nor civil servants whose proper job it is to advise? The answer to this is largely implicit in what has already been said. An Inquiry is allowed time for fact-finding and reflection, and for sorting out the differences of opinion within society of which individuals may be unaware. But in addition there are obvious difficulties in the way of consulting "society as a whole". Who speaks for this creature? Is it the man on the Clapham omnibus, or those people who feel so strongly about a particular issue that they have formed themselves into a pressure group? Ministers would be a prey to pressures from all sides and would have the greatest difficulty in sorting out the sensible from the silly, the reasoned from the hysterical, the sane from the mad. I believe, in fact, that there may be an increasing number of issues where a gobetween is necessary and desirable. People increasingly demand that legislation, when it comes, should be justified. When legislation follows a reasonably well-set-out report such justification is easy, the work has already been half done. Even if legislation does not take the form recommended by the Inquiry, still it is easier to explain the points of divergence if there is available a document which everyone can read and understand.

It has to be remembered that Ministers are not bound to follow advice they are given by committees of inquiry. The report is only advice. The recommendations begin to have force only if they seem sensible and persuasive to Ministers and their civil servants. There is indeed often disappointment on the part of members of committees who have worked hard and given the best advice they could, after what may seem endless consideration, only to see their report pigeon-holed forever. Equally, there must often be disappointment on the part of Ministers, who, understandably enough, may hope for a solution to a problem essentially insoluble. In the case of our Committee, for example, it was hoped, I now see, that the cool and reasonable voice of philosophy would reconcile the irreconcilable, and find a compromise where none can exist. There may even have been a secret belief that there is a right solution which could be proved right, if it were only found. But Ministers, like the rest of humanity, have to realise that in matters of morality this is not possible. Society may value things, genuinely and quite properly, which are incompatible with each other. Society as a whole values advances in science, especially in medicine; it values the possible new relief for the infertile, and the new hope of controlling crippling and disabling diseases. But the research upon which such advances depend seems to run counter to another highly prized value, the absolute sanctity of human life from its very earliest stage

of development. There is, as the report itself demonstrates, no way of reconciling these values, in the sense of ensuring that everyone can be satisfied with a solution, that no-one will feel that too great a sacrifice is being asked. The majority of us held that the sanctity of human life in general can be upheld even if the very earliest and least developed embryos were used in research. But not everyone agrees. In the end it must be for Parliament to come to a decision about which value to place higher.

For there is no doubt that, whether or not the recommendations of the Inquiry are accepted in detail, there is agreement in society on one point: that legislation is necessary. Perhaps it would be true to say that our report had two main purposes, the first, as I have suggcsted above, broadly educational, the second practical, to help bring about changes in the law. At the educational level, we hoped among other things to cast some light on the new kinds of family that are becoming possible, and perhaps to influence the attitudes of the medical profession towards infertility treatment. As to the second purpose, we were conscious of an increasing sense of urgency that controls should be introduced where none exist, and that the law should be brought up to date, so that society may be protected from its real and very proper fear of a rudderless voyage into unknown and threatening seas.

Appendix B - *Opinion of the Court of the State of Tennessee, Judge W. Dale Young*, Davis vs. Davis, No. E-14496, 1989

The trial was for custody of seven frozen embryos of 4-8 cells. Mrs Mary Sue Davis wants them implanted in her womb against the wishes of her former husband, Mr. Junior L. Davis.

The Court declared that from fertilization the cells of human embryos at this stage are differentiated and specialized to the highest degree of distinction. Thus, the Aristotelian principle of *final finality* is applied to human beings, so that embryos are considered children rather than property. The Court treated the trial like a dispute for children following a divorce and consequently considered the interest of embryos-children as a priority was respect to the interest of parents.

It should be remembered that with a 1973 decision the U.S. Supreme Court legalized the abortion (Roe vs. Wade, 93 U.S. Supreme Court 705, 1973).

The Supreme Court believed that the main question is if unborns of the first and second quarter of pregnancy should be legally protected like born babies (pp. 156-157 of the sentence). The crucial point was avoided about answering: "We need not resolve the difficult question of when life begins" (p. 159). The dispository rulings were unchanged until 1989, when the Supreme Court declared that there is no reason why the interest of a single State in protecting unborn human life should be limited to viability (Webster vs, Reproductive Health Service, Et A1, 109 Supreme Court Reporter, 3040, 1989). The sentence in the trial Davis vs. Davis faces up to crucial points that Supreme Court avoided, i.e. beginning of human person.

The Appendix includes the following original documents:

B1. OPINION OF THE COURT

IN THE CIRCUIT COURT FOR BLOUNT COUNTY,
TENNESSEE, AT MARYVILLE, EQUITY DIVISION (DIVISION I)

JUNIOR L. DAVIS Plaintiff,
Vs.
MARY SUE DAVIS, Defendant,
Vs.
RAY KING, M .D ., d/b/a
FERTILITY CENTER 0F EAST TENNESSEE, Third Party Defendant.

OPINION OF THE COURT

In this domestic relations case, the only issue before the Court is the disposition of seven cryogenically frozen embryos maintained by the Third Party Defendant and the product of *in vitro* fertilization undertaken by the Plaintiff and the Defendant.
The case is one of first impression.
In its opinion below, the Court has made certain findings of fact and conclusions of law resulting in judgment.
The salient findings, conclusions and the judgment are summarized as follows, to-wit:

(1) Mr. and Mrs. Davis undertook *in vitro* procedures for the purpose of producing a human being to be their child.
(2) The seven cryogenically preserved embryos are human embryos.
(3) American Fertility Society Guidelines are for intra-professional use, are not binding upon the Court, but are of probative value for consideration by the Court.
(4) The term "preembryo" is not an accepted term and serves as a false distinction between the developmental stages off a human embryo.
(5) From fertilization, the cells of a human embryo are differentiated, unique and specialized to the highest degree of distinction.
(6) Human embryos are not property.
(7) Human life begins at conception.
(8) Mr. and Mrs. Davis have produced human beings, in *vitro,* to be known as their child or children.
(9) For domestic relations purposes, no public policy prevents the continuing development of the common law as it applies to the seven human beings existing as embryos, *in vitro,* in this domestic relations case.

(10) The common law doctrine of *parens patriae* controls children, in vitro.
(11) It is to the manifest best interests of the child or children, in vitro, that they be available for implantation.
(12) It serves the best interests of the child or children, *in vitro,* for their Mother, Mrs. Davis, to be permitted the opportunity to bring them to term through implantation.

JUDGMENT OF THE COURT: The temporary custody of the seven cryopreserved human embryos is vested in Mrs. Davis for the purpose of implantation. All issues of support, visitation, final custody and related issues are reserved to the Court for consideration and disposition at such time as one or more of the seven human embryos are the product of live birth.

B2. APPENDICES TO OPINION OF THE COURT

Because of much public interest in the case, Appendix A, will assist the parties and the public to understand some fundamental rules and principles required to be applied the Court in the process of deciding the case. Appendix B is the Court's summary of the testimony given in the case over a period of almost three days (August 7, 1989, August 8, 1989 and August 10, 1989). Appendix C is footnote references to the Court's Findings of Fact and Conclusions of Law section of the Opinion.

FINIDINGS OF FACT AND CONCLUSIONS OF LAW

The Davises - Their Marriage

I based on the record before it, the Court finds that Mr. Davis is a gentleman, he is 30 years of age, employed as an electrician and a refrigeration technician by the Maryville Housing Authority, Maryville, Tennessee, earning about 17,500.00 annually. Mrs. Davis is a lady; she is 28 years of age who, at the trial, was employed by the Sea Ray Boat Company, Vonore, Tennessee, as a sales representative earning about 18,000.00 annually. Subsequent to the trial, Mrs. Davis has become domiciled in the state of Florida.[1]

Infertility of Mrs. Davis

Mr. and Mrs. Davis have been married about nine years. They very much wanted to have a family, but after Mrs. Davis suffered five tubal pregnan-

cies, her physician advised and she undertook surgical treatment which rendered her incapable of natural conception. The Court finds that Mrs. Davis suffered significant trauma and pain resulting from the parties' attempts to procure their family by way of natural childbirth. In vitro fertilization[2] is the only option now available to her to have her own child.

In Vitro and Adoption Attempts

Remaining committed to having a family, Mr. and Mrs. Davis sought the advice and counsel of Dr. Ray Ring in the Fall, 1985, became familiar with and participated in the *in vitro* fertilization program under Dr. King's direction and guidance. Dr. King was assisted by his colleague, Dr. Charles A. Shivers, who performed the necessary laboratory work in connection with the *in vitro* fertilization program. In addition, Dr. King was assisted by his patient coordinator, Deborah Cooper McCarter, a Registered Nurse and Dr. King's administrative assistant.

After some six attempts by the couple to produce a child through the *in vitro* fertilization process, resulting in no pregnancy, the parties temporarily suspended their participation in the program and sought to obtain a child through adoption. The adoption process did not work, and the parties abandoned adoption attempts and returned to the *in vitro* fertilization program conducted by Dr. King.

Cryopreservation Technique

In the Fall, 1988, Mrs. Davis learned of the new cryopreservation[3] program sponsored by King's clinic whereby several ova[4] could be aspirated[5], inseminated[6]in the laboratory and if the insemination process produced fertilized zygotes, the zygotes[7] could be allowed to mature in the laboratory to a medically accepted point for the purpose of either implantation[8] or cryopreservation for future implantation. Mrs. Davis discussed the new technique with her husband and armed with that information the parties proceeded to re-enter the program with the intent of producing a child or children which would constitute their family.

Further In Vitro Attempts

It is undisputed in the record and the Court finds that in order to prepare her reproductive system to produce quality ova for insemination, Mrs. Davis

went through many painful, physically tiring, emotionally and mentally taxing procedures, both before the December, 1988 events and after those events. As a prospective Mother, she spent many hours of anxious moments waiting for word as to whether she would be a Mother. The cryopreservation technique offered Mrs. Davis much welcomed relief from the rigors of the full procedure each time in *vitro* fertilization was attempted.

It is further undisputed and the Court finds that Mr. Davis donated the sperm for the December, 1988 insemination and resulting fertilization process, that he spent many anxious hours, early in the morning and late at night, waiting at the hospital while Mrs. Davis underwent the aspiration and implant procedures and that he spent many anxious hours, as a prospective Father, awaiting word as to whether he would be a Father.

On December 8, 1988, nine ova were aspirated from Mrs. Davis, nine ova were inseminated with Mr. Davis' sperm by Dr. Shivers in his laboratory and the nine ova were fertilized, producing acceptable zygotes for implantation according to the consideration by Dr. King and Dr. Shivers. The zygotes were permitted to mature under laboratory conditions, variously developing from the four-cell clevage[9] stage to the eight-cell cleavage stage, all of which were found to be of excellent quality by Dr. Shivers and Dr. King. On December 10, 1988, two of the embryos[10] were implanted in Mrs. Davis, neither of which resulted in pregnancy, and the remaining seven embryos were placed in cryogenic storage for future implantation purposes.

Cryopreservation for Davis Family Only

The Court finds that before their embryos were committed to cryogenic storage, Mr. and Mrs. Davis knew, were aware of and had discussed between themselves (and with at least Dr. Shivers) the fact that reliable medical data indicated the practical storage life of the human embryos would probably not exceed two years. Mr. and Mrs. Davis had discussed the fact that if Mrs. Davis became pregnant as a result of her implant on December 10, 1988, the possibility existed that the remaining seven embryos in cryopreservation could be donated to another infertile couple, but the parties made no decision about that matter.

The Court further finds that during the time between December, 1988 and the filing of the original Complaint in this case (February 23, 1989), Mr. and Mrs. Davis discussed the possibility of and had tentatively planned to implant at least one of the cryopreserved embryos in Mrs. Davis' body in March or April, 1989.

The Intent of Mr. and Mrs. Davis

The Court Further finds that Dr. King and Dr. Shivers engaged in a concerted effort with the Davises to help Mr. and Mrs. Davis become parents, both as to the IVF procedures before and after the utilization of the cryopreservation technique; and the Court finds and concludes that Mr. and Mrs. Davis participated in the IVF program, both before and after the employment of the cryopreservation technique, for one purpose: to produce a human being to be known as their child.

The Issues for the Court

There is no fact in the record to persuade the Court that Mr. and Mrs. Davis discussed or had any thought of changing their intent until the Complaint was filed in this case on February 23, 1989 and it must be determined from the proof whether Mr. and Mrs. Davis accomplished their intent. That determination is to be made by the answer to the most poignant question of the case: *When does human life begin?*

To answer this question, several additional questions must first be asked and answered, based on the record in this case: Are the embryos human? Does a difference exist between a preembryo[11] and an embryo? Are the embryos beings? Are the embryos property that may become human beings?

Human Embryos- The Experts

Of the eight witnesses who gave testimony in this case, five of the witnesses presented themselves possessing the requisite knowledge, special skill, experience and education necessary to establish themselves as experts[12] in their respective fields of professional endeavor.

Because of her special training as a Registered Nurse, Mrs. McCarter is an expert witness; Dr. King[13] is a Medical Doctor and is a well qualified specialist in the field of Infertility/Reproductive Endocrinology; Dr. Shivers[14] is a well qualified Embryologist and is experienced in the laboratory work necessary for *in vitro* fertilization and cryogenic storage of human embryos; Professor Robertson[15] is an eminently qualified Professor of Law whose scholarly treatises, dealing primarily with non-coital reproduction, have served as the basis for consideration of many medical-legal subjects; and Dr. Jerome Lejeune[16] is an emminently qualified Medical Doctor, Doctor in Science, Professor of Fundamental Genetics and recognized throughout the world in his specialty, Human Genetics.

The expert witnesses (except Mrs. McCarter) offered opinions to assist the Court in determining when human life begins. It should be noted that all four

witnesses agree that the seven cryopreserved embryos are human; that is, "belonging or relating to man; characteristic of man...."[17]
The Court finds and concludes that *the seven cryopreserved embryos are human.*

Preembryo vs. Embryo: Human Beings

Three of the experts, however, respectfully disagree with Dr. Lejeune that the human embryos are in "being"; that is, in "existence; conscious existence; as, things brought into being by generation...." or living, alive[18]. The three experts insist the entities are at a stage in development where they simply possess the potential for life. In the analysis of the testimony offered on the point of whether or not the seven embryos are human beings, the Court believes it is helpful to even further condense the already summarized opinion testimony (Appendix B)[19] of each expert on the subject:

(1) Dr. *Irving Ray King:* There is a first a one-cell gamete[20], a zygote (after the first cell divides), a preembryo (up to 14 days after fertilization) and finally an embryo (after 14 days and upon cell differentation).
(2) Dr. *Charles Ales Shivers:* A preembryo is a zygote up to 11-14 days and consists largely of undifferentiated cells; that after attachment to the uterus wall and the appearance of the primitive streak, the cells then become different; that is organs, organ systems, body parts and the like are formed. At the time of fertilization, genetic controls are "locked in forever" and control who the preembryo will later be, but, "...as far as we know..., to my knowledge..., there is no way to distinguish the cells [at the zygote stage]... They are the same [undifferentiated],..."
(3) *Professor John A. Robertson:* A human preembryo is an entity composed of a group of undifferentiated cells which have no organs or nervous system. That at about 10-14 days, the preembryo attaches itself to the uteran wall, develops its primitive streak and life then commences. It is " not clear..." that a human preembryo is a unique individual; that simply because fertilization has occurred, the gamete contributors have not procreated[21].
(4) Dr. *Jerome Lejeune:* Each human has a unique beginning (life) which occurs at the moment of conception. Embryo: "...that youngest form of a being...." Preembryo: there is no such word. There is no need for a subclass of the (embryo) called a preembryo, because there is nothing before the embryo; before an embryo there is only a sperm and an egg; when the egg is fertilized by the sperm the entity becomes a zygote; and when the zygote divides it is an embryo. When the first cell exists, all the "tricks of the trade" to build itself into an individual already exists. Shortly after fertilization at the three-

cell stage, a "...tiny human being..." exists. When the ovum is fertilized by the sperm, the result is "...the most specialized cell under the sun..."; specialized from the point of view that no other cell will ever have the same instructions in the life of the individual being created. No scientist has ever offered the opinion that an embryo is property. As soon as he has been conceived, a man is a man. New findings recited [Jeffrey's-DNA][22, 23] definitely prove differentation and that from the very beginning there exists an embryo.

Dr. King, Dr. Shivers and Professor Robertson rely at least to some degree on the report of the Ethics Committee of the American Fertility Society[24] in forming the basis of their opinions. Each makes a distinction between "embryo" and "preembryo" in conformity to the AFS guidelines.

The ethical considerations by the committee for the AFS were referred to in, cited and relied upon by the Brief[25] filed by Mr. Davis; testimony was given about the Committee and its work. Professor Robertson is a member of the Ethics Committee, Dr. King is a member of the American Fertility Society and various witnesses gave testimony indicating reliance on the Pronouncements of the Committee.

The AFS guidelines were published by the Society in September, 1986 after the Committe's last deliberation on April 14, 1986 in Norfolk, Virginia[26]. The guidelines were promulgated by the committee pursuant to the charge of the Society's President by letter dated November 7, 1984[27], requesting the committee to address ethical issues regarding reproduction and to disseminate the Committe's knowledge of these positions on those matters.

In its report, the committee defined the term "preembryo", and prefaced its definitions section with the following language:
"In order to avoid confusion, the committee found it necessary to adopt certain definitions *for the purposes of this document."* [Emphasis supplied][28]

The Committee then defined the word preembryo by this way:
"A *preembryo* is a product of gametic union from fertilization to the appearance of the embryonic axis. The preembryonic stage is considered to last until 14 days after fertilization. This definition is not intended to imply a moral evaluation of the preembryo." [29]

In reviewing the guidelines, it is of interest to call attention to several considerations set-forth in the report. One of those considerations is the recognition by the committee that
there are several respected views relative to the moral and legal status of a preembryo. The committee adopted this view:
"A third view - one that is most widely held - takes an intermediate position between the other two. It holds that the preembryo deserves respect greater than accorded to human tissue but not the respect accorded to ac-

tual persons. To the preembryo is due greater respect than any other human tissue because of its potential to become a person and because of its symbolic meaning for many people. Yet, it should not be treated as a person, because it has not yet developed the features of personhood, is not yet established as developmentally individual, and may never realize its biologic potential."[30]

Under the heading "Emerging Consensus on Preembryo Status", the following statement is made:

"The Ethics Advisory Board, for example, unanimously agreed in 1979 that "the human embryo *i.e., preembryo* in this Report) is entitled to profound respect, but this respect does not necessarily encompass the full legal and moral rights attributed to persons" (Ethics Advisory Board, 1979)." [Emphasis supplied][31].

In the Committee's summary of points of special interest, the following is found:

"The Committee finds that the human preembryo is not a person but is entitled to respect because it has the potential to become a person. This view limits the circumstances in which a preembryo may be discarded or used in research,..."[32]

The Court finds and concludes that the report of the Ethics Committee of the American Fertility Society constitutes guidelines for those professionals involved in the field of fertility treatment; as Professor Robertson testified, they constitute guidelines for these professionals to be primarily utilized for litigation purposes. In other words, they are the selfimposed standards one professional would testify must be met by another professional, for example, in a medical malpractice suit.

The guidelines do not have the force and effect of the law but must be considered by this Court for whatever probative[33] value they may possess.

The Court finds and concludes that the guidelines of the AFS do not serve as authority for this Court in making a determination of whether the seven human embryos in question are human beings, and concludes the term "preembryo" has arisen in this suit primarily because the AFS Committee chose that term .to avoid confusion for the purposes of its own guidelines. The Court has made a thorough search of encylopedias and dictionaries of which the Court may take judicial notice and the Court can nowhere find the word "preembryo" defined nor can the Court find even a reference to that term.

Careful scrutiny of the testimony and an exhibit at the trial gives the Court even greater assurance that the term "preembryo" serves as a false distinguishing term in this case.

Exhibit 8, at the trial, are the handwritten notes of Dr. King. Dr. King's notes concerning the status of his patient, Mary Davis, covering the period of time from December 8, 1988 at j 10:08 a.m. through and including December 10, 1988 at 3:31 p.m., all refer to the ova after fertilization as "embryo"; and the last document in that series of notes makes reference to the "condition of embryo" and variously describes the seven embryos as "...4 cell embryo-perfect...."

The Court finds it curious that Dr. Ring, who adopts the AFS guideline definition of a "preembryo" to distinguish it from an "embryo" would in his own notes call them embryo(s).

Counsel for Mr. Davis furnished the Court a revised copy of Professor Robertson's paper[34] written recently by him (probably finished in July, 1989), dealing specifically with the case at bar. The solution by Professor Robertson setforth in his paper is the same solution he offered through his testimony. .He was asked about that opinion on direct examination by Counsel for Mr. Davis; he was cross-examined by Counsel for Mrs. Davis about his opinion cited therein. The paper is entitled *"Resolving Disputes Over Disposition of Frozen Embryos"*; from the title page through 31 additional pages (the entire text), professor Robertson, speaking about the case at bar, referred time and again to the "embryos".

It is curious that this very scholarly paper does not reflect the very fine distinction between "preembryo" and "embryo" made by Professor Robertson throughout his testimony at the trial.

The Court is persuaded that the debate between these most sincere and knowledgeable witnesses perhaps boils down to much the same debate Sweet Juliet had with herself when she rationalized her strong affection for Romeo, who was not a Montague:

> "...Tis but thy name that is my enemy;
> Thou art thyself, though not a Montague.
> ...What's in a name? that which we call a rose
> by anyother name would smell as sweet...." [35]

The Court finds and concludes there is no such term as "preembryo"; that to use the term in the context of this case creates a false distinction, one that does not exist. The Court finds and concludes the seven cryopreserved entities are human embryos.

DNA Manipulation Verifies Uniqueness

Based on the analysis of the testimony comprising the positions of Dr. King, Dr. Shivers and Professor Robertson, it appears that where these gentlemen most sharply differ with Dr. Lejeune is in the area of cell differentation. Dr. Lejeune, of course, gives emphatic testimony that the cells are especially differentiated and that such position is a proven scientific fact.

The term "differentiate"[36] means to distinguish by a specific difference. If the cells, therefore, of a four cells zygote are undifferentiated, the cells lack any distinction; a skilled scientist could not distinguish the cells of one zygote from those of another zygote nor could the scientist distinguish between any of four cells within the hypothetical zygote. Dr. Lejune bases his emphatic opinion to the contrary ("...the most specialized cell under the sun...") on a complicated scientific process of manipulating and reading the DNA molecule, characterized by him as new findings which definitely prove differentiation, now known through the science of molecular genetics[37] beyond any doubt.

The testimony given by Dr. Lejeune relative to conclusive proof induced through DNA examination is highly technical, incapable of observation by the Court and requires the Court to either accept or reject the scientist's conclusion that it can be done. While this factor requires the Court to proceed with special caution, it does not of itself render testimony or other evidence based on this highly specialized field of molecular genetics unreliable[38].

Quite to the contrary, DNA profiling, through "genetic fingerprint" evidence by which strands of coating found in genetic molecule of deoxyribonuclei acid (DNA), has been accepted as competent and admissable evidence in Courts of law, is considered reliable, is performed by a number of laboratories around the world and is generally accepted in the scientific community[39].

As indicated in footnote 39, the *Andrews* case was decided by the United States District Court of Appeals of Florida, Fifth District, on October 20, 1988 and review of the case was denied in 1989. It is the only case this Court has been able to find dealing with the reliability of the DNA procedures so forcefully relied on by Dr. Lejeune. *Andrews* approves the reliability of DNA profiling, a process very similar to the one described and relied on by Dr. Lejeune.

Both Dr. Shivers and professor Robertson cite undifferentiated cells as one basis for their opinions that human embryos are not human beings, but each hedges on the point. Dr. Shivers says "as far as he knows" there is no way to distinguish the cells; that they are undifferentiated; and Professor Robertson says "it is not clear that a unique individual" then exists.

The testimony of Dr. Lejeune stands unrebutted in the record; the Court accepts his testimony that DNA manipulation of molecules of human chromosomes[40] reliably proves cell differentation. The Court is persuaded that this relatively new technique opens a tiny window to the world to see and be aware of the most intimate and intricate details of man from his very beginning.

The Court finds and concludes that the cells of human embryos are comprised of differentiated cells, unique in character and specialized to the highest degree of distinction.

Dr. Shivers and Professor Robertson testified that the preembryo is not a being because he or she has no observable organs or nervous system, no body parts. Dr. Lejeune, on the other hand, says a man is a man; that upon fertilization, the entire constitution of the man is clearly, unequivocally spelled-out, including arms, legs, nervous systems and the like; that upon inspection *via* DNA manipulation, one can see the life codes for each of these otherwise unobservable elements of the unique individual.

The testimony of Dr. Lejeune stands unrebutted in the record; the Court accepts his testimony founded on the fact that DNA manipulation of the molecules of human chromosomes reliably detect these features of man; that the life codes for each special, unique individual are resident at conception and antimate the new person very soon after fertilization occurs.

The argument that the human embryo may never realize its biologic potential, it appears to the Court, is statistically[41] and speculatively true, but is a hollow argument. A newborn baby may never realize its biologic potential, but no one disputes the fact that the newborn baby is a human being. And if it is a part of the logic that an embryo, only a few hours old and perhaps only four cells in development, is not a being because it cannot sustain itself, then we must also reason that a newborn baby (which no one disputes is a human being) can likewise not sustain itself without the aid and assistance of a mature individual (hopefully its Mother); and we must reason the newborn also lacks a necessary criteria to qualify as a human being. For surely it is good logic that a newborn human being, left naked in a field without the sustenance, aid and assistance of another human being will surely die; it is utterly helpless; it, too, lacks the capacity to sustain itself.

It must be noted that one solution offered for the Court's disposition of the embryos is to allow them to die a passive death. Mrs. Davis reasons that in order to die, one must first live. Her logic is appealing, persuasive and accepted by the Court.

The technical arguments of human genetics aside, Mr. Davis asserts the theory that embryos constitute property jointly owned by the parties[42]; that the embryos do not constitute life, but have the potential for life. Professor Robertson also adopts this view and suggests the embryos, at this stage of development, might properly be designated fungible property[43].

In light of all the proof before the Court, it is impossible for the Court to find the assertion well founded in logic and good reason. Perhaps Tennessee's Senator Albert Gore best expressed the Court's apprehension when then Congressman Gore (in 1984), hearing a similar theory asserted during testimony before the U.S. House of Representatives' Subcommittee on Investigations and Oversight of the Committee on Science and Technology, said:

> "I disagree that there's just a sliding scale of continuum with property at one point along the spectrum and human beings at another. I think there's a sharp distinction between something that is property and something that is not property...."[44]

The Court Finds and concludes that by whatever name one chooses to call the seven Frozen entities-be it preembryo or embryo-those entities are human beings; they are not property.

Human Life Begins at Conception

The answer then, to the question: When does human life begin? from the record in this case, the Court finds and concludes that human life begins at the moment of conception[45]; that Mr. and Mrs. Davis have accomplished their original intent to produce a human being to be known as their child.

What then is the legal status to he accorded a human being existing as an embryo, *in vitro,* in a divorce case in the state of Tennessee?

For the purposes of the *Tennessee Wrongful Death Statute*[46], an unborn child is accorded status only if the child is viable at the time of injury; that is: if a child had achieved a stage of development where it could reasonably be expected to be capable of living outside the uterus. For the purposes of the *Tennessee Criminal Abortion Statute*[47], the child is accorded no recognized status during the first three months of its Mother's pregnancy. But the legislature for the state of Tennessee has not yet, and to the best of the Court's knowledge, information and belief, no state in the union has, established a public policy[48] declaring the rights to be accorded a human embryo, in *vitro,* in a divorce case.

In order to give effect to this Court's judgment, it is necessary to establish, in the absence of any authority to give the Court guidance, the status of these unborn human beings in this divorce proceeding.

As my learned colleague in the law, Professor Robertson, pointed out during his testimony, the recent Webster[49] case leaves open the door for a state to establish its compelling interest in protecting even potential human life by legislation declaring its public policy. Even as to the abortion issue, the *Webster* Court opined that it saw no reason why the state's interest in protecting potential human life should come into existence only at the point of viability[50].

The Court understands that both *Roe*[51] *and Webster*[49] dealt with questions of the constitutionality of abortion statutes and the Court's decisions in those cases have a profound effect on the states' compelling interest in the protection of human life, *but only as it deals with the abortion issue.*

In its research of Tennessee law, the Court finds only one case that gives it solace. In *Smith vs. Gore (*728 SW 2nd 738, 1987), a tort action was brought

for a wrongful pregnancy resulting from a failed tubal ligation. While the case deal in the main with the tort aspect of the claim, the Court in its discussion of public policy recognizes that the state places great value on human life. But of greater importance, it appears to the Court, is the Smith Court's consideration of the distinction between judicial decisions which infringe on the legislative right to set public policy and a Court's finding that no public policy prevents the continuing development of common law.

The function of the Courts is to declare the law as the Courts find it, and it is for the Legislature to weigh the affect (sic) and the consequences of legislation enacted[52]. The Legislature has exclusive and ample power to determine the public policy of the state[53]. The law in Tennessee, therefore, restricts this Court's role in declaring public policy. The Court is not free to establish what it believes to be the best policy for the state; rather, the Court must determine where public policy is to be found, what the specific public policy is, and how it applies to the case at hand[54]. For the find that no public policy prevents the continuing development of the common law is wholly different from positively declaring the public policy of the state[55].

This Court finds and concludes that for domestic relations purposes in Tennessee no public policy prevents the continuing development of the common law as it may specifically apply to the seven human beings existing as embryos, *in vitro,* in this domestic relations case. The Court is of the opinion, finds and concludes that the age-old common law doctrine of *parens patriae*[56] controls these children, *in vitro,* as it has always supervised and controlled children of a marriage at live birth in domestic relations cases in Tennessee.

The common law doctrine of *parens patriae* is defined as that power of the sovereign to watch over the interests of those who are incapable of protecting themselves[57]. It is well settled that Court's having historic Chancery or equity jurisdiction exercise and control the sovereign power called *parens patriae*[58]. The thrust of the equitable nature of this doctrine is that it turns its full focus on the best interests of the child; its concern is not for those who claim "rights" to the child, nor for those who claim custody of the child, nor for those who may suffer perceived or real inequities resulting from scrupulously guarding the child's best interest[59]. The doctrine of *parens patriae* is most commonly expressed as the "best interests of the child doctrine" and its sole objective is to achieve justice for the child[60]. In the case of very young children, it was a former practice in Tennessee for many years to confuse the so-called "Tender Years Doctrine" (the placing of children of tender years with their mother, regardless of the circumstances) with the "best interests of the child" rule. In 1987, our legislature amended the custody provisions of our Tennessee divorce statute to create a rebuttable presumption of parental fitness in child custody cases, mandating the long-standing test, however, "...as the welfare and interest of the child or children may demand...."[61].

In the case at bar, the undisputed, uncontroverted testimony is that to allow the parties seven cryogenetically preserved human embryos to remain so preserved for a period exceeding two years is tantamount to the destruction of these human beings. It was the clear intent of Mr. and Mrs. Davis to create a child or children to be known as their family. No one disputes the fact that unless the human embryos, *in vitro,* are implanted, their lives will be lost; they will die a passive death.

Mr. Davis strenuously objects to the anonymous donation of the human embryos even for their survival; Mrs. Davis wants to bring these children to term; the human embryos were not caused to come into being by Mr. and Mrs. Davis for any purpose other than the production of their family. Therefore, the Court finds and concludes that it is to the manifest best interest of the children, *in vitro,* that they be made available for implantation to assure their opportunity for live birth; implantation is their sole and only hope for survival. The Court respectfully finds and concludes that it further serves the best interest of these children for Mrs. Davis to be permitted the opportunity to bring these children to term through implantation.

It is the judgment of the Court that the temporary custody of the parties' seven cryogenically preserved human embryos be vested in Mrs. Davis for the purposes set-forth hereinabove, and that all matters concerning support, visitation, final custody and related issues be reserved to the Court for further consideration and disposition at such time as one or more of the seven cryogenically preserved human embryos are the product of live birth.

Mr. Christenberry, Counsel for Mrs. Davis, will prepare an appropriate Order, oursuant to and in accord with the provisions of the Court's Opinion, submit same to Counsel for Mr. Davis and to Counsel for Dr. Xing for approval as to form, and the Order will be tendered to the Court for entry on or before October 23, 1989, taxing the costs hereof to the Plaintiff.

This 21st day of September, 1989.

W. DALE YOUNG, Circuit Judge Fifth Judicial Distric, Tennesse

B3. FOOTNOTES FOR THE SECTION OF THE COURT'S OPINION DESIGNATED "FINDINGS OF FACT AND CONCLUSION OF LAW"

APPENDIX

[1] Pursuant to an in-chambers conference between the Court and Counsel of record on September 7, 1989, Counsel for Mr. and Mrs. Davis agreed that it would be stipulated that subsequent to August 10, 1989, Mrs. Davis became domiciled in the state of Florida. As of September 19, 1989, no order memorializing this stipulation has been tendered to the Court for entry.

[2] As used in the context of the Court's Findings of Fact and Conclusions of Law, *in vitro* fertilization means the fertilization of a human ovum by a human sperm in a

laboratory container. Testimony at the trial described the entire process, about which there is no dispute. The term is used by the Court interchangeably as *"in vitro"*, "IVF" or *"in vitro* fertilization".

[3] Cryopreservation is a procedure whereby the cells of plants or animals are subjected to freezing in a laboratory and unthawed through a step by step procedure for later use. Liquid nitrogen is generally utilized as the freezing agent.

[4] Ova are unfertilized human eggs.

[5] Aspiration is the process by which ova are surgically withdrawn from the ovary.

[6] Insemination is the placing together of the sperm and the ovum.

[7] Zygote: "fertilized ovum" *(Dictionary of Medical Terms for the Nonmedical Person,* Second Edition, 1989, Rothenberg Chapman)

[8] Implantation is the process whereby the physician deposits a zygote in the human uterus.

[9] Cleavage: "Process of dividing, as of the fertilized egg into successive multiples of cells, from the single cell; line: formed by a groove between two parts." *(Dictionary of Medical Terms for the Nonmedical Person,* Second Edition, 1989, Rothenberg & Chapman)

[10] Embryo: "...a beginning or undeveloped stage of anything...." *(Webster's New Collegiate Dictionary,* 1951, G. & C. Merriam Co.)

[11] Preembryo: The human entity existing before the passage of fourteen days of development, prior to attachment to the uterine wall and the development of the primitive streak. The term is used by some to distinguish a difference between a zygote in its early stages and an embryo in its later stages. The Court deals specifically with this terminology and makes a specific finding of fact about the term.

[12] Expert Witness: Reference is made to Appendix A relative to the way the opinion testimony of expert witnesses is to be treated under applicable Tennessee law.

[13] Dr. Irving Ray King is a Medical Doctor, licensed by the state of Tennessee and has been involved in the subspecialty of Gynecology, Infertility/Reproductive Endocrinology, for some twelve years. He operates the fertility Center of East Tennessee, Knoxville, Tennessee.

[14] See Exhibit 6 for the personal data sheet outlining Dr. Shivers' educational and professional involvement in biology, chemistry and embryology.

[15] See Exhibit 5 for Professor Robertson's *curriculum vitae.*

[16] Dr. Jerome Lejeune is a Medical Doctor, Doctor in Science, Promin magessor of Fundamental Genetics on the Faculty of Medicine of Paris, France, a Practioner at the Hospital des Enfants Malades, Paris, France, former Professor of Human Genetics at the California Institute of Technology, the discoverer of Down's Syndrome, recipient of the Kennedy Prize for the discovery of Down's Syndrome, recipient of the Memorial Allen Award Medal, for the discovery of Down's Syndrome, a member of the American Academy of Science; the Royal Society of Medicine in London, England, The Royal Society of Science in Stockholm, Sweden; the Science Academy in Italy; the Science Academy in Argentina; the Pontificial Academy of Science, the Vatican; the Institute of France of the Academy de Science Morale et Politique, Paris, France and the Academy of Medicine, Paris, France.

[17] *Webster's New Collegiate Dictionary* (Second Edition).

[18] *Webster's New Collegiate Dictionary* (Second Edition)

[19] Appendix B to the Court's Opinion constitutes a summarized version of the

testimony given by each witness at the trial; it does not purport to be transcript of the testimony.

[20] Gamete: "A matured sex cell or germ cell, usually haploid in chromosome number, capable of uniting with another of like origin to form a new plant or animal" (*Webster's New Collegiate Dictionary,* Second Edition)

[21] Procreate: "To generate and produce, to begat." (*Webster's New Collegiate Sictionary,* Second Edition).

[22] Dr. Alec Jeffreys: A British genetist.

[23] DNA: (Deoxyridonucleic Acid) "Large molecule, shaped like a double helix and found primarily in the chromosomes of the cell nucleus, that contains the genetic information of the cell. The genetic information is coded in the sequence of subunits (nucleotides) making up the DNA molecule." *(Dictionary of Medical Terms for the Nonmedical Person,* 2nd Edition, 1989, Rothenberg & Chapman).

[24] The Report is entitled "Ethical Considerations of the New Reproductive Technologies" and appears in the September, 1986 (Vol. 46, No. 3) as publication of *Fertility and Sterility,* Supplement 1, the official journal of the American Fertility Society. The American Fertility Society is sometimes referred to in the Opinion as "AFS".

[25] See Plaintiff's Brief in Support of Plaintiff's Statement of Issues, filed July 14, 1989.

[26] AFS Publication, vol. 46, No. 3, Page v.

[27] AFS Publication, vol. 46, No. 3, Page iii

[28] AFS Publication, vol. 46, No. 3, Page v, vi, vii.

[29] AFS Publication, vol. 46, No. 3, Page v, vi, vii.

[30] AFS Publication, vol. 46, No. 3, Page 29S.

[31] AFS Publication, vol. 46, No. 3, Page 305.

[32] AFS Publication, vol. 46, No. 3, Page 77S.

[33] Probative Evidence: "In the law of evidence "the effect of proof tending to prove, or actually proving. Testimony carrying quality of proof and having fitness to induce conviction of truth, consisting of fact and reason co-operating as a co-ordinate factors". *(Black's Law Dictionary,* 5th Edition)

[34] See Plaintiff's Brief In Support of Plaintiff's Statement of Issues, filed July 14, 1989, Page 5.

[35] *Romeo and Juliet* (Act II, Scene II)

[36] Differentiate: "1. to distinguish by a specific difference; develop differential characteristics or forms in. 2. to ascertair or express the specific difference of; discriminate...to acquire a distinct character; to become differentiated." *(Webster's New Collegiate Dictionary,* 2nd Edition)

[37] Molecular Genetics "that branch of genetics concerned with the chemical structure, functions, and replications of the molecules-deoxyribonucleic acid (DNA) ribonucleic acid (RNA)-involved in the transmission of hereditary information." *(Dictionary of Medical Terms for the Nonmedical Person,* 2nd Edition, 1989)

[38] *Andrews v. State of Florida,* 533 So. 2nd 841 (1988) (Review denied 1989)

[39] *Andrews v. State of Florida,* 533 So. 2nd 841 (1988) (Review denied 1989)

[40] Chromosome: "Threadlike structure in every cell nucleus that carries the inheritance factors (genes); composed of DNA...and a protein (usually histone). A human cell normally contains 46 chromosomes, or 22 homologus pairs and one pair of sex chromosomes; one member of each pair of chromosomes is derived from each parent" *(Dictionary of Medical Terms for the Nonmedical Person,* Second Edition, 1989)

[41] Dr. King and Dr. Shivers gave testimony to the effect that with normal coital sex, a pregnancy resulted in only about 25% of the cases; that in noncoital reproduction, such as in *vitro*, the chances of a pregnancy resulting were somewhat increased and that Mrs. Davis probably had about a 52% of becoming pregnant utilizing all seven cryogenetically preserved embryos.

[42] See Plaintiff's Original Complaint, Page 2, Paragraph 8. "Plaintiff alleges that said fertilized eggs at present constitute property jointly owned by the parties'...."

[43] Fungible Things: "Moveable goods which may be estimated and replaced according to weight, measure and number. Things belonging to a class, which do not have to be dealt with in *specie*...." (*Black's Law Dictionary*, 2nd edition)

[44] See Defendant's Brief filed July 17, 1989.

[45] *Conception:* "...beginning...." (*Webster's New Collegiate Dictionary*, Second Edition)

[46] *Tennessee Code Annotated 20-5-106(b).*

[47] *Tennessee Code Annotated 39-15-201(c)(1)(2)(3).* (The effective date of this statute is ,November 1, 1989)

[48] In *Smith v. Gore*, (728 SW 2nd 738), the Court said: "...nevertheless, public policy is the present concept of public welfare or general good.'" (citations omitted)

[49] *Webster v. Reproductive Health Services, Et Al*, 109 Supreme Court Reporter 3040 (1989)

[50] The term "viability" has the generally accepted meaning as set-forth in the *Tennessee Wrongful Death Statute*, which definition is set-forth in the text of the Court's Opinion.

[51] *Roe v. Wade*, 93 Supreme Court 705 (1973).

[52] *Royal Jewelers Co. of Knoxville v. Hake*, 205 SW 2nd 963 (1947)

[53] *Cavender v. Hewitt*, 239 SW 767 (1922)

[54] *Smith v. Gore*, 728 SW 2nd 738 (1987)

[55] *Smith v. Gore*, 738 SW 2nd 738 (1987)

[56] *Parens Patriae* "Father of his country, parent of the country. In England, the King. In the United States, the State, as a sovereign-referring to the sovereign power of guardianship over persons under disability...." *(Bleck's Law Dictionary*, 3rd Edition)

[57] *In Re: Baby M*, 525 Atlantic Reporter 2nd 1128 (1987)

[58] *In Re: Baby M*, 525 Atlantic Reporter 2nd 1128 (1987)

[59] *In Re: Baby M*, 525 Atlantic Reporter 2nd 1128 (1987)

[60] *In Re: Baby M*, 525 Atlantic Reporter 2nd 1128 (1987)

[61] *Tennessee Code Annotated 36-6-101(a)*

Appendix C. *Sentence of the Court of Appeals of Tennessee, eastern section*, Davis vs. Davis, filed September 13, 1990

IN THE COURT OF APPEALS OF TENNESSEE
EASTERN SECTION

JUNIOR LEWIS DAVIS, Plaintiff-Appellant
C/A No. 180 BLOUNT LAW
vs. Hon.W.DALE YOUNG JUDGE
MARY SUE DAVIS, Defendant-Appellee
REVERSED AND REMANDED

JANET L. MAYFIELD, Knoxville and CHARLES M. CLIFFORD, Maryville, for plaintiff-appellant
KURT ERLENBACH, Erlenbach & Erlenbach, P.A., Titusville, Fla., for defendant-appellee.
R.D. HASH, Maryville, *Amicus Curiae* and DAVID ZOLENSKY, American Civil Liberties Union Foundation of Tennessee, Nashville, *Amicus Curiae*.

OPINION
Franks, H.P.

In this divorce action, the sole issue on appeal is essentially who is entitled to control seven of Mary Sue's ova fertilized by Junior's sperm through the in vitro fertilization process. The fertilized ova are cryopreserved at the Fertility Center of East Tennessee in Knoxville.

The trial judge awarded "custody" of the fertilized ova of Mary Sue and directed that she "be permitted the opportunity to bring these children to term through implantation."

At the outset, it should be emphasized no pregnancy is involved. Both Mary Sue and Junior are now married to other spouses; moreover, neither wants a child with the other as parent[1].

There are significant scientific distinctions between fertilized ova that have not been implanted and an embryo[2] in the mother's womb. The fertilized ova at issue are between 4 and 8 cells. Genetically each

cell is identical. Approximately three days after fertilization the cells begin to differentiate into an outer layer that will become the placenta and an inner layer that will become the embryo. This "blastocyst" can adhere to the uterine wall, the hallmark of pregnancy. Once adherence occurs, the inner embryonic layer reorganizes to form a rudimentary "axis" along which major organs and structures of the body will be differentiated. It is important to remember when these ova were fertilized through mechanical manipulation, their development was limited to the 8 cell stage. At this juncture there is no development of the nervous system, the circulatory system, or the pulmonary system and it is thus possible for embryonic development to be indefinitely arrested at this stage by cryopreservation or "freezing"[3].

Treating infertility by in vitro fertilization results in a low success rate. As one writer has observed:

> In IVF programs the embryo will be transferred to a uterus when it reaches the four-, six-, or eight-cell stage, some forty-eight to seventy-two hours after conception. It is also at this stage that the embryo would be cryopreserved for later use... In vitro culture until the blastocyst stage may be possible, but beyond that it has not occurred. Finally, only one in ten pre- embryos at this stage goes on to initiate a successful pregnancy.

Moreover, cryopreservation poses risks to the fertilized ova, which have only a 70 per cent rate of viability after having been frozen.

The parties, after concluding a normal pregnancy was unlikely, jointly decided to attempt to have a child by in vitro fertilization and, after several attempts, nine of Mary Sue's ova were successfully fertilized in December of 1988. For the first time, their doctors advised that freezing was on option and would enable them to avoid all but the implantation of two of the fertilized ova and to preserve the others[5]. There was no discussion between them or their doctors about the consequences of preservation should the Davises divorce while the fertilized ova were stored. Mary Sue testified she had no idea that a divorce might be imminent and she would not have undergone the in vitro fertilization procedure had she contemplated divorce. Junior testified he believed the marriage was foundering but believed that having a

child would improve the marriage and did not anticipate a divorce at the time of the in vitro fertilization procedure[6].

On appeal, Junior asserts the trial court's judgment is not in accord with state and federal law and essentially argues the trial court's grant to Mary Sue of unilateral control over the implantation of the fertilized ova is tantamount to the court's deciding that Junior may be required to become a parent against his will, thus denying to him the right to control reproduction.

The United States Supreme Court in Skinner v. *Oklahoma*, 316 U.S. 535, 62 S.ct. 1110, 86 L.Ed.1655 (1942), recognized the right to procreate is one of a citizen's "basic civil rights". Conversely, the court has clearly held that an individual has a right to prevent procreation. "The decision whether to bear or beget a child is a costitutionally protected choice. *Carey v. Population Serv. Intel.*, 431 U.S. 678, 685, 97 S.Ct. 2010, 2016, 52 L.Ed.2d 675 (1977); *Eisenstadt v. Baird*, 405 U.S. 438, 453, 92 S.Ct. 1029, 1038, 31 L.Ed. 349 (1972); see *Griswold v. Connecticut*, 381 U.S. 479, 485, 85 S.Ct. 1678, 1682, 14 L.Ed.ed 510 (1965)." *Matter of Romero*, 790 P.2d 819, 822 (Colo. 1990).

Awarding the fertilized ova to Mary Sue for implantation against Junior's will, in our view, constitutes impermissible state action[7] in violation of Junior's constitutionally protected right not to beget a child where no pregnancy has taken place. We have carefully analyzed Tennessee's legislative Acts and case decisions and conclude there is no compelling state interest to justify our ordering implantation against the will of either party.

The policy of the state on the subject matter before us may be gleaned from the state's treatment of fetuses in the womb. The foundations of the Tennessee common law are based upon Blackstone's observation: "Life begins in contemplantation of the law as soon as an infant is able to stir in the mother's womb." (William Blackstone, *Commentaries on the Laws of England*, vol. 1, p. 125). The state's Wrongful Death Statute, Tenn. Code Ann. 20- 5-106 does not allow a wrongful death for a viable fetus that is not first born alive. Without live birth, the Supreme Court has said, a fetus is not a "person" within the meaning of the statute. See e.g., *Hamby v McDaniel*, 559 S.W.2d 774 (Tenn. 1977); *Durrett v. Owens*, 212 Tenn. 614, 371 S.W.2d 433 (1963); *Shousha*

v. Matthews Drivurself Service, 210 Tenn. 384, 358 S.W.2d 471 (1962); Hogan v. Mc Daniel, 204 Tenn. 235, 319 S.W.2d 221 (1958).

Other enactments by the legislature demonstrate even more explicity that viable fetuses in the womb are not entitled to the same protection as "persons". Tenn. Code Ann. 39-15-201 incorporates the trimester approach to abortion outlined in *Roe v. Wade*, 410 U.S. 113 (1973). A woman and her doctor may decide on abortion within the first three months of pregnancy but after three months, and before viability, abortion may occur at a properly regulated facility. Moreover, after viability, abortion may be chosen to save the life of the mother. This statutory scheme indicates that as embryos develop, they are accorded more respect than mere human cells because of their burgeoning potential for life. But, even after viability, they are not given legal status equivalent to that of a person already born. This concept is echoed in Tennessee's murder and assault statutes, which provide that an attack or homicide of a viable fetus may be a crime but abortion is not. See Tenn. Code Ann. 39-13-107 and 39-13-210.

The trial court in his fact finding and legal conclusions, ignored the public policy implicit in the Tennessee statutes, the case holdings of the Tennessee Supreme Court and the teachings of the United States Supreme Court. We are required to resolve the issue consistent with the existing Tennessee law and the parties' constitutional rights. On the facts of this case, it would be repugnant and offensive to constitutional principles to order Mary Sue to implant these fertilized ova against her will. It would be equally repugnant to order Junior to bear the psychological, if not the legal, consequences of paternity against his will.

Jointly, the parties share an interest in the seven fertilized ova. See Tenn. Code Ann. 68-30-101 et seq., 39-15-208 (8). Also see *York v. Jones*, 717 F.Supp. 421 (E.D.Va.1989).

Accordingly, the cause is remanded to the trial court to enter a judgment vesting Mary Sue and Junior with joint control of the fertilized ova and with equal voice over their disposition. Cost of the appeal is assessed one-half to each party.

Herschel P. Franks, Judge

CONCUR:

Clifford E. Sanders, P.J. (E.S.)

Houston M. Goddard, J.

NOTE

[1] Mary Sue's appellate brief states:

Since the conclusion of this trial, appellee has moved to Florida where she has remarried, and she now goes by the name of Mary Stowe. She has directed the undersigned to inform this Court that her intention should the Court uphold the lower Court's judgment is not to implant the embryos, and she wants authority to donate the embryos so that another childless couple may use them.

[2] Webster's Medical Desk Dictionary defines the human embryo as: "The developing human individual from the time of implantation to the end of the eighth week afetr conception" [Emphasis supplied].

[3] At the time of trial, there was no data available as to the effects on the fertilized ovum when cryopreserved for more than two years.

[4] Robertson, In the Beginning: the Legal Status of Early Embryos, 76 Va.L.Rev. 437 at 443 (1990)

[5] The implantation proved unsuccessful.

[6] The Fertility Center did not require the Davises to sign any agreement as to the terms of storage or disposition at the time the fertilized ova were cryopreserved.

[7] A haunting reminder of the evils of uncontrolled state action is found in Schuman's contemporary account of the state's control of reproduction in Nazi Germany:

Under the Sterilization Law a series of "Hereditary Health Courts" were established throughout the Reich with appellate courts and a Supreme Hereditary Health Court with the power to deliver final judgments. Before these bodies all persons suspected of hereditary diseases are obliged to appear and show cause why they should not be rendered sterile through a surgical operation.

Schuman, The Nazi Dictatorship, p. 382, Alfred A. Knops, 2nd edition, 1939.

[8] TCA 68-30-101, Uniform Anatomical Gift Act; TCA 39-15-208 (prohibits experimentation, research, or photography of aborted tissue without woman's consent).