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## **BIOETHICS DISCUSSION GROUP**

**Meeting of Friday, 25 August 2000**

### **DISCUSSIONS ON THE USE OF HUMAN STEM CELLS AND THERAPEUTIC CLONING**

The issues surrounding the use of human stem cells and therapeutic cloning are currently arousing strong interest amongst the scientific community; they raise a number of ethical concerns, especially in the Catholic Church.

As it is currently used, the scientific term “stem cell” refers in fact to cells of very different types: pluripotent or already differentiated cells, cells at various successive stages of life, from the first days of embryonic development up to the stages as a child or adult.

The concept of the stem cell alone is therefore not relevant to an ethical discussion. The ethical questions raised differ according to the stage of life at which the cells are taken, the circumstances of their removal and the type of use.

Embryonic stem cells are considered to be pluripotent, i.e. they can become very different types of cells (cardiac cells, blood cells, nerve cells, etc.); they can therefore be used in the treatment of many diseases, and this is why they are of such interest. It nevertheless seems that adult stem cells that are already differentiated could also be used for the same purpose and therefore merit attention.

One of the main questions raised concerning embryonic stem cells is how they are obtained. The collection and subsequent use of tissue creates a delicate problem: these cells can only be obtained by the in-vitro culture of embryos from which the said cells are removed. This process therefore excludes any transfer of the embryo for the purpose of procreation and ensures that this option is definitively blocked. The embryo is therefore “instrumentalised” and treated purely as a laboratory material that is simply used and then disposed of.

Such a reduction of a human embryo to the status of pure instrument comes up against serious ethical objections. Although it is the source of several enigmas of a philosophical nature, the embryonic stage is nevertheless the beginning of human life. It is not up to mankind to establish the thresholds of humanity...a thing on this side, human on the other side, or conversely at the other end of life!

No doubt scientists will claim that it is possible to reduce the number of embryos used: the extended development of cell cultures would make it possible to create veritable cell banks, avoiding resorting to new embryos. It is nevertheless true that the initial cells would have been obtained by instrumentalisation starting with a number of embryos.

Others claim that it would be possible to avoid the creation of embryos by using ovocytes to reprogram the somatic cells of children or adults. The term embryo is then only avoided through the ambiguity of the terminology: such a practice would effectively involve creating real embryos by cloning. It is for this very reason that this technique is currently referred to as therapeutic cloning.

Proponents also forcefully advance the argument that the collection of embryonic stem cells opens up truly revolutionary avenues of research and treatment. They see it as a means to develop different cell strains that could be used in cell therapy to treat particularly serious degenerative diseases, such as degenerative neurological diseases or cells that cause the degeneration of the cardiac tissue.

Such an end is clearly laudable, even though we should not raise hopes too high. But the argument calls for a few comments: firstly, scientific and medical use does not necessarily justify any behaviour, if it strays from respect of humanity in its most vulnerable forms. Secondly, simply invoking the service of humanity remains debatable: not only, as we would like to stress, because the use of embryonic stem cells would allow very debatable actions, but also it could lead to the scientific community becoming blinkered on a certain research path without looking at other avenues that raise no objections of an ethical nature and could be beneficial to medicine.

It would be particularly regrettable not to try to advance our knowledge of the properties of adult stem cells and of the possible recognition of their use for the purpose of cell therapy.

## **NB**

In this context, useful reference may be made to the following documents:

- **“Evangelium vitae”**, Encyclical by Pope John-Paul II (1995)
- **“The legal and ethical aspects of the human genome project”**, an address by Pope John-Paul II to a working group at the Pontifical Academy of Sciences on 20 November 1993
- **“The declaration of the Pontifical Academy for Life on the production and the scientific and therapeutic use of human embryonic stem cells”** on 24 August 2000