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EMBRYONIC HUMAN BEINGS*

*Patrick Lee***

A brief note about what stem cells are and why there is a controversy. A stem cell is a relatively unspecialized cell that can be coaxed into becoming different specialized cells, such as a heart cell, a brain cell, a neural cell, and so on. There are basically two sources of stem cells. Those derived from non-embryos and those derived from embryos. Those derived from non-embryos, no matter what the age of the donor, are called “adult stem cells.” Obviously, those derived from embryos are called embryonic stem cells. All of us have some stem cells in our bodies. And adult stem cells are usually derived either from bone marrow, or, more recently, from blood. At this time the only way to obtain embryonic stem cells is by dismembering the early embryo. This is done to an embryo when he is about 5 or 6 days old, and extracting his stem cells from the inner cell mass, the center of the embryo at this stage of his development. Thus, what is proposed by those who wish federal funding of embryonic stem cell research is public support for the act of dissecting a human embryo for the sake of using his stem cells for the benefit of others—either for research purposes or, eventually, therapeutic purposes.

The first point I want to make is that the issue is *not* about embryonic stem cell research or embryonic stem cell therapy as such. Rather, the issue is whether it is right to dismember a human embryo in order to obtain his or her stem cells.

So, we should not be speaking in terms of a debate “about embryonic stem cell research.” No one would object to the use of embryonic stem cells in biomedical research or therapy if they could be harvested without killing or harming the embryos from whom they were obtained.

Nor can the issue be settled by considering how many people might be helped by embryonic stem cells—that is, if the only way to obtain them is by deliberately killing a human embryo. No one would object to using such cells if they could be obtained without killing human beings at the

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embryonic stage of their development, if for example, they could be obtained from embryos lost in spontaneous abortions.

The point of controversy is the ethics of deliberately destroying human embryos for the purpose of harvesting their stem cells. The central question is whether it is unjust to kill members of a certain class of human beings—those in the embryonic stage of development—in order to benefit others. But that moves me to the key point in the argument. Is it true that human embryos are human beings?

EMBRYONIC HUMAN BEINGS

It will be useful to begin by considering some of the facts of sexual reproduction.

The standard embryology texts indicate that in the case of ordinary sexual reproduction the life of an individual human being begins with complete fertilization. In normal conception, a sex cell of the father, a spermatozoon (sperm), unites with a sex cell of the mother, an oocyte (ovum). Within the chromosomes of these sex cells are the DNA molecules which constitute the information which guides the development of the new individual brought into being when the sperm and ovum fuse. When fertilization occurs, the twenty-three chromosomes of the sperm unite with the twenty-three chromosomes of the ovum. At the end of this process, there is produced an entirely new and distinct organism, originally a single cell. This organism, the human embryo, begins to grow by the normal process of cell division—it divides into 2 cells, then 4, 8, 16, and so on (the divisions are not simultaneous, so there is a 3-cell stage, and so on). This embryo gradually develops all of the organs and organ systems necessary for the full functioning of a mature human being. His or her development (sex is determined from the beginning) is very rapid in the first few weeks. For example, as early as eight or ten weeks of gestation, the fetus has a fully formed, beating heart, a complete brain (though not all of its synaptic connections are complete—nor will they be until sometime *after* the child is born), a recognizably human form, feels pain, cries, and even sucks his or her thumb.

There are three important points I wish to make about this human embryo. First, the embryo is from the start distinct from any cell of the mother or of the father. This is clear because it is growing in its own distinct direction. Its growth is internally directed to its own survival and maturation, a distinct end from the survival and flourishing of the mother in whose body this distinct organism resides. Second, the embryo is human: it has the genetic makeup characteristic of human beings.

Third, and most important, this new human embryo is a whole, though obviously immature, human being. This is a crucial point: because there is human tissue or human cells, whether body cells or sex cells, which are

human (that is, genetically human) but are not whole human organisms. But a human embryo is quite unlike human tissue or human cells.

Human tissue or a human cell is only functionally a part of a larger organism. Neither human tissue or a human cell has the active disposition to develop itself to the mature stage of a human being. And so each of these is only a *part* of a human being, not a whole human organism.

By contrast, the human embryo, from fertilization onward, is fully programmed actively to develop himself or herself to the mature stage of a human being. It is clear that after conception, that is, from the zygote stage on, the major development of this organism is controlled and directed from within, that is, by the multicellular organism itself. And unless deprived of a suitable environment or prevented by violence, accident or disease, this embryo will actively develop itself in its own distinct direction, toward its own survival and maturity.

If the embryo were not a complete organism, then what could it be? It has been shown that it is not a part of the mother or of the father, unlike the sperm cells and the ova. Nor is it a disordered growth such as a teratoma. These do not have the internal resources to actively develop themselves to the mature stage of a human. Perhaps someone will say that the early embryo is an intermediate form, something which regularly emerges into a whole (though immature) human organism but is not one yet. But what could cause the emergence of a new substantial entity, and cause it with regularity? It is clear that after conception, that is, from the zygote stage on, the major development of this organism is controlled and directed from within, that is, by the multicellular organism itself. None of the changes that occur to the embryonic human being during normal gestation generates a new direction of growth.¹ Rather, all of the changes (for example, those involving nutrition and environment) either facilitate or retard the internally directed growth of this individual. These facts are sufficient to show that the human embryo is a whole, though immature, human being, an individual member of the species *homo sapiens*.²

1. This point is also argued, in a different context, where it is shown that applying Aquinas' philosophical principles to the embryological data known today (and unknown in Aquinas's day) leads to the conclusion that the human being comes to be at conception. John Haldane & Patrick Lee, *St. Thomas Aquinas on Human Ensoulment*, 78 *PHILOSOPHY* 255-78 (2003). Cf. Robert Pasnau's reply to this article: Robert Pasnau, *Souls and the Beginning of Life*, 78 *PHILOSOPHY* 515-31 (2003), 515-531, and Haldane and Lee's sur-reply: John Haldane & Patrick Lee, *Rational Souls and the Beginning of Life*, 78 *PHILOSOPHY* 532-40 (2003).

2. The question we are examining here is the factual one of whether the human embryo is a whole member of the species *homo sapiens*. As long as the question is made clear, and not confused with the evaluative question whether this individual is a subject of rights, there is general agreement among embryologists and developmental biologists (see *supra* note 1) that the human embryo is a distinct, whole human individual. See

It is important to note that the human embryo is the same type of being whether it is produced by traditional, sexual means, by *in vitro* fertilization, and is growing for awhile outside the mother's womb, or, should this occur in the future, by a successful cloning procedure. Whether the embryo is produced by sexual means, by *in vitro* fertilization, or by cloning—this does not change the intrinsic nature of the being we are talking about.

Thus, what is immediately produced either by fertilization or by cloning (should cloning of humans occur in the future) is a new human organism, for what exists at that stage is a distinct organism with all of the organizational information needed to develop to maturity, and the active disposition, or ability from within (as opposed to an ability acquired by an extrinsic change), to develop itself in accord with that genetic information. (In monozygotic twinning, a second human embryo is generated with the division at some stage of a hitherto unitary and single human organism.)

This means that the human embryo is the same kind of being as you or I—there are of course various differences between human embryos and those of us at later developmental stages, but all of these are differences in accidental characteristics—they are not differences in the fundamental kind of being that we are—we are all human beings, we are all human persons.

DUALISTIC EVASIONS

Now a supporter of embryo-killing for biomedical research might admit that human embryos are human beings, but deny that they are persons. He might grant that the human organism comes to be when a human zygote comes to be, but still, he might deny that you and I ever were human embryos. He might claim instead that we are persons but not human

Report, Subcommittee on Separation of Powers to Senate Judiciary Committee S-158, 97 Congress, 1st Session 1981. It states in part:

We must consider not only whether unborn children are human beings but also whether to accord their lives intrinsic worth and value equal to those of other human beings. The two questions are separate and distinct. It is a scientific question whether an unborn child is a human being, in the sense of a living member of the human species. It is a value question whether the life of an unborn child has intrinsic worth and equal value with other human beings. Those witnesses who testified that science cannot say whether unborn children are human beings were speaking in every instance to the value question rather than the scientific question. No witness raised any evidence to refute the biological fact that from the moment of human conception there exists a distinct individual being who is alive and is of the human species. No witness challenged the scientific consensus that unborn children are 'human beings,' insofar as the term is used to mean living beings of the human species.

Id.

organisms. The argument would be that only persons deserve moral respect; that is, only persons are intrinsically worthwhile. But human embryos or fetuses, according to this argument, are not persons.

Sometimes it is argued that human embryos are not persons because human embryos do not have mental functions. Thus, for example, Mary Anne Warren and Michael Tooley argued that in order to be a person, an entity must have self-consciousness.³ They then concluded that, because human embryos lack self-consciousness, human embryos are not persons. Others have advanced the same claim on the ground that (they argue) in order for one entity to be the same person as an entity at a later stage, there must be a psychological continuity between them and thus each must possess self-awareness.⁴

However, this argument is based on a false premise. It implicitly identifies the human person with a consciousness which inhabits (or is somehow associated with) and uses a body; the truth, however, is that we human persons are a particular kind of physical organism. The argument here under review grants that the human organism comes to be at conception, but claims nevertheless that you or I, the human person, comes to be only much later, say, when self-awareness develops. But if this human organism came to be at one time, but *I* came to be at a later time, it follows that I am one thing and this human organism with which *I* am associated is another thing.⁵

But this is false. We are not consciousnesses that *possess or inhabit* bodies. Rather, we *are* living bodily entities. We understand what an entity is by examining the kinds of actions it performs. If a living thing performs bodily actions, then it is a physical organism. Now, those who wish to deny that we are physical organisms think of *themselves*, what each of them refers to as "*I*", as the subject of self-conscious acts of conceptual thought and willing (what many philosophers, myself included, would say are non-physical acts). But this "*I*" is identical with the subject of physical, bodily

3. MICHAEL TOOLEY, *ABORTION AND INFANTICIDE* (Oxford University Press 1983)

4. E.g., Peter McInerney, *Does the Fetus Have a Future-Like-Ours?*, 87 J. PHIL. 264-68 (1990); JEFF MCMAHAN, *THE ETHICS OF KILLING, PROBLEMS AT THE MARGINS OF LIFE* (Oxford University Press 2002); for the persistence of the person, McMahan also requires sameness of that part of the brain in which conscious states are realized—so he allows late abortions (after 20 weeks) but not early ones.

5. Recall that body-self dualists may identify the self with a subject of experiences (e.g., TOOLEY *supra* note 3), or with a series of experiences (proponents of the psychological continuity criterion of personal identity (e.g., Sydney Shoemaker, *Survival and the Importance of Identity*, in Daniel Kolak & Raymond Martin, *SELF AND IDENTITY, CONTEMPORARY PHILOSOPHICAL ISSUES* 267-73 (Macmillan 1991); Jennifer Whiting, *Personal Identity: The Non-Branching Form of "What Matters,"* in *THE BLACKWELL GUIDE TO METAPHYSICS* (Richard Gale ed., Blackwell Publishers 2002)) or with an embodied mind (that is, conscious experiences as realized in a part of the brain; e.g., MCMAHAN *supra* note 4).

actions, and so is a living, bodily being (an organism). Sensation is a bodily action, and it is an action performed by the organism as a whole. The act of seeing, for example, is an act that an animal performs with his eyeballs and his optic nerve, just as the act of walking is an act that he performs with his legs. But it is clear in the case of human individuals that it must be the same entity, the same single subject of actions, that performs the act of sensing and that performs the act of understanding. When I know, for example, that *This is a book*, it is by my understanding, or a self-conscious intellectual act, that I apprehend what is meant by “book,” apprehending what it is (at least in a general way). But the subject of that proposition, what I refer to by the word “This,” is apprehended by sensation or perception. Clearly, it must be the same thing—the same I—which apprehends the predicate and the subject of a unitary judgment.

So, it is the same substantial entity, the same agent, which understands and which senses or perceives. And so what all agree is referred to by the word “I” (namely, the subject of conscious, intellectual acts) is identical with the physical organism which is the subject of bodily actions such as sensing or perceiving. Hence the entity that I am, and the entity that you are—what you and I refer to by the personal pronouns “you” and “I”—is in each case a human, physical organism (but also with nonphysical capacities). So it makes no sense to say that these embryos are human beings but are not persons. You and I once were human embryos, just as you and I once were adolescents, infants, and so on.

And so, if it is wrong to kill you today, it would also have been wrong to kill you 10 years ago, or 20 years ago, or at any point in your existence. It would have been wrong to kill you when you were an infant, but also when you were a fetus, and it would have been wrong to kill you when you were an embryo—because at each point it was still you.

PERSONHOOD AS AN ACCIDENTAL CHARACTERISTIC?

A second way in which a supporter of embryo-killing for research might argue is as follows. He might concede that a human embryo is a human being, yet deny that human beings in the early stages of their development are due full moral respect. This objection concedes that you and I once were human embryos, and so proponents of this view do not identify the self or the person with a non-physical consciousness. What they say is that “person” is an accidental attribute. That is, it is similar to being basketball player. Just as you come to be at one time, but become a basketball player only much later, so, they say, you and I came to be when these physical organisms came to be, but we became persons only at some time later. Thus, unlike the first objectors, they admit that you and I once existed in our mothers’ wombs. They admit that the thing referred to by “I” or “you” is a physical organism. What they deny is that this entity was intrinsically valuable at every stage of its duration. We could express the difference

between the two positions this way: The first objectors disagree with the pro-life position on an ontological issue, that is, on what kind of thing the unborn human embryo or fetus is. This second objection disagrees with the pro-life position on an evaluative, or ethical, position.

But this position is untenable. It is clear that one need not be *actually* conscious, reasoning, deliberating, making choices, etc., in order to be a human being who deserves full moral respect, for plainly people who are asleep or in reversible comas deserve such respect. So, if one denied that human beings are intrinsically valuable in virtue of what they are, but required an additional attribute, the additional attribute would have to be a capacity of some sort, and, obviously a capacity for certain mental functions. Of course, human beings in the embryonic, fetal, and early infant stages lack immediately exercisable capacities for mental functions characteristically carried out (though intermittently) by most human beings at later stages of maturity. Still, they possess in radical (= root) form these very capacities. Precisely by virtue of *the kind of entity they are*, they are from the beginning actively developing themselves to the stages at which these capacities will (if all goes well) be immediately exercisable. In this critical respect, they are quite unlike cats and dogs—even fully mature members of those species. Each new human being comes into existence possessing the internal resources to develop immediately exercisable characteristically human mental capacities—and only the adverse effects on them *of other causes* will prevent their full development. In this sense, even human beings in the embryonic, fetal, and infant stages have the *basic natural* capacity for characteristically human mental functions. (Of course, the full development of these capacities can be impeded from an early stage, as in the case of persons afflicted by certain severe congenital forms of retardation or impeded later in life by senility or other forms of dementia, none of which transforms human beings into subhuman creatures.) They have such basic, natural capacities even though it will take them months, indeed years, to fully actualize them.

Thus, it is important to distinguish two senses of the “capacity” (or what is sometimes referred to as the “potentiality”) for reasoning and free choice: an immediately exercisable one, and a basic natural capacity, which develops over time. And no one has been able to give an intelligible reason why we should base full moral rights on immediately exercisable capacities—which can come and go—rather than on the basic, natural capacities that a human being at any stage of development has in virtue of the kind of entity it is. Moreover, there are several reasons against requiring some additional accidental attribute in a human being for him or her to deserve full moral respect, or be a subject of basic rights—though here I shall mention only two of those reasons.

Some entities have intrinsic value and basic rights and other entities do not. Such a *radical* moral difference logically must be based on a *radical* ontological difference (that is, a radical difference among those entities

themselves). And so the basis for that moral difference (a difference in the way they should be treated) must be the natures of those entities, not their accidental characteristics which involve merely quantitative differences, or differences in degree. (By “accidental” qualities, we mean those attributes that do not help to define the nature of an entity. In humans, age, size, stage of development, state of health, and so forth are accidental qualities.) The immediately exercisable capacity to reason and make free choices is only the development of the underlying basic, natural capacity for reasoning and free choice, and there are various degrees of that development along a continuum. But one either is or is not a distinct subject with a rational nature (the traditional definition of “person”). Thus the radical difference in being that grounds the radical moral difference between a thing a mere thing and a subject of rights is difference between a sub-rational thing and a being with rational nature. And a human embryo is a subject with a rational nature.

Second, consider a person in a coma. A comatose human being is still a person, but he does not have a capacity, in the sense of an immediately exercisable capacity, for consciousness, or rationality, or free choice. Yet he surely has a right to life.

Why is this so? The clearest reason is that, what is ethically decisive is not what a being can do right now or even in the immediate future—rather what is ethically decisive is the nature of the being, the kind of being one is. The comatose human being is still a person with rights because, even if he cannot *right here and now, or in the immediate future*, have consciousness, conceptual thought, or free choices, still he is the *kind of being*, that can and will perform such actions, given time, adequate good health, and the right environment.

But this same point is true also of the human embryo or fetus. The human embryo or fetus is a being with a rational nature, he is a being with the basic natural capacity to actively develop himself to the point where he will shape his life by rational deliberation and free choice, even though it will take him several months, indeed years to do so.

It is wrong to kill a human being in a coma because he is a *being with a rational nature*—that is, he is a substantial entity that is internally oriented to reasoning and shaping his own life by rational deliberation and free choice—even though he cannot do so right away.

Since human beings are intrinsically valuable and deserving of full moral respect in virtue of what they are, it follows that they are intrinsically valuable from the point at which they come into being. Even in the embryonic stage of our lives, each of us was a human being and, as such, worthy of concern and protection.

POTENTIALITY: GAMETES, SOMATIC CELLS, AND EMBRYOS

I wish to turn now to arguments that have been advanced by advocates of embryo-destructive research to cast doubt on the proposition that human embryos deserve to be accorded such status.

People who argue that human beings in the embryonic stage do not deserve the level of respect accorded to human beings at more mature stages of development point out that the five or six-day-old embryo is very small—smaller than the period at the end of a sentence on a printed page. The embryo looks nothing like what we ordinarily think of as a human being.

What can be said in reply to this point? My reply is that it merely begs the question about the humanity and rights of the embryo to say that it does not resemble (in size, shape, etc.) human beings in later stages of development. The five-day-old embryo looks exactly like what human beings look like at five days old. Each of us looked like that during the embryonic stage of our lives. The morally relevant consideration is not appearance; rather, it is the fact that from the beginning the embryo possesses all that he or she needs, apart from a suitable environment, for self-directed growth and maturation through the stages of human development from the embryonic, through the fetal, infant, child, and adolescent stages, and into adulthood with its distinctness, unity, determinateness, and identity fully intact.

Another attempt to deny that the early human embryo is a whole human being is based on a comparison between the human embryo and a somatic cell, that is, any cell of our body besides a sex cell. Proponents of this argument claim that each of our own somatic cells has as much potential for development as any human embryo. Here is their argument: Cloning has shown that each of our cells has the genetic information necessary for producing an entire human embryo, when joined to an enucleated (nucleus removed) oocyte and placed in the right environment. Each cell has the entire DNA code; it has become specialized (as muscle, skin, etc.) by most of that code being turned off. In cloning, those portions of the code previously de-activated are re-activated. And so (the argument goes), the potentiality of the human embryo is no different than that of any of our somatic cells—a skin cell for example—and therefore, the human embryo has no more value or worth than a skin cell, hundreds of which we shed every day.

But this argument is fallacious. Of course, in *one* respect a somatic cell and a human embryo *are* similar: namely, each contains within it the entire genetic code (the genetic material). However, in the human embryo, even at the one-cell stage, the program is totally active; in the somatic cell most of this information is “switched off.” The argument simply ignores the profound and decisive differences between the two. No somatic cell has the active disposition to become a mature human being. No somatic cell will actively develop itself to a mature stage of a human being, requiring only a

suitable environment for its natural development. Cloning generates a new organism, rather than merely placing a cell in an environment suitable for its growth. Somatic cells, in the context of cloning, are analogous, then, not to embryos, but to gametes (spermatozoon and oocyte). Just as a human being who is generated as a result of the union of gametes was never a spermatozoon or an oocyte, a human being who is generated by a process of cloning (should this occur in the future) was never a somatic cell. But you and I truly were once embryos, just as we were once fetuses, infants, and adolescents. These are merely stages in the development of the enduring organism—the human being—we are.

Moreover, the argument comparing human embryos to somatic cells ignores the most obvious difference between any of our cells and a living human embryo. Each of our cells is a mere part of a larger organism; but the embryo himself or herself is a complete, though immature, human organism (human being). Somatic cells are not, and embryonic human beings are, distinct, self-integrating living beings actively disposed to direct their own maturation as members of the human species. Thus, if a skin cell dies, the human being does not; the human being lives on. If a human embryo dies, the entire human organism is dead, and cannot be replaced.

A second objection, is that monozygotic twinning shows that the embryo in the first several days of its gestation is not a human individual. The suggestion is that as long as twinning can occur what exists is not yet a unitary human being, but only a mass of cells—each cell is totipotent and allegedly independent of the others.

It is true that if a cell or group of cells is detached from the whole at an early stage of embryonic development then what is detached can sometimes become a distinct organism and has the potential to develop to maturity as distinct from the embryo from which it was detached (this is the meaning of “totipotent”). But this does nothing to show that before detachment the cells within the human embryo constituted only an incidental mass. Consider the parallel case of division of a flatworm. Parts of a flatworm have the potential to become a whole flatworm when isolated from the present whole of which they are part. Yet no one would suggest that prior to the division of a flatworm to produce two whole flatworms the original flatworm was not a unitary individual. Likewise, at the early stages of human embryonic development, before specialization by the cells has progressed very far, the cells or groups of cells can become whole organisms if they are divided and have an appropriate environment after the division. But that fact does not in the least indicate that prior to such an extrinsic division the embryo is other than a unitary, self-integrating, actively developing human organism. It certainly does not show that the embryo is a mere “clump of cells.”

In the first two weeks, the cells of the developing embryonic human being already manifest a degree of specialization or differentiation. From the very beginning, even at the two-cell stage, the cells differ in the cytoplasm received from the original ovum. Also, they are differentiated by their

position within the embryo. In mammals, even in the unfertilized ovum, there is already an “animal” pole (from which the embryo proper will develop) and a “vegetal” pole (from which the placenta, the amniotic sac and umbilical chord will develop).⁶ After the initial cleavage, the cell coming from the “animal” pole is probably the primordium of the embryo proper and the cell coming from the “vegetal” pole is probably the primordium of the placenta and other organs of the baby needed for his or her connection to the mother). Moreover, the relative position of a cell from the very beginning (that is, from the first cleavage) has an impact on its functioning. Moreover, monozygotic twinning usually occurs at the blastocyst stage, in which there clearly is a differentiation of the inner cell mass and the trophoblast that surrounds it (from which the placenta will develop).⁷

The orientation and timing of the cleavages are species specific, and are therefore genetically determined, that is, determined from within. Even at the two-cell stage, the embryo begins synthesizing a glycoprotein called “E-cadherin” or “uvomorulin,” which will be instrumental in the compaction process at the 8-cell stage, the process in which the blastomeres (individual cells of the embryo at the blastocyst stage) join tightly together, flattening and developing an inside-outside polarity.⁸ And there is still more evidence, but the point is that from the zygote stage forward, the embryo is not only maintaining homeostasis, but is internally integrating various processes to direct them in an overall growth pattern toward maturity.⁹

However, the clearest evidence that the embryo in the first two weeks is not a mere mass of cells but is a unitary organism is this: if the individual cells within the embryo before twinning were each independent of the others, there would be no reason why each would not regularly develop on its own. Instead, these allegedly independent, non-communicating cells regularly function together to develop into a single, more mature member of the human species. This fact shows that interaction is taking place between the cells from the very beginning (even within the zona pellucida, before implantation), restraining them from individually developing as whole organisms and directing each of them to function as a relevant part of a single, whole organism continuous with the zygote. Thus, prior to an

6. WERNER A. MULLER, DEVELOPMENTAL BIOLOGY 12 (Springer Verlag 1997). SCOTT GILBERT, DEVELOPMENTAL BIOLOGY 380-81 (Sinauer Associates, 7th ed. 2003); RONAN R. O’RAHILLY, M.D. & FABIOLA MÜLLER, DR. RER. NAT., HUMAN EMBRYOLOGY AND TERATOLOGY 38-39 (Wiley-Liss, 2d ed. 1996).

7. O’RAHILLY & MUELLER, *supra* note 6 at 39.

8. *Id.* 38-39; GILBERT, DEVELOPMENTAL BIOLOGY, 74; KEITH MOORE & T.V.N. PERSAUD, THE DEVELOPING HUMAN, CLINICALLY ORIENTED EMBRYOLOGY 37 (W.B. Saunders, 7th ed. 2003); WILLIAM J. LARSON, HUMAN EMBRYOLOGY 18-21 (Churchill Livingstone, 3d ed. 2001).

9. GILBERT *supra* note 8, at 25-26. *See also* O’RAHILLY & MUELLER, *supra* note 6, at 38-39.

extrinsic division of the cells of the embryo, these cells together do constitute a single organism. So, the fact of twinning does not show that the embryo is a mere incidental mass of cells. Rather the evidence clearly indicates that the human embryo, from the zygote stage forward, is a unitary, human organism.

ACORNS AND EMBRYOS

In an essay in the *New England Journal of Medicine*, Michael Sandel has challenged the position enunciated here at a more fundamental level, claiming that human embryos are in fact different *in kind* from human beings at later developmental stages. At the core of Sandel's argument is an analogy. Sandel states the following:

although every oak tree was once an acorn, it does not follow that acorns are oak trees, or that I should treat the loss of an acorn eaten by a squirrel in my front yard as the same kind of loss as the death of an oak tree felled by a storm. Despite their developmental continuity, acorns and oak trees are different kinds of things.¹⁰

So Sandel maintains that, just as acorns are not oak trees, embryos are not human beings.

Now this argument fails, I believe, and it fails in a way that highlights the basic error in supposing that human embryos lack fundamental worth or dignity and may therefore legitimately be relegated to the status of disposable research material.

As Sandel concedes, we value human beings precisely because of the *kind* of entities they are.¹¹ Indeed, that is why we consider all human beings to be equal in basic dignity and human rights. By contrast, we value oak trees because of certain accidental attributes they have, such as their magnificence—a certain grandeur that has taken perhaps 75 or a hundred years to achieve. If oak trees were valuable in virtue of the *kind* of entity they are, then it would be just as unfortunate to lose an acorn as an oak tree (though our emotional reaction to the two different kinds of loss might, for a variety of possible reasons, nevertheless might differ). Sandel's purported analogy works only if he disregards the key proposition asserted by opponents of embryo-killing, namely, *that all human beings, irrespective of age, size, stage of development, or condition of dependency, possess equal and intrinsic dignity by virtue of what (i.e., the kind) of entity they are, not in virtue of any accidental characteristics, which can come and go, and which are present in human beings in varying degrees.* Oak trees and acorns are not equally valuable, because the basis for their value is not *what* they are

10. Michael J. Sandel, *Embryo Ethics—The Moral Logic of Stem Cell Research*, 351 *NEW ENG. J. MED.* 208 (Jul. 15, 2004).

11. *Id.*

(i.e., the kind of entity they are), but precisely those accidental characteristics by which mature oaks differ from acorns (in particular, the magnificence that comes only with maturity).

However, unlike the magnificence of a mature oak, personhood is not an accidental characteristic, that is, a characteristic which one acquires at some point after he exists and may lose at another point. Being a person is being an individual who has the basic natural capacity to shape his or her life (by reason and free choice)—even though that natural capacity may not be immediately exercisable (as when someone is in a coma) or may take months or years to become immediately exercisable (as with a human infant, fetus, or embryo). If not just sentience, but also being “capable of experience and consciousness” were required to be a person, then it would follow that infants and the comatose would not be persons either. Being a person, then, is not a result of acquired accidental attributes, but is being a certain type of individual, an individual with a rational nature. But human beings are individuals with a rational nature at every stage of their existence. We come into being as individuals with a rational nature, and we do not cease being such individuals until we cease to be (by dying). We did not acquire a rational nature by achieving sentience or the immediately exercisable capacity for rational inquiry and deliberation. We were individuals with a rational nature even during the early childhood, infant, fetal, and embryonic stages of our lives. If we are persons now, we were persons then. We were never “human nonpersons.”¹²

12. Robert George and I confronted Professor Sandel with this counterargument to his position in a letter to the editor of the *New England Journal of Medicine* after his article appeared. In his reply, which was published with our letter and several others, Sandel offered a question-begging epithet rather than an argument. He said that our case against his position rests on the “quaint” metaphysical distinction between essential and accidental attributes of things. He did not, however, offer any ground for dismissing the distinction as “quaint.” Nor did he explain why it should be rejected or how philosophical (including ethical) reflection and discourse can get along without it. This is a critical point, since Sandel himself concedes that the status of a human embryo hinges on the kind of entity it is. His case stands or falls on whether he can make good on his promise to show that human embryos and human beings are different in kind. Our critique of his analogy shows that the difference between human embryos, infants, and adults, are in fact not differences in kind, but merely differences in stages of development and maturity of beings of the same kind. This is also true of the differences between acorns, saplings, and mature oaks. We then showed that the reason for valuing oak trees, unlike the reason for valuing human beings, has to do, not with the kind of entity an oak is, but with the magnificence of (healthy) mature members of the oak species—an accidental quality in oaks (as in humans).

Does Sandel really want to say that it is arbitrary which qualities or attributes make a human being the kind of being it is, and which do not (and are in that sense accidental)? Does he really want to deny our claim that being a complete, distinct member of the species *Homo sapiens* is central to the kind of entity one is, while being male or female, tall or short, young or old, European, Asian, or African—all accidental qualities—is not? If he honestly thinks that this distinction is merely “quaint,” then he owes us an argument

THE IRRELEVANCE OF THE THEOLOGY OF “ENSOULMENT”

Perhaps you will have noticed that I have said nothing in this lecture about religion or theology. That was not some sort of tactical decision; rather it reflects my view about how to think about the dispute over human embryo-killing. It is sometimes said that opposition to embryo-destructive research is based on a controversial theology of “ensoulment.” However, I don’t think the question has anything to do with “ensoulment” or whether a human being who dies in the embryonic stage will have spiritual remains in the form of an immaterial soul.

Questions of whether human beings have spiritual souls need not be engaged in arguments about whether human embryos are human beings or whether there is a rational basis for treating some human beings—such as those at the embryonic, fetal, or infant stages—as creatures lacking the worth and dignity of human beings in later developmental stages.

One does not first examine to see whether the soul is present and from that observation conclude that there is or is not a human being present. Rather, one examines to see whether there are characteristics—physical characteristics—which indicate the presence of a human being, however small he or she is, and from that conclusion one further concludes (if one does hold that human souls exist) that the human soul must be present. As we saw above, it is often the defenders of abortion who distance themselves from the body, while it is the pro-life side that defends the point that that we are essentially bodily beings, living bodies of a particular sort.

for why we should reject a distinction so central to American jurisprudence, and indeed to the main traditions of western thought about law, ethics, and their relationship.

The nature of a being or other entity—the kind of thing it is—is established by its characteristic actions and reactions, and regular properties; its other characteristics (a human being’s height, weight, sex, age, race, ethnicity, stage of development, state of mental or physical health, etc.) do not establish its nature, and are in that sense accidental. Does anyone seriously doubt that I would not be me if I had entered room A rather than room B—proving that the place I am in must be an accidental attribute? And if that is so, then it also follows that I endure through time, and so my age is also an accidental attribute. In short, there are clear reasons for holding—as is almost universally recognized—that size and age are accidental attributes. So, the magnificence of an oak tree—an attribute it has only, if all goes well, with maturation—cannot reasonably be considered to establish the oak as the kind of thing it is. An oak sapling, on any reasonable account, is the same kind of entity, differing from the mature tree in respect of its stage of development (and, if the mature oak is in good shape, in its magnificence). The entity that began as an acorn, became a sapling, and eventually developed to full maturity is a unitary and determinate entity that endured over time. It persisted through the different stages of its development—from acorn, to sapling, to full maturity. Similarly, it is simply a fact—shown by *in vitro* fertilization and cloning—that a mammal can originate either *in vivo* or *in vitro*, either by fertilization or by cloning. Hence a human being’s location, and how he or she originated, does not make a difference as to the kind of being he or she is (i.e., his or her essential nature).

Let me illustrate the point this way. Suppose someone said that, we could make significant scientific progress if we could obtain the kidneys, liver, and other body parts, from some selected six-week-old babies. Let's say we could find out which six-week-old babies the parents didn't want any more and wanted to get rid of. Could we dismember these babies for the sake of using their organs to transplant into other children? Would it be morally right to do that?

Well, of course it would not. Everyone can see that that would be morally wrong. But, now what I want to ask you is, what is the morally significant difference between doing that and dismembering a human being at an earlier stage of his or her development? Where is the morally relevant difference? It is wrong to dismember six-week-old babies to obtain their body parts for the benefit of others. But why would it be morally right to do the same thing to a human being who is just several months younger?

Of course the human being in the earlier stages of his or her development *looks* very different from what she looks like when she is six weeks old after birth. But it is not wrong to kill the six-week-old baby because of what she looks like. It is wrong to kill her because she is a human being, because she is a human person.

But the human embryo also is a human being, a human person. The human embryo is identical with the entity that will, if all goes well, actively develop herself through gestation, the infant stage, the adolescent stage, and on up to adulthood, with her identity and distinctness intact. The human embryo and the six-week-old baby are the same entity, the same human being, just at different stages of development.

So, I want to underline this: what makes killing a six-week-old infant wrong is also present in the killing of a human embryo. Of course, they *look* different, one is much smaller than the other, but in every *morally significant* way they are the same.

Thus, I believe that law and public policy should proceed on the basis of full moral respect for human beings irrespective of age, size, stage of development, or condition of dependency. As I see it, justice requires no less. In the context of the debate over killing embryos for research purposes, it requires, in my opinion, a ban on the production of embryos, whether by cloning or other processes, for research that harms them or results in their destruction.

Embryonic human beings, no less than human beings at other developmental stages, should be treated as subjects of moral respect and human rights, not as objects that may be damaged or destroyed for the benefit of others.