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by

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The public has not had an equitable distribution of the arguments against using human embryonic cells for stem cell research, whether the stem cells would be obtained from "therapeutic" cloning, or from "spare" embryos. These clones and "spares" are equivalent examples of early embryos. Too many scientists have called for "therapeutic" cloning and for use of the "spare" embryos, without thinking through the several consequences, some of which could be devastating. For example, Humphreys et al. have shown in mice that cloning by nuclear transfer is so inefficient that most clones die.[1] Those that survive often display growth abnormalities. They also examined the embryonic stem cells and found their genome to be "extremely unstable." The question then becomes: does this suggest a similar result in human cloning, and one which could be transferred to patients receiving stem cell therapies? Despite this, the Federation of American Societies for Experimental Biology (FASEB) and the American Association of Anatomists (AAA), two prominent scientific organizations, advocate their use without ever allowing debate or votes by their membership.

A memo of 16 February, 2000 by Robert Yates, then President of AAA, and speaking for the membership, stated that the guidelines for the AAA will "ensure the necessary privacy and dignity of stem cell donors by carefully addressing the ethical issues associated with (stem cell)

research."[2] Yates further stated: "Human embryo donation must be voluntary and not recompensed" and "donated embryos must be frozen." Clearly, this refers to frozen "spare" embryos. The testimony by Mary Hendrix, then President of FASEB, and speaking for all of that membership, before Senator Harkins' committee on 18 July, 2001, clearly endorsed the use of "spare" embryos and therapeutic human embryo clones.[3] First, she stated: "embryonic stem cells of the inner cell mass cannot form a human being, not even when implanted into a woman's womb." Clearly, she is wrong. It is known in human embryology that the inner cell mass divides in the case of identical (monozygotic) twins to produce two or more individuals. Second, she stated: "the ability of adult stem cells to replicate is not as robust as embryonic stem cells." Hendrix cannot know this. The evidence simply is not there at this time for any conclusion such as that. Third, she stated: "The potential of adult stem cells remains only a hope, and that's why federally-funded embryonic stem cell research, which is far more likely to lead to new knowledge and therapies quickly, must be allowed to proceed." Actually, the opposite is true. To date virtually no "therapies" have come from human embryonic stem cells; whereas, there are many reports of promising results from adult stem cell lines. Thus, it is abundantly clear that the AAA and FASEB endorse the use of early embryos for stem cell research, whether it be by creating human embryonic clones, or using "spare" embryos. In subsequent issues of the FASEB News and the AAA Newsletter, there is an endorsement for a ban on reproductive cloning, but total support for therapeutic cloning. In fact, in the June, 2002 issue of FASEB News, the current President, Robert R. Rich, writes an article entitled " 'Therapeutic Cloning' Shows Great Promise".[4] Rich makes an astounding statement: "*The creation of a human being by performing nuclear transplantation and* ***then*** *implanting that clone into a woman's womb is morally wrong .... But in its rush to ban human reproductive cloning, the Senate may also ban the use of nuclear transplantation to produce stem cells and all of its therapeutic and scientific promise*" (emphasis mine). The same identical process is used for both reproductive and therapeutic cloning to produce "blastocycts" (the source for the so-called "stem cells"). Here, Rich admits that ***human beings are created for therapeutic cloning, then to be killed in order to obtain "stem cells".*** Thus, his rationale would squarely fall to ***moral*** relativism of "therapeutic and scientific promise." Not all members of FASEB and AAA agree on the endorsement of their organizations. There is another opinion of the issue. In fact, a dissenting opinion by a member of the AAA, put in the form of a letter to the editor, to the AAA Newsletter last fall, was summarily rejected for publication, via a letter by President John Fallon.

Yates states in his memo concerning the NIH Guidelines, "The unique ability of stem cells to form any cell type makes them an invaluable tool in the treatment of cancer, Parkinson's disease, Alzheimer's, and spinal disorders." This is soundbyte hype. The truth is, no one knows this. It might have merit someday, but presently it is a theory. In fact, the testimony of John Gearhart, stem cell biologist, before the President's Council on Bioethics, clearly records great difficulties in obtaining any useful cell lines from human embryonic cells already in existence. Whereas, Dr. Catherine Verfaille, a specialist in stem cells at the University of Minnesota has isolated special stem cells from the bone marrow of adult humans, which have the potential to differentiate into many different types of body tissues.[5] She has demonstrated this plasticity in her experiments and claims these cells do not seem to form tumors when injected into adults, contrary to human embryonic stem cells which have shown this very disturbing result. Further, a Duke University research team recently reported that fat cells could be reprogrammed to turn into bone or cartilage cells.[6] Clearly, the direction of research should be accelerated toward adult stem cells.

Genomic modulations of the kind cited above in mice resulting in early death and abnormalities are not the only problems associated with using therapeutic clones or "spare" embryonic stem cells. If not used autologously, there is the problem of rejections and subsequent immunosuppressive therapy. Further, little is known about the possibility of carrier viruses, which may be transferred from donor to host.

Advocates for the use of therapeutic clones and "spare" embryos mostly discuss the relevant value of the early embryo. David Baltimore, President of Cal Tech, and Nobel Laureate, wrote in *The Wall Street Journal*, 30 July, 2001, "To me, a tiny mass of cells that has never been in a uterus is hardly a human being - even if it has the potential to become human."[7]

Let's consider an analogy to that: A prisoner in *Schutzhaft* (protective custody), that has no chance of ever becoming free is hardly a human being - even if he exhibits the biological qualities of one. *Schutzhaft* was applied to unwanted persons in the third Reich in the 19302 and 40s. Because those in custody (just as the "spare" embryos and therapeutic clones would be in custody) were decided to be "spare" persons, any liberty could be taken with them. Medical experiments were performed on them, presumably for the benefit of others more worthy (as experiments on the early embryos are so described); but, mostly they were barbaric and cruel beyond comprehension. In fact, there was virtually no application made in a beneficial way towards medical science. Yet, the experiments were performed under the aegis of "therapeutic and scientific promise."

They were also sanctioned under the rubric of the Aryan concept, to which Hitler and his underlings subscribed. This was to be his "culture", the preservation of which "was bound up with the rigid law of necessity." Scientists who advocate destroying human embryos for "medical benefits" to others are in parallel with those who were acting out of "necessity" for their culture.

The refusal by Baltimore (and so many others) to recognize the earliest stages of the human embryo, and to parse the meaning of "human being" is a parallel to the Aryan concept of the Third Reich. The Jews, Slavs, Gypsies, and others (including Germans) were considered to be *Untermenschen*, that is, "sub-human." They were *Lebens unwertenleben*, lives unworthy of life. Unbelieveably, we find another parallel of history amongst the early embryos, 65 years later. These embryos have been devalued via an argument of *reductio ad absurdum*.

Mary Hendrix, as President of FASEB and a member of AAA, said in her testimony before Senator Harkins' committee, "this very early embryo, called the blastocyst is **so small it can fit on the tip of a sewing needle**."[3] Does this mean that small people are less significant, *or less human*, than big people? Not only are human reduced to insignificance by race and ethnicity, but now by size! Notably, Dr. Hendrix has recently been elected to a three year term on the Board of Directors of PRIM&R (Public Responsibility in Medicine and Research).

Every human embryologist world-wide states that the life of the new individual human being begins at fertilization. Thus, obtaining stem cells from "spare" embryos , or a therapeutic clone, kills that human life. However, the liberal mantra has promoted a new *Wetlanschauung* (a conception of life). This was Adolph Hitler's favorite word.[8] Embodied within this word was his concept of racial and ethnic purity, and his mission to purge the unwanted.

Recently, President Bush's Council on Bioethics recorded a 10 to 7 vote in favor of a four year moratorium on therapeutic cloning. A split vote was predictable. At their meetings, the Chairman of the Council, Leon Kass, and member Rebecca Dresser, described the early embryo as "potential" human life.[9] **No** human embryologist has ever described human life as "potential." Nor would they ever do so. In spite of multiple appeals to Leon Kass to appoint a human embryologist to the Council, he refused to do so. Cloning, stem cell research, and all of the issues involving embryos are core issues in human embryology.

What Yates, Baltimore, Hendrix, and Kass, and so many others, have forgotten is that at any point in time, in the existence of a life, there exists a **whole, integrated human life**. This is true at fertilization, before birth, and after birth, until death. This is what is called the *continuum* of life. **Within this *continuum*, over time, the fundamental characteristics of life**

change: size, form, content, function and appearance. We can reduce any point in time to a trivial value by comparing that point to any other reference point one might choose. But, assigning relative values at any time point is simply arbitrary and not scientifically grounded.

President Bush got it right by refusing to destroy innocent human life, or to create life for the purpose of destroying it. President Bush has had no training in human embryology; however, he obviously understands the ***continuum*** of human life. He is able to do this, as most others do, through **common sense**.

The final argument against the biological continuum of human life is clearly stated by John Gearhart, stem cell pioneer from Johns Hopkins,as follows: "The future therapeutic benefit of the human pluripotent stem cell (hPSC), however, must be balanced against a necessary respect for the moral relevance of the human embryo and fetus."[10] I would ask Gearhart: *Whose moral relevance are we talking about?*

I still hear clearly, but swiftly fading in the distance, the words, expressed from Nuremberg: "**Never again**."

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