

Seminar organised by the Group of the European People's Party

**The ethical limits of research - embryo research and cloning - geriatric care**

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The most important issue in the area of embryo research is nowadays the use of embryonic stem cells. These are promising for many purposes, but especially for the production of transplantation tissue. At present a proposal of the European Commission on the joint funding of research involving human embryos and embryonic stem cell lines is under discussion. The fundamental ethical problem here concerns the source of the embryonic stem cells: they can come from

- 1) supernumerary embryos,
- 2) embryos created by somatic cell nuclear transplant, and
- 3) already existing stem cell lines.

**The use of supernumerary human embryos**

Supernumerary embryos are the surplus embryos left over after an IVFET procedure. Removing the stem cells of these embryos implies that they are killed.<sup>1</sup> Because they have no chance of survival anyway, their use in experimental research would be justified. It is moreover often thought that human embryos have a gradually increasing dignity during its development and are consequently increasingly worthy of protection. The therapeutic advantages of their use in experimental research would therefore outweigh the infringement on the respect due to them.

The point is, however, that the embryo does not have a gradually increasing dignity during its development, but an intrinsic value from conception. All parts of its body, even the cerebral structures, often considered as the most specific for the human person, are already virtually present in its DNA. This DNA determines the biological identity of the body, which is essentially part of the human person, from conception until death. Moreover, the embryo develops after conception in a constant way, without any interruption which could be indicated as the moment in which the embryo becomes a human person. Why, then, is the fertilized ovum not a human being - or a human person - who deserves respect as such?

*“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” (Donum vitae I, 1; cfr Evangelium vitae nr. 60).*

If the embryo is a human being, created to the image of God, with the corresponding moral

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<sup>1</sup>This is the central ethical issue, not mentioned however in the Report of the Commission, published 7 April 2003; cf. K. Schauer, “La bioéthique dans l’Union - un sujet délicat,” *Europe Infos* [Mensuel de la Comece et de l’Ocipe] (2003), May, nr. 49, p. 8.

status, it comes under the same norms as those which apply to experiments with test persons in general. That means that in principle directly therapeutic experiments - i.e. experiments with a therapeutic advantage for the embryo involved - are permitted, provided the risks are proportionate to the disease of which the embryo is suffering. At the moment these directly therapeutic experiments are unthinkable. They are, according to actual stage of biotechnology, connected to the creation of embryos by IVFET, which implies in itself an ethical problem. Non-therapeutic experiments and indirectly therapeutic experiments - i.e. experiments without a therapeutic advantage for the embryo involved but only for others - are excluded: as test persons in general may not die as a result of an experiment, embryos may not either:

*“Experimentation on embryos which is not directly therapeutic is illicit. ... In the case of experimentation that is clearly therapeutic, namely, when it is a matter of experimental forms of therapy used for the benefit of the embryo itself in a final attempt to save its life, and in the absence of other reliable forms of therapy, recourse to drugs or procedures not yet fully tested can be licit” (Donum vitae I, 4; cfr Evangelium vitae nr. 63).*

The certainty that the embryo will not survive anyhow does not justify it being used up in an experiment: dying people have no chance of survival, yet one is not allowed to carry out experiments with them just like that. It is moreover not correct to say that supernumerary embryos are killed anyhow. When they are abandoned, one stops their cryopreservation. This implies that one decides not to prolong their lives any more by using non-proportionate means. This is ethically not equivalent to the active termination of their lives: one does not kill them, but lets them die:

Because of their intrinsic value embryos cannot be used as means to an end. Supernumerary embryos may therefore not be killed in order to obtain their stem cells. Experiments in which these embryos are used up cannot therefore qualify for legalization or joint funding.

### **The cloning of human embryos by somatic cell nuclear transplant**

A more interesting source of stem cells will perhaps be in the future an embryo created by nuclear transplantation. In this procedure the nucleus of a somatic cell of a person in need of donor tissue (or organ) is placed in an unfertilized ovum from which the original nucleus has been removed. Thus a genetically identical embryo emerges. The donor tissues - or perhaps in the far future donor organs - originating from its stem cells are also genetically identical and will therefore not cause a graft versus host reaction. This is very attractive because of the lack of donor organs.

Cloning does raise many fundamental ethical objections. It is an asexual way of reproduction, which requires no father and mother; the new human being originates from one individual only. It is therefore not the fruit of love between a father and a mother, but the pure product of a technique (*Donum Vitae* II,B,4,c) or as Kass says an “artefact.”<sup>2</sup> No family is waiting for the child. Every human being has the right to be born in a family. Cloning is an inhumane form of procreation, undermining parenthood, marriage and the family. The person, of whom a clone is made, is not its father or mother, but its twin brother or sister. The parents of the original individual are in a certain sense the parents of the clone too.

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<sup>2</sup>L.R. Kass, “The wisdom of repugnance,” in: *Ethical issues in biotechnology*, R. Sherlock, J.D. Morrey, New York/Oxford: Rowman & Littlefield Publishers, 2002, pp. 565.

There are also other objections: the low success rate of somatic cell nuclear transplant and the frequent anomalies, physical disabilities<sup>3</sup> and early death<sup>4</sup> of animal created by means of this method. Reproductive cloning of humans is therefore generally refuted. One fears moreover that the production of a high number of genetically identical individuals will be a risk for the development of their personal identity. There is, however, support for therapeutic cloning, in which the cloned embryo is destructed by removing its stem cells for further research or for obtaining genetically identical transplant tissue or organs.

The risks of reproductive cloning are avoided in therapeutic cloning. Nevertheless, in contrast with what many people are thinking, therapeutic cloning raises more ethical objections than reproductive cloning. The reason for this is that therapeutic cloning implies the deliberate bringing to life of human embryos with the aim of destructing them for obtaining their stem cells. This is a flagrant violation of the intrinsic dignity of man. However, promising the therapeutic advantages may be, the end does not justify the means: it is not acceptable that the cure of one human being is due to the deliberate killing of another (cf. *Evangelium Vitae* nr. 63). The term 'therapeutic' cloning is - to say the least - euphemistic. For the embryo involved it is no therapy at all. At most one could speak of 'indirect-therapeutic' cloning.<sup>5</sup>

Besides, the use of embryonic stem cells is not without risks: they have turned out to develop into malignant tumours after being transplanted.<sup>6</sup>

### **The use of already existent human embryonic stem cell lines**

A question, too, is whether already existing embryonic stem may be used. The researcher himself, performing therapeutic experiments with them, does then not destruct embryos for obtaining stem cells, because other have already prepared the stem cells. Thought it is not absolutely illicit to profit from things brought about in an objectionable way by others, it is not a morally neutral question. An important aspect is the way in which the producer and the user of the stem cells are cooperating with one another. When both have to make straight appointments with each other about the way in which the stem cells have to be obtained and handled, the user may be quite intensively involved in the production of the stem cells. Even if the cooperation is not very close, the origin of embryonic stem cells is not neutral for the person only using them. The Pontifical Academy for Life refutes the use of embryonic stem cells and the differentiated cells derived from them supplied by other researchers or commercially available in its *Declaration on the production and the scientific and therapeutic use of human embryonic stem cells* (25 August 2000).<sup>7</sup>

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<sup>3</sup>R. Jaenisch, I. Wilmut, "Don't clone humans!," *Science* 291 (2001), p. 2552; I. Wilmut, K. Campbell, C. Tudge, *De tweede schepping. Het schaap Dolly en het tijdperk van de biotechnologie*, Amsterdam/Antwerpen: De Arbeiderspers 2001, pp. 7-8.

<sup>4</sup>"Schaap Dolly is dood," *Trouw* (2003), 15 februari, p. 1; <http://www.planet.nl/discovery> "Gekloonde muizen sterven eerder" (11 February 2002).

<sup>5</sup>See John Paul II, "Allocution to the eighteenth international congress on transplantation," *AAS* 92<sup>II</sup> (2000), nr. 8, p. 626; Pontificia Accademia pro Vita, "Declaration on the production and the scientific and therapeutic use of human embryonic stem cells" (25 August 2000), *L'Osservatore Romano* (2000), 25 August, p. 6.

<sup>6</sup>E. Pronk, "Een wedloop tussen succes en catastrofe. Bioloog Martin Raff gematigd optimistisch over stamcelonderzoek," *Medisch Contact* 57 (2002), nr. 41, 11 October, p. 1481.

<sup>7</sup>Pontificia Accademia pro Vita, "Declaration on the production and the scientific and therapeutic use of human embryonic stem cells," op. cit.

## Alternatives

Besides the fundamental ethical questions, a very important question is whether alternatives exist for the use of embryonic stem cells. The answer is affirmative: alternatives exist and, moreover, they are more promising. The tissues of the bodies of adults (and of foetuses and children as well) contain stem cells too. They are relatively numerous and can easily be isolated and cultured. They are moreover more plastic than one thought in the recent past. Stem cells from the bone marrow, brain tissue and the umbilical cord can bring forth other kinds of tissues than those from which they originate. Stem cells from bone marrow can be stimulated to develop into muscle, skeleton and brain tissue.<sup>8</sup> Stem cells from nervous tissue, possibly useful in the future for the treatment of Parkinson disease, are able to differentiate into blood cells.<sup>9</sup>

In this way, genetically identical transplant tissue is available by using the stem cells of other tissues from the patient himself. The first success has already been shown. In March 2001 a man of 46 years in Düsseldorf had a myocardial infarction by which circa a quarter of his heart muscle was damaged. Six days after stem cells from his own bone marrow were injected into a small artery providing the damaged part of the heart muscle with blood. Ten days later the damaged part showed to be reduced by almost one third and the pump function of the heart had correspondingly improved.<sup>10</sup>

By applying the adult stem cells of patients themselves one avoids the fundamental objections as well as the risks of the use of embryonic stem cells. I would therefore like to conclude by saying that the use of embryos as a source of embryonic stem cells and therapeutic cloning are neither ethical nor necessary.

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<sup>8</sup>E.D. Zanjani, "Hematopoietic stem cells," in: *The stem cell dilemma. For the good of all human beings?*, G. Miranda (red), Boncourt: Guilé Foundation Press, 2001 (acta van het gelijknamige internationale congres aan de Pontificio Ateneo Regina Apostolorum te Rome, 13-14 November 2001), pp. 21-29.

<sup>9</sup>A.L. Vescovi, "Neural stem cells," in: *The stem cell dilemma ...*, op. cit., pp. 37-42

<sup>10</sup>N. Scolding, "The body's seeds of construction," *The Tablet* (2001), 15 September, p. 1288.