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Moral Views on the Use of Human Embryonic Stem Cells

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ABSTRACT

The use of human embryonic stem cells have been suggested as a means to solve the problem of organ failures and terminal illness that require more advanced form of treatment. All these can only be achieved through extraction of human embryonic stem cells (ESC) to clone "tailor made" organs that will not suffer immunological rejection by the body when transplanted and equally for research and biopsy. This practice poses a problem in bioethics as there are ethical and moral controversies surrounding the extraction and the use of human embryonic stem cells by some scholars. Hence, this work sets out to propose central and moral grounds for the creation, extraction and the usage of human embryonic stem cell. The work concludes that the use of human embryo is moral if and only if it gears towards saving lives and enhancing healthy living. This work recommends that ban on embryonic stem cell research in some countries should be lifted so that scientists can carry out more advanced research on how best to improve life for humanity.

Keywords: Human embryo, stem cells, cloning and therapeutic.

Introduction

Bioethics has always tried to proffer possible ethical solutions and guidance to biomedical practices. Some of these practices include cloning, creation of embryos, stem cell research and so on. These practices gear towards solving the problems of infertility, organ failures and terminal illness that require more advanced form of treatment. With these medical problems on the increase in this contemporary era, the issue of human and therapeutic cloning becomes salient and eminent in solving some of these problems. All these can only be achieved through extraction of embryonic stem cells (ESC) to clone "tailor made" organs that will not suffer immunological rejection by the body when transplanted. This practice poses a problem as there are ethical and moral controversies surrounding the extraction and the use of human embryonic stem cells. More so, it has spurred moral and ethical debate and has proved problematic in bioethics.

This ethical controversy and problems sprang up after Dolly the sheep was cloned from an adult cell through Somatic Cell Nuclear Transfer (SCNT). These incidents stimulated arguments and controversies among moral philosophers, political leaders, religious leaders, world communities and organizations because scientists began to contemplate the extraction of human ESC and subsequently cloning of humans (McKinnell & Di Berardino, 1999).Before modern cloning which centered on humans, there have been several attempts on cloning using amphibians in the 1880s.The reason for using amphibian eggs instead of mammalian ones was eminently practical during this time. In this era, Wilhelm Roux and August Weismann independently proposed the germ plasm theory: the egg and sperm contribute chromosomes equally to the zygote (fertilized egg). Another cloning breakthrough was made in 1894 when Hans Driesch isolated blastomeres of 2 and 4 cell embryos of sea urchins and observes development of blastomeres into small but complete larvae. In 1914, Spermann conducted a form of nuclear transfer but was done with a strand of baby hair. He was the first person to demonstrate definitively than an organism at the two-celled stage could be divided into two single-celled entities, and each of those cells would develop into an individual organism. Between 1940 and 1950 various species of mammalian embryos were cloned by embryo splitting, but success was limited to splitting of embryos at the stages prior to implantation to the uterus. Then in 1950, the first cloning experiment in frogs was performed by Robert Briggs and Thomas J. King. The types of cells used were not from fully grown frogs, but rather blastula cells. To be sure, not all of the subsequent experiments yielded negative results (Darcy, 2003). By the end of the 1960, progress on the advancement of cloning technology in frogs had slowed down considerably. There was no significant breakthrough in cloning technology in the 70s and 80s. In early 1981, an announcement of cloned mice was made by the highly respected researcher Karl Illmensee. These mice were supposedly cloned from embryo cells, and so did not have full effect of cloning from fully grown adult cell. However, the scientific community recognized this as a major breakthrough. Unfortunately, despite many efforts to repeat the experiments, no one was able to replicate the reported results (Kolata, 1998;Darcy, 2003).

The two group's that pushed the boundaries of cloning research during the 80s were located on the opposite sides of the Atlantic, one in Wisconsin and the other in England. Working at the same time as the Wisconsin group on the problem of mammalian cloning was Steen Willadsen. Willadsen came up with the innovation of using unfertilized host eggs instead of host eggs that had already been fertilized prior to introduction of the new nucleus. This led to the birth of a lamb in 1984. Everything changed with the cloning efforts of Ian Wilmut and Keith Campbell in 1996 when they successfully cloned Dolly from an adult sheep using Somatic Cell Nuclear Transfer (SCNT).Instead of using early embryo cells that had already

differentiated, they used cells from udder cell tissue that had been stored in the deep-freeze conditions. In 1998, two years after the birth of Dolly, Teruhiko Wakayama and his laboratory successfully cloned mice using cumulus cells- adult cells which surround the egg, instead of cells from skin tissue (Darcy, 2003;Kolata, 1998). Eight years after the birth of Dolly - February of 2004, scientists at the Seoul National University (SNU) in South Korea announced the first isolation of stem cells from a cloned human embryo. In May 2005, the same group announced that they had achieved major advances in the efficiency of creating human cloned embryo using Somatic Cell Nuclear Transfer (SCNT) and in isolating human stem cells from the cloned embryos (Johnson & Williams, 2006).

The problem that led to this work centres on the question of morality on the use of human embryonic stem cells for cloning and other therapeutic purposes. Furthermore, some other practices like the deliberate production or creation of embryos in order to be used as sources of stem cells and therapeutic cloning, the use of these cells for research purposes and the creation and destruction of the created embryo has been perceived by most scholars as being problematic. Some Philosophers like Axel Kahn (1997) and some organizations like the United Nations Educational, Scientific and Cultural Organization (2004) have objected to the use of human embryo on the grounds that the procedure would violate the dignity and respect owned to humans and therefore is unethical. While others like John Harris looks at this concept from the utilitarian, teleological and liberal point of view. Harris argues that the use of human ESC can be said to be moral if it will predictably benefit man and improve lives. And if it improves lives and brings about healthy living, then the morality of the use of ESC should not be questioned. This tends to be problematic as it gives rise to two groups with opposing views on the morality and ethical implications of the use of human embryonic stem cell.

Explication of Terms

The use of human embryonic stem cell has proved to be one of the controversial and recent developments of the last decade. It has spurred moral and ethical debate and has proved problematic in bioethics. What is an embryo?

According to the Oxford Advanced Learner's Dictionary of Current English (2005), an embryo is a young animal or plant in the very early stages of development before birth, or before coming out of its egg or seed, especially a human egg in the first eight weeks after fertilization. And what are stem cells?

Stem cells are cells that can both renew themselves in the undifferentiated state as well as differentiate into descendent cells that have a specific function. Some organs of the body have capacity to regenerate throughout their lifespan. Among these are: skin cells, blood cells, cells of the uterus and cells that line the gastrointestinal tract. The secret of their regeneration lies in the presence of the stem cells. Stem cells enable these organs to renew themselves periodically. The malleability of these stem cells is highly restrictive such that they could only produce their types. Skin cells produce skin cells, and blood cells produce blood cells. It implies that adult stem cells are restricted to forming only limited number of cell types. Some tissues such as the heart completely lack stem cells. Once they are dead, they cannot regenerate themselves. The only exception to the limited nature of stem cells is located in the embryo. A stem cell of an embryo can give rise to literally all cells and tissues of the body, both in an embryo and in an adult. This ability to generate all cell types in the foetus and in the adult, and the capability of self-renewal is called pluripotency. Embryonic stem cells are pluripotent (Ekennia, 2003).

For Patricia .A. Roche and Michael .A. Grodin (2000), there are different types of stem cells, and research on each type raises different ethical issues. One of the distinguishing factors among the types of stem cells found in the human body is the degree to which these cells are committed to a particular function. Stem cells present at the earliest stage of embryonic development are capable of generating a whole new organism. For this reason, they are sometimes referred to as totipotent. A second type, often called pluripotent stem cells, has the ability to differentiate into different types of specialized cells such as heart, muscle, blood, or brain. Pluripotent stem cells intrigue scientists because of their therapeutic potential—for example, to prevent and repair damage to organs and tissue caused by birth defects, injuries, or disease. These versatile stem cells can be derived from the early-stage embryo or from cadaveric fetal tissue. The third and most differentiated type of stem cells is found in the adult organism; although those cells are capable of reproducing themselves, they are not thought to offer the same therapeutic potential as embryonic stem cells.
The issue on the use of human ESC remains problematic as some scholars believe in the Moral significance thesis argument.

Moral Significance Thesis Argument.

The moral significance thesis holds that early embryos have equal or similar enough intrinsic worth to that of a person. Hence, the intentional or foreseeable destruction of embryos, whether in the sourcing of stem cells or other material from embryos, in therapy, enhancement and medical research, or in any other way is illegitimate and unethical.

And against these moral significance thesis, John Harris (2007) argues that the moral significance thesis generates absurd implications connected to embryo splitting (namely, it would be immoral to recombine or split embryos, or to fail to split embryos). The determinate defence of the moral significance thesis, on which if X has the potential to become Y then X already possesses (much of) Y's value is unconvincing. The moral significance thesis is not rescued by the "future of value" argument. More so he argues that the moral significance thesis assumes that early embryos have rights ("intrinsic worth") but they cannot, and most legislators and the law in most jurisdictions and in international courts agrees that they do not. The moral significance thesis assumes that killing is far, far worse than allowing to die, but that would, among other things, condemn the passengers of flight United 93 to moral obloquy and the intended victims of the terrorists to death. He further argues that even the supporters of the moral significance thesis tend to recognize that embryos lack the kind of worth that would make destroying embryos in embryonic stem cell research wrong. For they

procreate (or permit others to do so), although procreation destroys embryos, often for less important purposes. Supporters of the moral significance thesis do not even support expanding research into ways to improve assisted reproductive technology (ART) so that it can eventually replace natural procreation with an embryo-saving method of procreation.

While for some scholars like Roche and Grodin (2000), there are different types of stem cells, and research on each type raises different ethical issues. One of the distinguishing factors among the types of stem cells found in the human body is the degree to which these cells are committed to a particular function. Stem cells present at the earliest stage of embryonic development are capable of generating a whole new organism. For this reason, they are sometimes referred to as totipotent. A second type, often called pluripotent stem cells, has the ability to differentiate into different types of specialized cells such as heart, muscle, blood, or brain. Pluripotent stem cells intrigue scientists because of their therapeutic potential—for example, to prevent and repair damage to organs and tissue caused by birth defects, injuries, or disease. These versatile stem cells can be derived from the early-stage embryo or from cadaveric fetal tissue. The third and most differentiated type of stem cells is found in the adult organism; although those cells are capable of reproducing themselves, they are not thought to offer the same therapeutic potential as embryonic stem cells. Whereas research on adult cells provides the opportunity to study cell commitment and differentiation, it involves routine ethical concerns which focus on protecting and showing respect for the human subjects who may be the sources or recipients of these stem cells. Consequently, the voluntary nature of participation and disclosure of the nature of the risks and benefits to the subjects are primary ethical matters when these stem cells are involved.

In contrast, the methods presently available to derive stem cells from embryos involve the destruction of the source, that is the embryo, and depending on the moral significance or status that we attribute to human embryos, raise different concerns. If we equate early human embryos with the full status of persons, destruction of the embryo during research becomes equated with the outright sacrifice of a person to gain scientific knowledge, clearly a violation of established law and ethics on human experimentation. This view of early embryos is, however, far from universally held. In fact, many view early human embryos from an entirely different perspective. They point to the fact that at this early stage, embryonic cells are too unspecialized to be a unique entity. Consequently, they grant embryos no higher moral significance than that of a cluster of cells. As such, embryos warrant no particular concern or protection, and no limitations on their use in research would be ethically necessary. The third perspective attributes higher moral significance to human embryos than to cells, but does not go so far as to grant them the same level of respect and concern due to persons. It is this intermediary position that some, including the NBAC, find most reasonable as it recognizes the significant and real differences between human embryos and fully developed human beings as well as the unique relationship they have to each other. Assignation of this intermediary status does not, however, automatically establish the parameters for embryonic stem cell research and resolve all related ethical dilemmas. Instead, it allows discussion to focus on balancing the interests involved, rather than accommodating either of the polarized views of embryos previously described. It thus avoids the prohibition of stem cell research that involves the destruction of embryos outright and the dismissal of the ethics of such research as a nonissue (Roche & Grodin, 2000).

Moral Status of an Embryo

According to Mary .A. Warren (2004) to have a moral status is to be an entity towards which moral agents can have moral obligations. There are so many philosophical theories of moral status and each of these theories promulgates a single criterion of moral status, based upon some properties possessed by some or all living organisms. One of the most inclusive criteria is that of Albert Schweitzer who defends a principle of *equal moral status* for all living organisms, from human beings to the simplest microorganisms (Schweitzer, 1929). In contrast, Immanuel Kant's theory is one of the more exclusive: he argues that only rational moral agents are ends in themselves and that all other organisms are mere things, towards which we can have no moral obligation (Kant, 1948). Between these extremes lie theories of intermediate inclusiveness, such as the *sentience-based criterion* defended by Peter Singer and *Subject-of-a-life criteria* defended by Tom Regan. Singer's criterion of moral status is the capacity for sentience, that is, the ability to experience pleasure or pain. His utilitarian principle of equal consideration requires that, in our moral calculations, equal considerations be given to the comparable interests of all sentient beings (Singer, 1975). All sufficiently developed vertebrate animals are probably sentient, and many complex invertebrates, such as insects, arachnids, and crustaceans, are also likely to have a degree of sentience. Thus, the sentience standard grants and equal morals status to all these animals, though (probably) not to plants, simple invertebrate animals, or microorganisms. Tom Regan's theory is more exclusive than Singer's; he accords equal basic moral rights to only those sentient beings that are subject-of-lives. Subject-of-lives are beings are beings that are capable of such relatively sophisticated mental activities as memory anticipation of the future, and intentional action in the pursuit of conscious goals. Regan suggests that all mammals over a year of age are subjects and that some other animals may also be subjects. Each of these theories focuses on an intrinsic property of some organisms which is relevant to the moral consideration that we owe to them (Regan, 1983).

Since human cloning has the human embryo as it's "raw material," the morality of its usage in the cloning practice and the moral status of the human embryo have been at the forefront of the moral and ethical debate. So many philosophers, theologians, bioethicists, medical practitioners and world organization have different views both for and against the moral status of an embryo and its use for cloning purposes. Amidst so many lines of thought, three principle lines of moral reasoning and argument can be discerned in the debate.

First, one can take the deontological stance that the destruction of human embryos represents such a great infraction of respect for human dignity that it is never justified, regardless of the benefits that it might lead to. This position is for example taken by the Roman Catholic Church, as a logical consequence of its teachings that ensoulment takes place at the time of conception and that therefore the killing of an embryo equals murder, even at a very early stage of development. Second, at the other end of the spectrum we also find a principled position which states that human blastocysts have none of the properties (such as sentience or self-awareness) on the basis of which dignity or respect might be due to them. Therefore, embryo destruction is no greater infringement on human dignity than the destruction of human cells and it can certainly not be compared to the

destruction of a person. Therefore, the destruction of embryos is a trivial matter which should be allowed even if the possible gains for humanity are small. Third, between these two extremes lies a position that states that while we cannot recognize the same status for embryos that we do for 'full-grown' human beings, the facts that they can grow into human beings and that they are generally cherished by their progenitors require us to treat them with a level of respect that is not absolute, but not trivial either. Hence, this stance leads to a utilitarian balancing between the benefits of the research for which embryos are destroyed and the disadvantage of embryo destruction itself. If the benefits outweigh the disadvantage, then embryo research is ethically justified (Mertes, 2012).

Sandel (2005) identifies three possible ways of conceiving the moral status of the embryo (a) as a thing (b) as a person, or (c) as something in between. He further argues that to regard an embryo as a mere thing, open to any use we desire tend to miss its significance as nascent human life. For him, we do not need to regard an embryo as a full human person in order to believe that it is due a certain respect. Personhood is not the only warrant for respect. For example, to respect the old growth forest does not mean that no tree may ever be felled or harvested for human purposes. Respecting the forest may be consistent with using it. But the purpose should be weighty and appropriate to the nature of the thing. He asserted that one way to oppose a degrading, objectifying stance toward nascent human life is to attribute full personhood to the embryo (That is *equal moral status* position).One way of assessing this view is to play out its full implications, in order to assess their plausibility. A further implication of the equal moral status view is that harvesting stem cells from a six-day-old blastocyst is as morally abhorrent as harvesting organs from a baby. If embryonic stem cell research is morally equivalent to yanking organs from babies, it should be treated as a grisly form of murder, and the scientist who performs it should face life imprisonment or the death penalty. Sandel, more so, stated a further source of difficulty for the *equal moral status* view lies in the fact that, in natural pregnancies, at least half of all embryos either fail to implant or are otherwise lost. It might be replied that a high rate of infant mortality does not justify infanticide. But the way we respond to the natural loss of embryos or even early miscarriages suggests that we do not regard these events as the moral or religious equivalent of infant mortality. Otherwise, we would carry out the same burial rituals for the loss of an embryo that we observe for the death of a child. Sandel further enunciated that the conviction that the embryo is a person derives support not only from certain religious doctrines but also from the Kantian assumption that the moral universe is divided in binary terms: everything is either a person, worthy of respect, or a thing, open to use. But this dualism is overdrawn. He concluded by proposing that the way to combat the instrumentalizing impulse of modern technology and commerce is not to insist on an all-or-nothing ethics of respect for persons that consigns the rest of life to a utilitarian calculus. Such an ethics, for Sandel, risks turning every moral question into a battle over the bounds of personhood. He recommended that stem cell research to cure debilitating disease, using six-day-old blastocysts, cloned or uncloned, is a noble exercise of our human ingenuity to promote healing and to play our part in repairing the given world. Stem cell cloning and other forms of embryo research should be allowed but, subject to regulations that embody the moral restraint appropriate to the mystery of the first stirrings of human life. Such regulations should include licensing requirements for embryo research projects and fertility clinics, restrictions on the commodification of eggs and sperm, and measures to prevent proprietary interests from monopolizing access to stem cell lines (Sandel, 2005). In contrast to the above view, Kahn (1997) asserts that creation of human embryos exclusively as a means, uniquely as a source of therapeutic material, would therefore be in contradiction to Kant's principle, whose universality is far superior. He further stated rightly that the debate is about the status of the human embryo and its right as a human individual. In general, however, for Kahn, all those who would legitimize de novo creation of human embryos for research or preparation of therapeutic material base their position on their belief that the embryo is not a human individual and therefore they say so without calling Kant's principle into question.

Joseph Ratzinger and Alberto Bovone (1987) making reference to the Second Vatican Council of the Catholic Church argued that "Life once conceived, must be protected with the utmost care; abortion and infanticide are abominable crimes". And that human life must be absolutely respected and protected from the moment of conception. They further asserted that from the time the ovum is fertilized, a new life has begun which is neither that of the father nor of the mother, rather the life of a new human being with his own growth. To this perpetual evidence, modern genetic science brings valuable confirmation. It has demonstrated that, from the first instant, the programme is fixed as to what this living being will be, that is, a man. This individual-man with his characteristic aspects already well determined. Right from fertilization is begun the adventure of a human life, and each of its great capacities requires time to find its place and to be in a position to act. The concluded by stating that the fruit of human generation, from the first moment of its existence (that is to say from the moment the zygote has formed) demands the unconditional respect that is morally due to the human being in his bodily and spiritual totality. The human being is to be respected and treated as a person from the moment of conception; and therefore, from that same moment his rights as a person must be recognized, among which in the first place is the inviolable right of every innocent human being to life. Therefore, since the embryo must be treated as a person, it must also be defended in its integrity, tended and cared for, to the extent possible, in the same way as any other human beings. In line with the teachings and doctrines of the Catholic Church, Ekennia (2003) argues that human life begins at conception. Hence, he re-affirmed that the blastocyst is a human being for the simple reason that it contains a complete genome and all that is needed to develop into an adult human being. To extract stem cell from an embryo is to destroy the life in it, which is the same as destroying human life. He concluded that it would be a dangerous ethical precedence to destroy many for the sake of a few. Therefore, for him, utilitarian philosopher would subscribe to the destruction of human life for the temporary benefit of prolonging another. No logic can justify the creation of many lives only to allow a few to reach their natural goal. Any intentional killing of a human being, at any stage of its development, should be considered immoral, unethical and unnatural. But in refutation to this view, Ian Wilmut retorted that ethical concerns are raised by the use of human embryos, either for the isolation of a small number of stem cell lines or to derive stem cell for each patient. He states thus;

> Some people grant an embryo the status as an adult. It is human. For them, it is unacceptable to consider using an embryo, even in the cause of providing therapy for a patient. However, it is inappropriate to judge such an early embryo as being equivalent to a new-born baby. (Ekennia, 2003, p.39)

He further argues that the embryo from which stem cells are derived, 6 or 7 days after fertilization, is a small ball of some 250 cells, only just visible to the naked eye. The cells are embryonic in nature, with no evidence of the formation of a nervous system. Indeed, the nervous system will not begin to form for several weeks. As the embryo is not yet aware, it is a potential person, but not yet a person in the critical sense. In these circumstances, the cell of the embryo can be used. After successful IVF treatment, the embryos at similar stages are destroyed because the patient does not require them. There is no fundamental difference between the use of a small number of embryos donated after IVF treatment or the deliberate production of embryo for each patient.

In Lisa Sowle Cahill (2010) view, the main point of contact between abortion and stem cell research is the vexing question of the moral status of human life in its most primitive stages. Virtually all debaters and policy statements now concede that the embryo from fertilization deserves respect, but differ very widely about what this means in practice. As far as enlarging the area of consensus is concerned, considerable energy has been invested by those who approve of stem cell research to show that, even if one regards an implanted embryo or a foetus as deserving of protection, this does not apply to the embryo in its preimplantation stages, before it has attained settled individuality (that is, while its individual cells are still totipotent and capable of multiplying into individual organisms, e.g., twins). For Cahill, the working hypothesis is that even those who object to abortion on moral grounds should be able to accept research on the early embryo, including research on its stem cells, if they can be persuaded to concur in a moderately "developmental" view of embryonic status. However, it may be simplistic to assert that the status of personhood stands or falls with this one criterion of biological individuation. Cahill hence opined that;

> Even those not interested in defending the right to life of embryos may acknowledge that defining and establishing criteria of personhood is philosophically complex. Even if the embryo does not have the full moral standing of a person at the point at which it is destroyed through removal of stem cells, it may still have some morally significant status. (Cahill, 2000. p. 132)

She therefore proposes that although there may be equally good reasons to seek an over lapping consensus about a cautious approach to stem cell research as there are to seek approval. The expansive use of embryos and foetuses as experimental material and as therapeutic resources to benefit others represents an instrumental view of primitive human life, the indirect commercialization of human reproduction (by using ova and embryos to further the development of pharmaceutical products and biotechnology), and a cultural ethos in which one's ability to override social mores with impunity is proportionate to one's financial assets or social prestige. The moral status of individual human embryos is far too narrow a base from which to grapple with the social ethics of embryo and stem cell research. Larger social attitudes, trends, and consequences may seem marginal to the immediate debate because they are difficult to measure and evaluate in the short term by empirical methods, or with reference to firm consequential predictions. They are no less important for all that. In fact, they are vital to the kind of society biomedical policy reflects or helps to create (Cahill, 2000).

The fact that the precise nature of the derived stem cell itself is sometimes avoided or obfuscated is an indicator that there are powerful interests favouring expanded embryo and stem cell research, and discouraging open, transparent analysis of it. For instance, some authors describe the inner cell mass of the preimplantation embryo as yielding cells that are themselves "totipotent" (capable of developing not only into any kind of human cell, but also into a new embryo). Yet, the NIH primer on stem cells (published in conjunction with the NIH's plan to proceed with funding of research on stem cells not actually derived with public money) states unequivocally that the "inner cell mass cells are only pluripotent (that is they can give rise to many types of cells but not all types of cells necessary for fetal development) Because their potential is not total, they are not totipotent and they are not embryos. It is true that such cells could not develop into embryos or foetuses if placed in a woman's uterus. However, this may be so only because the isolated cell has no placenta to sustain it, not because it lacks the genetic or biological ingredients of a new individual organism. The analysis avoids considering the precise nature and potential of the stem cell in its own right. More intense scrutiny of the uncertainties that are there might obstruct the political, scientific, and economic interests pressing for national funding of stem cell research. A clear, decisive separation of embryos and stem cells more usefully promotes ethical and social acceptance of research on the latter (Cahill, 2000).

When does life begin?

According to Harris (1985) the new techniques of in vitro embryology, which make possible the growing of embryos to provide tailor-made human tissue, give us further reasons for being clear about the relative value of the embryo and the adult. For him, many people think the answer to this question could be settled if we could be sure about the answer to the related question 'when does life begin?', and, returning to the other end of the continuum, that our problems about the management of those in a persistent vegetative state would be resolved if we had an adequate definition of death. Hence, Harris argues that both these questions are misconceived even if they could be given determinate answers, and that what we need to know is not when life begins, but rather when life begins to matter morally. And the correlated question is not 'when does life end?' but rather 'when does life cease to matter morally?'

In Harris' view, many people have supposed that the answer to the question 'when does life begin to matter morally?' is the same as the answer to the question 'when does human life begin?' The moment of conception may seem to be the obvious answer to the question of when life begins. According to Harris, over any rival candidates it seems to have the decided edge that it is an identifiable event from which point the egg begins the continuous process that leads to maturity. But of course the egg is alive well before conception and indeed it undergoes a process of development

and maturation without which conception is impossible. The sperm, too, is alive and wriggling. Life is a continuous process that proceeds uninterrupted from generation to generation continuously (or at least sporadically) evolving. Harris opines thus;

> A number of 'things' may begin at conception. Fertilisation can result not in an embryo but in a tumour which can threaten the mother's life. This tumour, called a hydatidiform mole, would not presumably be invested with all the rights and protections that many believe spring fully armed into existence at fertilisation. Even when fertilisation is, so to speak, on the right tracks, it does not result in an individual even of any kind. The fertilised egg becomes a cell mass which eventually divides into two major components: the embryoblast and the trophoblast. (Harris, 1985. pp. 10)

The embryoblast becomes the foetus and the trophoblast becomes the extra embryonic membranes, the placenta and the umbilical cord. The trophoblastic derivatives are alive, are human, and have the same genetic composition as the foetus and are discarded at birth. For Harris, a further complication is that the fertilised egg cannot be considered a new individual because it may well become two individuals. The fertilised egg may split to form twins and this can happen as late as two weeks after fertilisation. Hence, life is a continuum and the emergence of the individual occurs gradually. At this point it is commonly argued that if life does not begin at conception and if it cannot be said that a new individual human being begins there, at least the potential for a new human being is then present complete with its full genetic make-up and with all its uniqueness and individuality. And since the fertilised egg is potentially a human being we must invest it with all the same rights and protections that are possessed by actual human beings. This we may call 'the potentiality argument' (Harris,1985).

The potentiality argument

There are two sorts of difficulty with the potentiality argument which are jointly and severally fatal to it. The first is that the bare fact that something will become X (even if it will inevitably become X, which is far from being the case with the fertilised egg and the adult human being) is not a good reason for treating it now as if it were in fact X. We will all inevitably die, but that is, we suppose, an inadequate reason for treating us now as if we were dead. The second difficulty is that it is not only the fertilised egg that is potentially a human being. The unfertilised egg and the sperm are equally potentially new human beings. To say that a fertilised egg is potentially a human being is the same thing with saying that if certain things happen to it (like implantation), and certain other things do not (like spontaneous abortion), it will eventually become a human being. But the same is also true of the unfertilised egg and the sperm. If certain things happen to the egg (like meeting a sperm) and certain things happen to the sperm (like meeting an egg) and thereafter certain other things do not (like meeting a contraceptive), then they will eventually become a new human being. According to Harris, all that can safely be said of the fertilised egg is that it is live human tissue. Life itself does not begin at fertilisation, for the egg and the sperm are alive also. Life continues, and so what we need is not an account of when life begins but of when life begins to matter morally (Harris, 1985).

Conclusion

The place of ethics in the society, in our daily life practices and in Biomedicine cannot be over emphasized. Because without 'moral checks' on our actions and reactions, humans will be on the same pedestral with brutes. Since the 20th and 21st century biomedical practices has been strong and more pronounced because of the new developments in science, technology and in the field of medicine. Hence, there is need for moral evaluation on these practices. There is a visible but thin line between moral and immoral practices on the ethics of human cloning with regards biomedical ethics.

Based on these practices and the discourse at hand, this study concludes that embryos and their cells have potentials, but they have different potentials at different stages and weeks of their existence. At the pluripotent stage we cannot attribute the potentiality of a full human individual to a pluripotent cell from an embryo but we can do that for a cell of an embryo at the totipotent stage. Therefore, it is a moral practice to extract some of these pluripotent cells from embryos for therapeutic cloning and other therapeutic purposes as it narrows down to the moral obligation we owe to humanity to do good.

This study further postulate that it is unethical and immoral therefore that in the present state of technology spare embryos which are by-products of natural sexual procreation are irretrievably lost instead of being used to do good by improving and saving lives. We can as well see that it is an inevitable part of natural procreation that embryos miscarryand die without ever becoming such a moral important new human being. Since this is the case, then it is difficult to see why the creation of embryos for therapeutic and research purposes (utilitarian purposes), well calculated to cure or prevent life-threatening conditions of future human beings, is not equally expressive of the sacred and symbolic importance of human life. This is because doing something good is morally better than doing nothing. More so with the creation and use of human ESC, cloned compatible organs may supply many of the needs for tissue repair and replacement, releasing more donor organs to meet transplant needs which cannot be met in other ways.More so, since it might be possible to produce tissues and organs that are compatible with the recipient (given that the cells utilised in the therapy would belong to them), without creating embryos and harvesting embryonic stem cells (ESC). This would resolve problems of shortage of organs, problems of immunological rejection and would satisfy those who believe that creating and killing embryos is unethical.

It is logical and moral to do something good than to do nothing at all; it must be better to make good use of something than to allow it go to waste. It must surely be more ethical to help people than to help no one. In this context, this principle implies that tissue and cells fromIVF and

embryosshould be available for beneficial purposes in the same way that it is ethical to use organs and tissue from cadavers in transplantation. More so in the same ways that people donate organ for transplantation.

On the case of embryo splitting it will ensure that the other embryos survive and proper examination is carried out through biopsy. In this context more so, certainly no legal rights have been violated and, no moral rights have either.

Recommendation

This work recommends that ban on embryonic stem cell research in some countries should be lifted so that scientists can carry out more advanced research on how best to improve life for humanity.Because it is only when these experiments are allowed can 'ethics' be able to monitor, draw ethical inference on the morality of these practices. Human embryonic stem cell should be encouraged in other to save live and improve healthy living.

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