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A New Wave Dialectic¹

The Reinvention of Human Embryology

by

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In 1973 *Roe v. Wade* was adjudicated by the Supreme Court. This landmark decision proved to be the watershed between science and the law. Statements made within the decision, and since, concerning human development, have been disingenuous, irresponsible or deliberately deceitful.

One would like to believe that Supreme Court Justices, acting as learned and wise servants of our society, exercise great and considerate care in making decisions that not only affect our daily lives, but impact the evolution of our culture in the most moral and responsible way. We also want to believe they seek out all available facts concerning a case before coming to decisions. Alas, such is not the case.

Justice Blackmun: The Roe and Webster Decisions

It is clear that Attorneys Jay Floyd (before the Court of 7) and Robert Flowers (before the Court of 9), arguing for the unborn during *Roe v. Wade* were unprepared in biological knowledge to answer Justice Blackmun's questions about the beginning of life, and when a fetus becomes a person. Blackmun, himself, was (and still is) woefully ignorant of the concept of "biological life". Unable to come to terms with the ordinary understanding of life as a biological life he confused the issue by including a question to Flowers, concerning when a fetus becomes a person, "a religious person, a medical person, a philosophical person". If personhood implies, at all, a usefulness, a newborn would be no more a person than the fertilized ovum!

Nevertheless, Blackmun eventually concluded that those in "medicine, philosophy, and theology" could not come to a consensus as to "when life begins". This was intellectual dishonesty at its worst.²

Justice Blackmun failed to become properly informed by the time he wrote the decision for the *Webster* case (1989), because he depended upon an *amici curiae* brief in which 167 "distinguished scientists" concluded: "there is no scientific

consensus that a human life begins at conception, at a given stage of fetal development, or at birth."³

This statement misleads the reader. They use the term "conception" only in a biological sense. What follows from conception, biologically, is a *continuum*, which, realistically, never ceases. Thus, a biological life is defined by its inception *and* destiny, both of which are inseparable and interdependent. It follows, then, that under conditions which we have come to understand as normal, there is no point of arbitration, even after birth and unto death. Therefore, interposing "stages" which purport to have meaning for biological development are wholly arbitrary, specious and disingenuous at best. All of development, therefore, from first contact between sperm and ovum is a *fait accompli*.

The *amici* further state: the beginning of a human life "cannot be answered by reference to scientific principles." They then invoke *more* than a biological consideration by stating that the answer "will depend on each individual's social, religious, philosophical, ethical and moral beliefs and values."

If these kinds of lives are assigned to an embryo or fetus, they would be done so arbitrarily. If they are acquired, this would occur as a learned belief or value long after birth!

But, their statement removes the biological imperative; therefore, they compound their own pronouncement and, in effect, pose a problem of "life" for the newborn, infant, juvenile, and, in fact, for any age of an individual. In point of fact, scientific principles can and do define when life begins (for the new individual), simply by recording the results of each pregnant woman, the issue of which we *know* is derived from a union of sperm and ovum! The question is, and has been, answered, repeatedly, over the time of many thousands of years, ever since hominids first appeared on the earth.

The same *amici* make still another profoundly gratuitous statement: "The question of when a human life truly begins calls for a conclusion as to which characteristics define the *essence* of human life. While science can tell us when certain biological characteristics can be detected, science cannot tell us which biological (sic) attributes establish the existence of a human being."

Here, the *amici* do not equivocate the biological imperative, as they did when asking when a human life begins. They cannot have it both ways.

Wendell M. Stanley, Nobel Prize winner and discoverer of the tobacco mosaic virus, stated it clearly:

The essence of life is the ability to reproduce. This is accomplished by the utilization of energy to create order out of disorder, to bring together into a specific predetermined pattern from semiorder or even from chaos all the component parts of that pattern with the perpetuation of that pattern with time. This is life.⁴

It is important to know that of the 167 "distinguished scientists", cited in the above mentioned *amici curiae* brief, only 31 had "index-described" terms related to embryology, that is, "development" or "developmental" being used in part of the descriptions of their fields. However, only one (1) of those 31 was a self-defined embryologist, and that one not even as a human embryologist!

Obviously, there is a major problem. The *Roe v. Wade* decision was regarded as

a decision that legalized abortion within the first two trimesters, by rendering it a private matter between doctor and patient. But, it was much more than that, because it indirectly declared the embryo and fetus up to the time of "viability" (assumed to be, but not declared as such, approximately 24 weeks post-fertilization) a non-person! Justice Blackmun believes the issue is resolved. Interviewed on ABC Nightline, on 2 December, 1993, ANATOMY OF A DECISION: *Roe v. Wade*, he stated: "the basic issue is decided . . . the constitutional issue is decided, and not on moral grounds."

It is disturbing that Blackmun would separate "constitutional" from "moral". There is an axiom which used to be taught in law which says: ALL LAW COMES FROM MORAL LAW. Although sophisticated pundits of the law would now argue this, a reading of the history of law would confirm it.

Blackmun later made this statement: "I'd like to think I've *written into law* [sic] other significant decisions, but one gets tagged with one — and, there it is." I have always believed that the Supreme Court is not supposed or empowered to *write* into law (making law), but to *interpret* law. Is it not the function of the legislative branch of government to make, or write law?

The Fallout From The Court's Decisions

The Supreme Court has had several chances to reconsider the effects of *Roe v. Wade*, the latest efforts being the cases of *J.M., Individually v. V.C., et al.*, and *Alexander Loce v. The State of New Jersey*. The Supreme Court of The United States, in its October Term, 1993, elected not to hear those cases.

Still to be decided by the high court are the crucial questions of (1) when *legal* life begins, (2) when establishment of the individual (personhood) occurs, and (3) will there be an invocation of equal protection under the law (14th amendment) for the embryo and fetus. The *Roe* Court, and subsequent Courts in the cases of *Webster*, *Akron* and *Casey* have not addressed these questions; but more importantly, the biology - the HUMAN EMBRYOLOGY - referred to in those cases was in error. For the benefit of the Supreme Court, a proper dialogue has never taken place!

Since *Roe v. Wade*, there has been an inundation of one-sided monologues, appearing in lay and scientific publications, newspapers, interviews, talk shows, virtually all forms of media, calling into question the quality and status of the embryo and early fetus—especially by persons with no experience, training and little knowledge of human embryology. Why do they do this if the *Roe* decision essentially obviated, forever, as Blackmun believes, claims of personhood prior to "viability", and confirmed the seeming finality of a woman's right for an abortion?

It appears the answer is that most of the proponents of choice know that they successfully prevented the biological truth from entering into the Court hearings and decisions, and, anticipating that eventually this truth would out, have been rewriting human development by skewing, distorting and outright lying about the known facts, and by constructing an intellectually dishonest social policy concerning human development, most of which has gone unchallenged in the more common media sources.

Clifford Grobstein and the Preembryo

One of the most active and prolific contributors to this problem is Clifford Grobstein, who is a developmental biologist, not a human embryologist, and who is a member of The American Fertility Society. In addition, he has authored a book, entitled *Science and The Unborn*, subtitled: "Choosing Human Futures" (Basic Books, Inc., New York, 1988).⁶ He writes articles for lay publications, is interviewed by others, such as *Psychology Today*, and promotes his ideas about human development through computer networks, all without challenge. He also may have invented the term *preembryo*,⁷ a term which has been and is being used to reduce the status of the early embryo to that of a non-person and non-human.

He identifies his most active professional area as "public policy". He has had some success in politicizing human embryology and even in finding some allies among, of all places, the scientific world of Human Embryology, who are willing to inject his "New Wave" definitions into the jargon of human development. Keith Moore, who is an author of several texts on human embryology, poses a question on page 71 of the third edition of: *Before We Are Born* (W.B. Saunders Co., Philadelphia, 1988)⁸ asking: "When does the embryo become human?" On the next page he gives two answers, the scientific one and the political one, then asks the student to choose between them! However, it must be said in his latest edition (1994) he still gives the two answers but does not ask the student to choose between them. In addition to that, Moore, in his latest (5th) edition of *The Developing Human* (W.B. Saunders, Co., Philadelphia, 1993)⁹ uses for the first time, albeit in a contradictory way, the term *preembryo*, a political reference to the first week of human development. This is the first recorded use of the term in a textbook of human embryology! Interestingly, however, when this author protested use of the term to Moore, he admitted his use of the term "was inappropriate" and said he would remove it in the next printing.

Grobstein obviously agrees with Blackmun, concerning the presumed finality of the *Roe* decision, because now Grobstein writes about the futures he has planned for the aborted individuals in ever more confident tones, but, again, without apparent dialogue!

He is, perhaps, the leading spokesman for "choice", but prefers to identify it as "public policy", and a leading sponsor of human embryo "research". Grobstein is the avant-garde of those reinventing human development, and those writing a new social policy for the status of the new individual.

Grobstein's New Wave Embryology and Future Social Policy

He has written a chapter in a book entitled *Ethical Issues in Research*, edited by Darwin Cheney and published by The University Publishing Group, Inc., Frederick, Maryland (1993).¹⁰ This chapter seems to bring together his previous manipulations of the science of human embryology with his intended uses and disposal of "materials" important to our human futures, under the guise of a *New Wave* social policy. That policy is predicated on reinvented science.

Therefore, a careful critique of what he says is requisite, if for no other reason but to inform an unsuspecting public as to the direction our evolution might take us.

Only a well-informed public can apply the necessary pressure to restore the proper reverence for human development.

Our culture is at stake. The evolution of our society and, indeed, the very root of societal endurance, its moral base, is being redefined, virtually by fiat. There must be reasonable dialogue, and those properly prepared in science without a political agenda must be heard, lest once more science becomes darkened with demonic doctrines.

Herein, is the critique of Grobstein's New Wave human embryology, and futuristic social policy with appropriate excerpts from his chapter on "The Status and Uses of Early Human Development Stages":

● *The funding pattern for human embryo research*

"The focus of this chapter is on the moral and legal status of early human developmental stages, with emphasis on how these stages should be treated in laboratories and in clinical practice . . . With regard to the topic of **research on early human** development, this chapter will direct attention to the moral considerations that exert external directive pressure on research, its funding, and its outcomes . . . What is not so immediately obvious is the extremely limited funding (approaching zero) currently available from US federal sources **for studies on early human** developmental stages. Moreover, the dearth of such funds clearly is not accidental; rather it is traceable to deliberate policy of the Federal Department of Health and Human Services (HHS) . . . the existing funding pattern strongly suggests that understanding of early human development is of far less interest and importance than that of other species such as, say, the mouse."

Not so. The funding pattern has been, and is, relatively low because of medical, legal and ethical restrictions concerning acquisitions of human embryonic or fetal tissues. In spite of the many abortions performed each year, most are performed in clinics on early stages of embryos by saline treatment or mechanical disruption which destroys the embryo or early fetuses, and often renders the tissue unusable. Procurement of the best and most viable tissues would mean surgical intervention. Most physicians and patients are unwilling to undergo such a radical procedure. However, since President Clinton has lifted the ban on funding of fetal tissue research, and the NIH is currently conducting hearings on ethical and moral considerations of human embryo research, funding is likely to rapidly increase.

"Moreover, reference to the next millennium is not incidental. I refer to it because in this research area religious teachings exert significant pressure on US funding—even though the issues involved are certainly not solely religious, and teachings of various religions are **hardly** always **concordant** on the matters involved."

Left out of this statement are the legal restrictions. These are not going to be removed, easily, or at all. They may be explained by the age-old legal maxim: all law comes from moral law, and moral imperatives have their origin in religion. To remove the moral basis for restrictions is to

remove virtually **all** restrictive control for society. What then would be left? - a kind of social anarchy which would declare that the end justifies the means.

Acquisition of early embryos and fetuses from in utero and even in vitro fertilization followed by culturing through early stages has been restricted because of the revered quality traditionally applied to the new individual and because of the self-imposed restrictions by physicians applying the technique solely in cases of fertility problems. However, if a different quality can be applied, it is likely to be followed with a different value.

“... Defenders of current restrictive policies on funding for research on early human developmental stages argue that because human abortuses constitute a possible source of study materials, increases in the number of authorized and funded early human studies will promote a higher frequency of abortion.”

And this is true, not only for “a possible source of study materials”, but for many experimental procedures. “60 minutes” ran a piece in 1993 about a clinic in Russia set up to make fetal cell and tissue injections into children afflicted with Down’s syndrome. One part of this clinic was given over to free elective abortions. The fetus was removed alive, dissected and living tissue preserved for experimental injections. The fact that this occurred in Russia does not preclude the likelihood of similar clinics or operations eventually appearing in this country. In fact, at least two diseases are regarded as lending themselves to fetal cell or tissue implants for therapeutic relief, albeit temporary at best: 1) Parkinson’s, and 2) Diabetes mellitus. Only living cells can afford any benefit. Therefore the best assurance for that is the living fetus, and the model for the use of those has already been established by the Swedes,^{11, 12}

“To others, aware of the issue, this argument is tenuous at best; it is little more persuasive than the suggestion that wider research use of adult human tissues will increase the frequency of capital punishment. In both instances, an unjustified conflation of unsubstantiated assertions is claimed to demonstrate causal connections that are then advanced as though they were objective fact.”

Unsubstantiated assertions converted to objective fact have actually been the rather high-profile domain of Clifford Grobstein and others, e.g. claims to different “stages of individuality”,^{5, 13} inferences that human embryos display “gill slits and tails”,¹⁴ and invoking “thought” occurring at 30 weeks of age post-fertilization.¹⁵

● *New Knowledge through new experiments on human embryos*

“Rather than such loose logic, what seems to be needed at this point is careful evaluation of the potential gains and losses if early human developmental stages were more accessible to scientific study. I will provide an appraisal along these lines, based on a preliminary analysis which, persuasive to me, proves that under appropriate oversight and with suitable safeguards early human developmental stages should be available to gain otherwise unobtainable important new knowledge.”

It is only fair to ask, at this point, how important the "unobtainable new knowledge" might be. To date, no human embryologist is advocating experimentation with human embryos. Grobstein is a developmental biologist. Experimenting with vertebrate and invertebrate embryos is part of the discipline of developmental biologists. They are tinkerers, fiddlers, and doodlers, the contemporary biological engineers. Now they propose for human embryos what they previously have done as a career discipline. The problem is they see little, if any, distinction between human embryos and those of other vertebrates.

"... the zygote is genetically a new formulation capable of producing a lineage of like cells in a multicellular individual."

Read: "the zygote is genetically a new formulation..." as: "... a new individual..." To accept Grobstein's description would, at least, require him to arbitrarily decide how many cells establishes the new multicellular individual.

"However, the significance of these facts as stated are the subject of major controversy and, from my point of view, are substantially misinterpreted by some commentators who insist on regarding the resulting genetic individual as immediately equivalent to the total individuality of an adult."

What kind of significance is Grobstein talking about, and the "facts" are significant to whom? — the new individual or those wanting to intervene in development of this new individual?

"Accordingly, these commentators declare the zygote to be a "person" in the full moral and legal sense. Other commentators however, reject this notion as naive and misguided, pointing out that — like the preformationism of more than a century ago — the interpretation grossly miniaturizes and distorts the significance of the subsequent development process."

This is a good technique by Grobstein, tying a moral and a legal interpretation to a biological one, then comparing it to a discredited false theory of more than 300 years ago. In effect, he characterizes those claiming full "personhood" for the zygote as charlatans.

"The fact, of course, is that during development the established genetic individuality is translated and transformed through step-wise expression into the much more complex reality of the new generation."

Just as it continues from newborn to adult to old age to death.

"The zygote does have important characteristics beyond those of either egg or sperm alone. But the zygote also lacks many key features of a person, which are readily identified in a newborn and even more clearly in an adult".

Which means that the newborn also lacks "many key features" of an adult!

● *Cloning and the new individual*

"To be more specific (and extrapolating from studies on other species) the single-celled zygote is not yet even committed to becoming one individual. As it divides to form a small cluster of cells, each derived cell — if separated from the others — can make a whole new individual."

No properly constructed experiments have, as yet, been performed on human embryos to provide evidence for this assertion. So-called cloning of human embryos was reported in Science¹⁶ (not via a research publication) from the work of Hall and Stillman, but does not provide evidence for several reasons: 1) the embryos chosen were those from 2 to 8 cell stages and they were chromosomally abnormal embryos (multiploids with an extra set of chromosomes). 2) Separated blastomeres were grown through only the next few divisions, which would have occurred naturally, anyway, and 3) there still is no evidence that the blastomeres are exactly equivalent, which is the definition of a clone.

Commitment towards one individual may well have taken place at fertilization; then, again, it may not have. Grobstein draws a conclusion based on many experiments performed on several other species, most of them from Sea Urchin embryos. What he is describing is known to embryologists as "determinant or indeterminant cleavage". In the latter case, determination occurs late in cleavage thereby preserving pluripotentiality in the blastomeres of early embryos. In the former case, the opposite would be true, thereby obviating the pluripotentiality early in development. It is postulated that peptides or proteins, acting as determinants are released at the proper time to determine differentiation.

The truth is no "determinants" have ever been identified in the case of humans. Therefore, it is not known if, in fact, blastomeres of early embryos contain "determinants" which may or may not be inhibited, suppressed or masked, or that they may be added only at a later stage, say at the stage of the primitive streak, about 14 days, post-fertilization (P-F). If a suppressor or inhibitor is suspected, then similarly, one must propose appearance of an agent to remove or override the suppressor or inhibitor. The truth is, there is no evidence to support any of this speculation.

What is definitely known is that 30% of all monozygotic twins are determined early in development, at the first 2 or 3 division stages P-F.¹⁷ This fact conflicts directly with Grobstein's claim that singleness does not occur until the onset of the primitive streak. Furthermore, Grobstein raises the case of monozygotic twins which occurs in only 1 of every 270 live births. He offers no account as to when singleness would occur for the other 269 individuals.

"The result is equivalent to natural twinning, which, of course, occurs with low but regular frequency in human development and produces litters of genetically identical individuals in armadillos. Genetic individuality, therefore, is not the same as developmental individuality; instead, the one precedes the other."

Genetic and developmental individuality are two of six arbitrarily invented "stages" by Grobstein, which support his special theories.

His so-called "developmental individuality" can be identical with "genetic individuality" because it is known that approximately 30% of monozygotic twins are derived from the first two cleavage divisions — the two or four cell stage.

Further, Grobstein is applying a condition for *all* cases of human development based on what is known to occur in only 1 of about every 385 live births.

Lastly, "developmental individuality" does not have to be the same as "genetic individuality" in order to identify a new individual. After all, any succeeding moment is not the same as any preceding moment. The significance is not that they are different but that one follows the other because all of development is a continuum, borne from a *fait accompli* initiated by first contact of sperm with ovum.

"Furthermore, as cell division proceeds, the many cells produced aggregate as a collective that develops a central fluid-filled cavity within an outer cellular peripheral wall. By this stage, the developing entity has normally travelled down the oviduct and arrived in the uterus. There, its outer cells interact with the uterine lining, leading to its implantation or incorporation into the uterine wall. In this process, the peripheral cells of the developing entity do not become part of, or contribute to, the embryo proper — defined as the direct precursor to the new individual-to-be. Rather, the outer cells of this stage contribute to the early placenta — the organ of exchange with the mother — which normally is discarded at birth."

The evidence is not conclusive to substantiate Grobstein's claim that "the outer cells" do not contribute to the embryo proper. Virtually all human embryology texts up to the present time, have stated that the "outer cells", spec. the cytotrophoblast, contribute cells which eventually cover the lining cells of the primitive gut. Carlson's new text,¹⁸ indicates the covering of the cells of the gut come from the gut itself. However, this is true for the monkey, but no study has been done for the human. Larsen's new text states that the origin of the covering cells, the extraembryonic mesoderm, is, as yet, still theory.¹⁹ It really makes no difference. In actuality, those outer cells are acting on behalf of the embryo proper. If they do not, the embryo will die. It is difficult, if not impossible, to see how Grobstein can so easily separate the two functionally, as if one exists without the other.

"Therefore, the cellular aggregate produced by early divisions of the zygote is better referred to as a pre-embryo than as an embryo."

Nonsense. Many of the cells in the early cluster are destined to become part of the embryo proper. We simply don't know which ones they are. One might reasonably theorize that as mitotic divisions continue, an outer layer is distinguished from inner cells. However, it is not known whether or not this positioning is static or if, in fact, some cells change places with others. In fact, in a two-cell stage, no one knows if one or both of these

cells will eventually become part of the embryo proper or only the "feeding" layer, as Grobstein puts it. Nevertheless, cells of the "embryo proper" certainly appear long before implantation!

The term *pre-embryo* is pure invention, arbitrary and probably was introduced by Clifford Grobstein in a 1979 article in *Scientific American*.⁷ Traditionally, all of the early stages derived from the fertilized zygote have been regarded as the embryo, and this is confirmed by contemporary authors such as Carlson, Larsen and O'Rahilly. Ronan O'Rahilly, in fact, has a footnote in his 1992 text in which he states: "The ill-defined and inaccurate term *pre-embryo* . . . is said to end with . . . the primitive streak . . . the term is not used in this book."²⁰

"It is only somewhat later that the actual precursor cells of the embryo — and the eventual human adult—become conspicuously separate from the so-called trophoblast (feeding layer), which contributes to the placenta."

The cells and tissues of the "embryo proper" are not "conspicuously" separated from the so-called trophoblast. There is a contiguity of tissues which joins the embryo with the placenta, most importantly, the blood vessels which grow from the embryo proper to close approximation with maternal blood lakes in the uterus via the placenta.

"(Interestingly, the trophoblast cells sometimes escalate on their own, undergoing malignant transformation, and take the life of either the mother, the offspring, or both.)"

The same may happen from cells of the "embryo proper" in the form of teratomas.

● *Status: preembryos are pre-persons?*

"What should be the status of the developing entity of the pre-embryonic stage? I prefer the following tentative approach to this important and difficult question. By virtue of its earlier developmental activation, the pre-embryo has potential to become a person in the full sense. This means that it has among its alternative futures possible maturation into a person. It is, in this sense, a preperson and this must be taken into account in its treatment and status."

*Heroes are often artificially made by erecting straw men, then knocking them down in public view. Unfortunately, this is what Grobstein is doing by promoting this false concept of a "pre-embryo", then lamenting: what should be done with it? As many human embryologists (as Grobstein may have supporters) will claim there is no such stage as the "pre-embryo". The basic reason is that such artificial stages are significant only to the extant political discourse. It is of no value to human development because all of development from fertilization to birth (and beyond) is a continuum. As such, it is supreme evidence of the *fait accompli* begun by initial contact of the sperm and ovum. Most importantly, under normal conditions the continuum of development is not subject to any intrinsic*

arbitration!

"What might such a status entail? First, since we should and do attach very high value to persons (in part because the category includes each of us as a self) and pre-persons are the only source of persons, every feasible opportunity and priority should be provided to pre-persons to continue their development to personhood. However, this does not require and does not mean that pre-persons are automatically and immediately persons. Rather, it means that appropriate formulation of the status and rights of pre-persons is a task of high priority, taking into account the status and rights of the mother."

It would seem that once a straw man is constructed it can arbitrarily be given a heart, a brain and courage, at some arbitrary future time. Thus, the straw man is now a "pre-person".

"Second, pre-persons, as genetic individuals, are members of the kinship network of both of their parents. In the absence of the genetic parents as decision makers at a critical time, an agreed-upon procedure for surrogate custodianship should exist within each human community, whether it is applied to a particular subgroup (family) or to a larger community having a reliably stable consensus within it."

It is interesting that Grobstein admits to the derivation and subsequent decision making, of "pre-persons" through both parents. In fact, an equal consideration of a genetic father's vested interest in the fate of embryos and fetuses (Grobstein's pre-person) was submitted to the Supreme Court for adjudication in 1993. The court refused to hear the case.

There is another, ominous aspect to this concept of Grobstein. Some states do not require consent from both parents for a pregnant minor to get an abortion. Who then would constitute the "community" and who would become the "custodian"? Read on!

"Third, if acceptable custodianship based on kinship has not been provided for a given pre-embryo, it should become the responsibility of a designated public authority, which may appoint a trustee to make suitable decisions on behalf of the pre-person, with priority given as indicated in the preceding first principle.

Fourth, if all possibilities for providing continued development to personhood have been exhausted, **a pre-person may be made available for other purposes** (my emphasis) approved under rules to be formulated and monitored by a publicly responsible oversight body."

This is perhaps the most odious statement made, yet. In pre-World War II Nazi Germany, the mentally defective, Pastors, Priests, Gypsies & others were declared "non persons" and routinely executed. It is the "Second Holocaust", which is rarely written about, and included more than 10,000,000 people.²¹ Is there a parallel here with the infamous Nazi medical experiments in the WWII concentration camps? Jews, Russian POWs, Polish inmates and even some Germans were considered "nonpersons" and thereby useful in yielding information presumed

beneficial for soldiers in the field or for the good of science.

The fact that we have, on the one hand Nazi authority, and on the other, federally sanctioned guidelines by the Ethics Committee of the American Fertility Society, experimenting on "nonpersons", makes no difference. In both cases the objectives were and are driven by an abject denial of moral imperative.

"Fifth, it is assumed that such pre-persons will be maintained in an optimal frozen state pending disposition — but that they will not be so maintained for periods longer than one year unless accumulating experience indicates otherwise. Careful records should be maintained for all individual pre-embryos so as to allow modification of the one-year preliminary recommendation in response to cumulative experience.

"These principles are intended to apply to pre-embryos as pre-persons, the developmental stage most often dealt with in clinical centers providing in-vitro fertilization and related techniques for treating subfertile couples. This set of applications does not, however, exhaust the growing possibilities for beneficial intervention during development in utero whether the benefit be to the mother or the offspring. There is, therefore, growing need for greater scientific understanding of both embryonic and fetal development to support these clinical possibilities."

● *Preembryos are now embryos*

"Thus, the first point made earlier with respect to the status of pre-embryos is equally valid for embryos — it is essential both to protect their potential as prepersons and to better understand the nature and properties of such potential. We need therefore to define the status of embryos so that their pre-personhood is appropriately respected, while allowing knowledge about them to be effectively expanded."

This seems contradictory. Grobstein says that "it is essential both to protect their potential as pre-persons and to better understand the nature... of such potential."

Which has priority? The best way to protect the "potential of pre-persons" is to permit no intervention so they can be born! Further, Grobstein equates pre-embryo with pre-person and states "the status of pre-embryos is equally valid for embryos"; that is, "pre-persons are not", according to Grobstein, "automatically and immediately persons"!

This is the very concept placed before the NIH advisory panel on Human Embryo research in the spring of 1994. As we read on we shall see how Grobstein claims the entire embryonic period (his definition up to 7 weeks P-F) may be subjected to human embryo research.

"The embryonic period can be defined as beginning with the appearance of the head-to-tail body axis and extending to the onset of bodily movement at six to seven weeks. The main body axis is first recognized by appearance of the so-called primitive streak in the cup-shaped layer of cells which, ten to fourteen days after fertilization represents the nascent embryo. Shortly thereafter, in line with and

ahead of the primitive streak, the neural folds appear as the first visible precursor of the central nervous system and the brain."

Grobstein is reinventing human embryology. All traditional teaching in human embryology has heretofore taught that the embryonic period ends and the fetal period begins on or about the ninth week of development post-fertilization, based on three things occurring at that time: 1) more rapid development of the face, 2) completion of formation of all major organ fields, and 3) the onset of differentiation of the reproductive structures.

● *A new definition for the transition of embryo to fetus*

"... By six to seven weeks, neuromuscular connections have been established in the neck region sufficient to support primitive turning movements of the head. This is a reasonable marker for the transition from primary organogenesis of the embryo to fetal growth and maturation, which continues on to birth and beyond."

Simply, not so. Turning of the head is not a reasonable marker for transition from embryo to fetus. First, it is in direct contradiction to what has been previously accepted and taught. Second, there is the vague inference here that turning the head may suggest such psychological traits as query, curiosity or willful response. There is no evidence for such veiled inferences. In fact at 5 to 6 weeks, limbs and/or head may move in response to two stimuli: 1) chemical, effecting a change in tissue balance of O₂ and CO₂, and 2) mechanical, including that produced by a surgeon's probe. A consortium of sarcomeres (contractile units) in differentiating voluntary muscle is probably not necessary for this kind of movement, because many cells contain microfilaments, which represent primitive contractile systems.

Grobstein's not-so-veiled inferences are "The New Wave" of science.

"Movement, particularly when it seems purposeful, has significant impact on observers; accordingly, at the much later time of quickening, this was a traditional clinical sign of advancing pregnancy and fetal well-being. Today, embryonic movement is visible to ultrasonography as early as six to seven weeks of gestation and affords welcome testimony about fetal welfare. Moreover, movements imply a significant level of maturation, including the presence of receptors, neural transmitters, and effectors such as muscles. Thus movement as behavior, even when rudimentary, becomes a potential form of communication and thus an indicator of an internal state that may later include the beginnings of sensation, awareness, and comfort — all assumed to require at least minimal brain function."

There is nothing really incorrect in what is said here. However, Grobstein has probably justified Bernard Nathanson's claims in his production of "The Silent Scream"!

However, it should be said that Grobstein's use of the word "purposeful" is a rather long reach, and has no scientific support. In fact, applying this even to the newborn is suspect.

"With these developments, concern legitimately rises about influences and treatments that may evoke pain or other significant discomfort. Very much more knowledge about these matters is needed to deal intelligently and humanely with the "rights" of quasi-persons during their course to full subjective existence."¹¹

● *Added value through added signals*

"Recapitulating, although the human developmental course is gradual and cumulative, there are several fundamental horizons that are recognizable as major transitions. These include, in addition to fertilization, embryonic axis formation and onset of behavior as indicated by bodily movement. Each signals a new level of organization and integration, which can justify assignment of added value with regard to realized function and imminent social potential."

Each does signal a new level of organization and integration. But it does not follow that "added value" means value to the political or social structure of the society in which the embryo is developing. This is specious and arbitrary, because "added value" may apply to any stage, including newborn (which in the past were subjected to infanticide in some cultures) or adult (decreased value of which is prompting aided death by Kevorkian).

Because of the continuum character of development, stages or ever new levels of differentiation are important only in a taxonomic way to human embryologists and obstetricians.

"... even at birth full independence as a person is still some years ahead. Nonetheless, in most contemporary societies full protection as a person is mandated for any newborn. Yet, the fetus, particularly in its early stages, is a far cry from a normal newborn, and no general consensus has been achieved on when in fetal life in utero a person definitely exists. There is, however, consensus that any fetus capable of survival after delivery ("viable") is a person from the time of delivery."

*Grobstein finally admits that not even birth confers full "personhood" upon an individual. Thus, assigning this socio-legal quality at any time is simply arbitrary. The only consensus that viability and personhood are linked is that of a majority of the Supreme Court arrived at in 1973 in **Roe v. Wade**.*

"... What seems clear is that there is no moment or single step when, or by which, a person in the full sense suddenly exists. Rather, a human being in the full sense gradually emerges through a series of steps, with no way of progressing immediately from a pre-person to a person. Nonetheless, each step makes a contribution, and we do not yet fully understand all of the steps or exactly how each contributes. Some steps can be clarified by study of other species, but no other species undergoes the full changes that are so diagnostic of humanity."

He contradicts himself, because this means that not even his arbitrary stage of "developmental individuality" confers personhood, nor does birth, nor does puberty.

“ . . . Clearly needed is wider awareness that essentially ideological considerations are pinching off an important area of biomedical research — an area involving critical aspects of reproduction and development.”

● *“Family of value issues”*

“To summarize the problem in the context of this book, experience has taught us that a number of ethical issues regularly arise in the conduct of scientific research. At the primary level this book presents much about misrepresentations of data, the responsibilities of authorship, and the conflicts of interest that may arise when scientists function in centers of national policy or in corporate board rooms. These indeed are important issues and call for careful attention.

“But there is another family of value issues that has plagued the interaction of science with society for centuries, perhaps as long as the two have existed.”

I believe it is not by accident that Grobstein uses the phrase “family of value issues”. This is a thinly veiled attempt to establish some sense of credibility, not to mention ethical and moral value to his gratuitous tone by offering a contorted syntactical phraseology of “family values”. Traditional family values are the bedrock of societal stability. He knows that; therefore, he makes a rather lame attempt to invoke this concept.

“It has to do with the product of science rather than its methods or even its objectives. To attach value to scientific knowledge often means to detach value from what was previously thought to be reliable knowledge.”

Therefore, the end, indeed, would justify the means.

“ . . . The firm belief that a complete person begins at conception and that, consequently, both contraception and abortion are moral equivalents to murder rests on supposed knowledge from which value now has to be detached. The much more difficult present reality that a person emerges gradually in complicated ways from a single cell is knowledge to which value now has to be firmly attached. Neither the substance of this relatively new knowledge nor the evidence that supports it is easily communicated throughout the body politic. Nonetheless, it must somehow become part of the scientific and technological literacy, which we are all urged to share more widely with the general community.”

Embryology does not stop at birth. The fundamental processes of embryology are continued even into old age and death. This is so because all of life is a continuum. Therefore, the human, the person, the individual are all identical in the conceptual sense. Hence, the value of life is established at the initial contact of sperm and ovum and cannot be “detached” because of a self-serving or arbitrary reinvention of human embryology.

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