

# Personalistic Bioethics: The Dignity of the Human Embryo from the Moment of Fertilization

This article is a revision of a public lecture hosted by this Institute on 1 December 2006.

Etsuko Akiba

## At the Root of the European Argument Relating to Human Life

**T**ODAY I would like to provide a brief explanation of “The Catholic Bioethics Regarding the Scientific Use of Human Embryos.”

As was just explained in the kind introduction I received (from the Director of the Institute of Oriental Philosophy), I had the good fortune of being able to publish a volume entitled “*The Bioethics of the Catholic Church and the Pontifical Academy for Life: The Dignity of the Human Embryo*” (Chisen Shokan) in December of 2005, which included both translations and an introduction to the key issues. There were a number of reasons why this publication is particularly meaningful at this time. While, currently in Japan, regulations regarding cloning technology prohibiting the cloning of human beings for the purpose of reproduction have been enacted, policies promoting experiments on early human embryos have been developed. However, when we reflect on the international situation, it becomes apparent that many countries have adopted a policy different from ours. I published the book because the Catholic Church has been exerting a significant influence on the international scene regarding bioethics.

Though my own research area is criminal law, I inevitably encounter ethical issues when investigating issues related to human life, like as euthanasia, abortion, brain death and organ transplantation from a legal perspective. As I investigate the ethical issues in greater detail, I am prompted to notice that at the very root of these issues is Catholic ethics, since the present Japanese Criminal Code, which was established in 1907, is modeled after Prussian Criminal Code. While the origins of European ethics can be traced back to the Greek and Roman philosophy that preceded Christianity, certainly that which provides the systematic foundation for contemporary European ethics is Catholic ethics. Thus,

when we investigate the arguments being put forth in Europe, what we inevitably encounter is traditional Catholic ethics. The university where I did my studies is a Catholic institution, and which has a great deal of literature on these issues. As I began to review that literature thoroughly and in detail, I found myself immersed in the issues and before I knew it bioethics had become my area of specialization. For the past two years, I have been allowed to participate in the annual assembly of the Pontifical Academy for Life as a corresponding member. It became apparent to me that the official position of the Catholic bioethics relating to the human embryo was not being accurately informed in Japan. This too became one of the motivating factors in the publishing of my book.

Therefore, I speak to you today not as a scholar of criminal law, but as someone wishing to explain with some clarity the most important aspects of the official Catholic bioethics.

Today's title of my talk is "The Catholic Bioethics Regarding the Scientific Use of Early Human Embryos"—this "Catholic Bioethics" can be rephrased as "Personalistic Bioethics." And the subtitle is "The Protection of the Fundamental Rights and Dignity of the Human Embryo from the Beginning." This is an extremely clear assertion of Catholic bioethics. I would like to address these issues in the following order.

First I would like to speak about the current state of affairs in Japan, as well as the international situation. Next I would like to explain the standing position of Catholic bioethics. Lastly, I would like to speculate about what roles should be played by religious people. Since the Catholic Church is also making various appeals regarding these issues to all the religious people, I would like to conclude with the message from the Catholic Church.

### **Japan: Human Cloning is Permitted for Scientific Research Purposes**

Let me begin with discussing the regulations related to embryonic research in Japan. First of all, these regulations are addressed to "cloning for reproductive purposes." That is, the research that seeks to produce a cloned human being. If a cloned human embryo, that is, the very beginning of a cloned human being, were produced and transferred into a woman's uterus, a cloned baby would be born. This, however, is "prohibited" under the "Law concerning regulation of human cloning and other similar techniques" (hereinafter "the Human Cloning Regulation Law") as stated above. If a violation occurs, the punishment is severe; it may be up to ten years of imprisonment, and/or a fine of up to

10 million Japanese yen.

Secondly, there is the matter of the “Use (Destruction) of Surplus Embryos up to the 14th day after fertilization” for the purpose of producing embryonic stem cells (ES Cells). This practice is permitted.

What is being referred to here? I imagine that you have heard of ES cells. ES cells are obtained when some cells are removed from a part of a human embryo at around 5–6 days post-fertilization and then cultivated. They are also referred to as master cells or pluripotent cells, and are used to obtain cells for various tissues and organs of the body, such as the heart and nervous system. Surplus embryos are those embryos left over and then frozen after having been fertilized in vitro for the assisted reproductive technology. The Human Cloning Regulation Law does not prohibit the use of these surplus embryos to obtain ES cells.

Is it acceptable to destroy the human embryo in order to produce an ES cell? Some time was needed before this could be approved in Japan. First of all, in 1997, the Council of Science and Technology for the Promotion of Biotechnology was established as an advisory body to the prime minister, which appointed a Bioethics Committee. In 1999, the Committee published a report on cloning and, based on the report, the “Human Cloning Regulation Law” was then established. On the other hand, the Bioethics Committee published the other report in 2000 that approved of the production of ES cells. Shortly afterward, Professor Norio Nakatsuji of Kyoto University succeeded in producing ES cells from surplus human embryos.

Thirdly, there is the issue of producing human cloned embryos for the purpose of obtaining ES cells. This is referred to as “cloning for scientific research purposes (research cloning),” and I believe it is important for us to be careful not to confuse this with “cloning for reproductive purposes (reproductive cloning),” which was the first category I mentioned.

In the case of research cloning, initially the same method is used as for reproductive cloning. First a cloned embryo is produced, but in this case not transferred to the uterus. Then the embryo is developed to the fifth or sixth day, and one portion (the inner cell mass) is extracted. From there the ES cell is produced. With this method, it is possible to produce cells that are superior to those made from surplus embryos. In what way are these cells superior? For example, imagine that I have problems with my heart. If doctors wanted to reproduce a blood vessel of my heart from ES cells, a vessel with far fewer adverse reactions would be produced when he used as raw material a cloned embryo derived from my own somatic cells rather than a surplus embryo origi-

nated from the other persons.

In July of 2004, the final report of the Council of Science and Technology for the Promotion of Biotechnology was issued and approval was given for research cloning. Furthermore, in July of this year (2006) the Ministry of Education, Culture, Sports, Science and Technology appointed an ad hoc committee and began preparing concrete guidelines for research cloning. That "Interim Report" is now completed and preparation for implementation is currently underway. However, in August, it was reported in the newspaper that Professor Nakatsuji would not intend to become involved with this research. Later I will return to this issue and provide further explanation.

For the preparation of human ES cells, it is only permitted to use surplus embryos up until the 14th day. These are the embryos that are produced for assisted reproductive technologies and left over after the treatment. Presently in Japan, it is reported that approximately 5,000 frozen embryos are no longer needed for the reproduction and are being disposed of because they have exceeded their storage life. However, whenever possible, there is the desire to use embryos in good condition as opposed to surplus embryos and fresh embryos as opposed to frozen ones. The question that arises then is: for scientific research, is it acceptable to produce human embryos *in vitro* and then destroy them? The report that came out this July also grants permission for this.

Thus, the current policy in Japan is that "it is not permissible to produce cloned babies," but, "it is acceptable to use embryos as experimental material up to the 14th day, whether they be embryos fertilized *in vitro* or cloned embryos." While I'd like to say clearly that my goal here today is not to critique the current policy in Japan, it is important to say that the current situation does bear within it a number of contradictions.

The first problem is that there is in fact no agreement among scholars of criminal law as to why human reproductive cloning is illegal and why such heavy penalties are imposed. There is certainly a great deal of dispute. While it seems to be obvious to everyone why generating cloned offspring is not permitted, we must acknowledge the fact that it is permissible to produce and freely dispose of cloned embryos. In light of this, it is logically inconsistent to impose such severe punishments only when cloned offspring are generated.

The first article of the Human Cloning Regulation Law offers the protect of the "dignity of the person" as one of its purposes. Here the wording is the "dignity of the person"—not the "dignity of the human being." This law is the first established within the Japanese legal system the expression the "dignity of the person," and the main point of my talk

today could also be thought of as clarify what the “dignity of the person” actually means.

According to the report issued by the Bioethics Committee, which served as the foundation of the Human Cloning Regulation Law, the meaning of “person” in the expression the “dignity of the person” is understood simply as the “person after birth.” Therefore, according to this report, a “person” does not exist from that point in time when a cloned embryo was produced. What then is the “dignity of the person after birth,” which is being protected by the Law? It has been explained as the “dignity of the person copied.” For example, if I cloned myself, that would mean that my dignity would be violated. Why is that? It is because the making of a copy of myself is the making of a copy of me, who is the only person in possession of my identity. Therefore it is an infringement on my identity. However, this argument has been criticized by many bioethicists. Even though people have the same genes, they do not necessarily have the same identity or personality and, as a result, there has been no violation of the rights and dignity of the person copied. This argument has been viewed as unsound by many.

Another form of criticism is also heard. It is that, though a human clone must not be produced for the purpose of reproduction, one must also take into account matters of individual freedom, autonomy, and reproductive rights. Nowadays progress has been made in the treatment of infertility and various methods based on this progress are available for producing a child. Then, why those unable to conceive through the usual means cannot produce their child through cloning? In the U.S., the right of homosexual couples to marry is recognized. And this is not only the case in the U.S. but also in Europe, in such liberal nations as the Netherlands. In view of this situation, some have questioned why such couples could not produce a child through cloning. This argument may seem unreasonable to some when put forth from the position of the “right to reproduce a child.”

By contrast, to show our conclusion beforehand, we could say that anyone has the “right to be born by parents” when we consider the rights or the dignity of the cloned child. This is the position of the Catholic Church. Also a famous philosopher Hans Jonas has written that human cloning is part of the eugenics project and is the most slavish form of genetic manipulation. We ourselves are generated by the gametes of our father and mother, but our growth is controlled by our own genes. In the case of the cloned baby, the genes are programmed from the start by a third party and given to him or her. That is, from the very beginning, a child is born as a result of the genetic manipulation

having been done on it. There is no other person who has been born in this manner. While we do not fully understand the mechanism that allows us to inherit certain genes from our father or mother, we might think that, in a sense, we ourselves chose autonomously to be born. At least, it was not the result of a choice made arbitrarily by a third party. However, from the onset, a cloned baby is born as a result of having had its genes imposed upon it by some other person. Hans Jonas asserts that originally we all possess the right to be born freely by our fathers and mothers. Moreover he states that the human cloning project belongs from its inception to the field of eugenics, in which certain genes are imposed upon people.

If we reflect on the rights of a cloned human being, we would reach the conclusion that both cloning for research purposes and reproductive purposes should be prohibited. In the case of research cloning, the cloned human embryo that was produced is then killed in order to do the research. It must be considered more inhumane than reproductive cloning.

In Japan, policies have been put in place that promote research cloning. Yet, if we consider the issue from the position stated above, "prohibiting only reproductive cloning" would not be a consistent and coherent policy. If we consider the rights and dignity of the baby who is born as a clone, we would have to conclude that, "research cloning must also be prohibited."

The current state of affairs in Japan is one in which policies containing this contradiction continue to be promoted. Let me illustrate what I have just explained.

As I explained previously, the Bioethics Committee appointed by the Council of Science and Technology for the Promotion of Biotechnology was established as an advisory body to the prime minister and is currently part of the Cabinet Office. In July of 2004, it issued a report, according to which an early embryo up to the 14th day is not considered a "person." However, unlike some type of human cell, it is thought of as "a bud of human life" and as an existence especially worthy of respect. The "bud of human life" is a new way of referring to the human embryo.

In short, an early embryo is not a "person." Both ethically and legally, it is neither a "person" nor a "thing." One interpretation has attributed to it the position of an "intermediary form between a person and a thing." Japanese law developed in succession to Continental law, which grew out of Roman law, and in Continental law a dichotomy is utilized that separates persons from things. While there certainly are people who would question whether a pet should be considered a "thing," within the

law a pet is treated as a thing. While some may feel that is not good, the fact of the matter is that only human beings have dignity and rights, and they also have responsibility, duty and even tax liabilities. Under Continental law, a dichotomy exists between “persons” and “things,” and this has gone unchanged from the time of Roman law. Therefore, with this issue of early stage embryos, we see that something, which in a sense destroys this dichotomy has been produced.

Actually, this is not the first time that an argument of this sort has emerged. I believe that all of you will recall the great ethical arguments that surrounded the issue of organ transplantations from those who are brain dead. There were heated arguments about whether brain death constituted the death of the person, and, at that time, there were people who put forth the same argument being heard now. Professor Koichi Bai, the noted scholar of medical law, has stated that we should create an “alpha period,” and that brain death is this alpha period in which the person is neither living nor dead. Once the person has completely died, the body becomes a corpse and is then treated as an “object.” When living, the body is a “person.” However, brain death is an intermediary form between that of a person and an object. Even today in Japan we remain in a state in which a social consensus has not yet been reached about whether brain death constitutes the death of the person. Thus, the alpha period theory did bring together a large number of supporters. Nevertheless, after a time, Professor Bai withdrew his own backing of the theory.

Why then did he withdraw his backing? Once we consider the situation carefully, we can see that all the alpha period theory does is set up one more boundary line. With that, it establishes a gray zone and this only further complicates the argument. After all brain death should only be treated as either life or death, and so Professor Bai withdrew his alpha period theory. As a result, an intermediary form between that of person and an object, a third category was not established in that case. However, the law for this case did establish a third category. If the third category were established, there would certainly be a push to reexamine the entire system of Japanese law, including the civil code and criminal code. Therefore, hereafter, we can expect a great deal of confusion in our law on various fronts.

### **United Nations: “Blanket Ban on Human Cloning” Even for Research Purposes**

What is the state of affairs at the international level? That which kicked

off the current dispute was a report on the 1997 birth in Scotland on Dolly, the “Cloned Sheep.” The European Parliament quickly issued a resolution that all human cloning, regardless of its purpose, was prohibited. Yet, in 1998, just the following year, the issue of ES cells emerged again, and as it became publicly talked that “when ES cells could be produced from one’s own cloned embryo, it might be possible to produce ES cells with little likelihood of rejection to him or her,” the arguments against human cloning toned down. In 1998, Council of Europe issued an additional protocol to the Convention on Human Rights and Biomedicine, and in it reproductive cloning was the only type prohibited. That is to say, what we see here is a desire to open up a path for producing ES cells. After this, the world has been divided on this issue.

Meanwhile, *Declaration on Human Cloning* was issued by the United Nations in March of 2005. This *Declaration* announced a blanket ban on human cloning, including research cloning. This conclusion was reached after much complications. The U.N. deliberations on human cloning began in 2001. Germany and France took the initiative, and the initial deliberations focused on establishing a Convention for banning only reproductive cloning. However, the appeal that “both types of human cloning should be banned” emerged, the Catholic Church might take the initiative in this appeal, which further complicated the deliberations. The U.N. sessions were extended many times over, but could not complete a Convention. At last, “*Declaration*” was issued. Though it does not have binding power, it calls for a complete ban on human cloning.

Italy and Germany voted in favor of the *U.N. Declaration*, and from the beginning they took a conservative stance. The U.S. also provided support. According to Japanese newspaper, Pope John Paul II and President Bush held talks about this problem. Such talks might have been prompted by the Bush Administration with its conservative Christian bent.

Britain, which voted in opposition, was the country that produced Dolly, the cloned sheep. As the country with the most advanced technology on human embryonic research, the reasons for its opposition should be clear. France also voted in opposition. Unlike Germany, France was victorious in the WWII. As I will explain later, this historical fact resulted in the tendency that the French do not reject the eugenics as earnestly as the German do. Japan took a stance that supported the advancement of experimental research and of course voted in opposition. South Korea took the same position as Japan.

However, by an overwhelming majority, the *Declaration* that banned all types of human cloning was adopted (84 in support, 34 in opposition,



37 abstaining).

Let me briefly show the situation in the United States. In fact, “human dignity” is not a familiar concept to Americans. Western law can be roughly divided into Anglo-American law and Continental law. The system of law in the European continental countries and one in Britain and U.S are completely different. Incidentally, the Japanese system of law was established during the Meiji era and was modeled after the German or French system of law. However, after WWII, aspects of the U.S. system of law were incorporated, making for a Japanese system of law that had a mixture of influences. Nonetheless, the Japanese system of law has its foundation in the system of Continental Law. And human dignity is the highest principle in the Continental Law.

By contrast, the most important principles in the U.S. law are “individual freedom” and the “individual pursuit of happiness.” These are taken to be something very close to absolute principles. Conversely, in Europe these principles are not given a great deal of weight, and, as a result, we can see here a fundamental difference between the two. The concept of the “individual” employed in this case is that of an individual who bears consciousness and is capable of making decisions by him or herself. When such an individual is viewed as an absolute, prohibiting human cloning becomes difficult. The unborn cloned embryo could not be referred to as an “individual” and thus there should be no need to protect his or her rights. Moreover, ideas that would restrict the pursuit of happiness and individual freedom, that might, for example, restrict the advancement of scientific research or the reproduction of one’s own cloned child, rarely emerge. Therefore, while in the U.S., National Bioethics Advisory Commission (NBAC) was set up and issued reports, in the end good grounds for prohibiting reproductive human cloning could not be found. The report of NBAC was the source of a great deal of concern and the word “prohibit” could not be clearly stated. Nonetheless, the U.S. came around to supporting the *U.N. Declaration*.

From early on, Germany took the position of protecting the rights of the human embryo, and in 1990 it established the Human Embryo Protection Law, which upheld the “human rights of the human embryo.”

In Italy, the Medically Assisted Procreation Law was established in 2004 which also protected the rights of the human embryo from the earliest stages. The Italian law is quite strict as follows. First, it is very hard on the woman to extract ova one by one time and time again for the reproductive practice. Therefore through the process of the ovarian stimulation, which allows the extraction of ten ova or as at one time, rather than the natural one ovum per month. All ova are then fertilized in vitro

with the aim of obtaining as many embryos as possible. The most efficient practice to cause pregnancy is said to be the transfer of approximately three fertilized ova to the uterus and keep the rest frozen. However, this practice results surplus embryos. These surplus embryos are also human beings and thus their human rights should be protected. Therefore the new Italian law seeks to avoid producing surplus embryos as much as possible. The German law also has done this. From the start, Italian law says that only embryos for one-time implantation should be produced.

Criticisms have also been launched against this approach. They state that if assisted reproductive techniques are conducted in accordance with this law, effective infertility treatments will no longer be possible. They claim the “rights of child-bearing.” In spite of that, when we consider protecting the “human rights of the unborn child from the beginning,” we cannot help but provide some regulations for that. Thus, not in only Italy, but in many European countries, such regulations have recently been introduced into the physician’s deontological code.

To sum up, in Europe, in favor of the rights of the child, people see that there is no way to a surrogate mother nor gametes donors. Furthermore a great deal of thought is going into methods that will not produce surplus embryos which could be used for experimental purposes. In Japan, there has been the tendency to permit not only the use of the surplus embryos, but also the intentional production of embryos by means of in vitro fertilization for the experimental use. It seems to me that we would do well to take note of how much Japanese approach contrasts with that of European nations.

### **The Catholic Church: “Human Dignity Extends to the Human Embryo”**

Thus far we have worked to understand roughly the overall situation in the world. Now I would like to move to the Catholic perspective. The Catholic Church has adopted the stance that every person is endowed with dignity from conception and that his or her human rights are to be recognized. It has supported the “dignity and human rights of the early stage embryo,” and put this forth repeatedly as its public stance since over 30 years ago.

In 1974, the Congregation for the Doctrine of Faith issued the *Declaration on Procured Abortion*. This *Declaration* clearly states that the life of a new human being is begun from the time that the ovum is fertilized, and that his or her dignity and rights must be recognized from that time.

In 1987, the same Congregation issued a statement entitled *Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation* (“Donum Vitae”). Why was this document issued in 1987? In 1978, Louise Brown, the world’s first baby conceived through in vitro fertilization, was born in England. Many of you may recall the expression “test-tube baby,” which was used at that time. This may have been very good news for those people concerned about infertility, but the Catholic Church discerned the dangerous aspects to this procedure.

What then is dangerous about this procedure? Normally an embryo can not exist outside of the mother’s body. It is generated within the body of a mother and is not supposed to come out of the womb prior to birth. What is viewed as dangerous then is the fact that the beginning of life takes place in vitro. In a word, it is not protected by the body of a mother. Anyone can easily approach it. It can be thrown away. It can be used for some experiments. There are many ways in which it can be violated or interfered with. Furthermore, through the process of ovarian stimulation, a large number of embryos can be produced at one time. It has been noted that in vitro fertilization could lead to producing a large number of human beings who are not protected by the mother’s body and who could be exposed to a variety of threats and dangers. It was therefore after expecting the possibility of future dangers, some of which have already transpired, that this document was issued as a warning in 1987. One of the expected dangers, which has become a reality, grows out of the simple fact that a large number of surplus embryos are frozen. That is, this situation means that many human beings in early stages who are destined for the death before birth are frozen and stored in a refrigerator somewhere. It may be something of an exaggeration to express the situation in this way, but what one might say that what is occurring here is a large-scale infringement upon human rights. Thus came the warning of 1987, which asserts that we must respect “human life at its origin.”

Another assertion is that of the “dignity of human procreation.” In Catholic bioethics, this is a common expression, but I imagine there are people here who are hearing it for the first time. The procreation of human beings is different from the reproduction of animals. We see the other dimension on human generation. Human beings are born from their parents as the fruit of their love. While human generation is also possible without the presence of a husband and wife when we obtain a sperm and ovum and resort to the reproductive technology, there is certainly no one who would want to be born in that way. We wish to be born as the fruit of our parents’ love. It was “Donum Vitae” of 1987 that

emphasized this dimension of being and warned against its disregard.

The point is that even at the time of “Donum Vitae” the assertion that “the embryo is a person from the time of fertilization” had already been made. In 1995, Pope John Paul II issued an encyclical letter entitled “*Evangelium Vitae (The Gospel of Life)*.” An encyclical letter is a letter from the Pope addressed directly to the believers. Pope John Paul II issued this letter, not only to the followers of the Catholic faith, but to “all people of good will who are concerned for the good of every man and woman and for the destiny of the whole of society.” Pope John Paul II points out in this letter that now a “culture of death” is prevailing. He states that whether we look at the problem of euthanasia, the problem of brain death and organ transplantation, or the issues related to the experiments that destroy surplus human embryos, we see the prevalence of a “culture of death.” The fact that there is a high rate of suicide and abortion in Japan may also be seen as a sign of this “culture of death.” John Paul II issued this encyclical letter, putting forth the position that we are in a state of crisis in which we must establish a new “culture of life.” This encyclical letter which is rather long includes proposals based on the newest data from the life sciences.

In 1994, the year prior to issuing this encyclical letter, Pope John Paul II established the Pontifical Academy for Life in order to construct a new “culture of life.” The Catholic Church had already established the Pontifical Academy of Science in 1603. Around half of the members of this Academy are winners of the Nobel Prize. Authorities in the natural sciences being invited to the Academy engage in open and free discussions. The Academy does not force any particular conclusion on the discussion, but encourages the scholars to discuss freely. Consequently the Academy is able to collect the most recent scientific data and tries to find the correct way based on scientific truth.

Pope John Paul II established the new Academy for Life in 1994 so that it might deal with the new situations in which the lives of people are being interfered with by developments in science and technology. More than half of the members of the Academy are medical professionals such as human geneticists, obstetricians and gynecologists. In general, the others are specialists in theology and ethics, and few legal scholars like myself. Not a few aspects of the arguments among the specialists in the natural sciences are hard for me to understand. The newest data from biology also is reported on. This fact shows that the fundamental task for the Academy is to consider what is ethically and legally correct based on an accurate assessment of the scientific facts.

In 1997, the Academy for Life issued a paper entitled “*Reflections on*

*Cloning.*” This paper came out directly after Dolly, the cloned sheep, was born. An eminently clear explanation is given as to why human cloning cannot be permitted. The reason is to be found in the violation of the human rights of the clone produced through cloning technology. All people have the right to be generated by two parents of the opposite sex and the right to have a family, as well as relatives. For example, Dolly is the twin younger sister of her mother, and she has no biological father. However, her maternal grandfather holds the same position as her father would. In short, her relationship with family members and relatives is completely distorted. Offspring produced through cloning have no parents from the very start and they have no relatives on the paternal side. Under such conditions, is it possible for a child’s personality to develop properly? A human being is surrounded by relatives and family members, and he or she has the right to be born and raise in such an environment. “*Reflections on Cloning*” provides a clear analysis and concludes that human cloning is wrong because it infringes upon that right of the clone. This *Reflections* is divided into three parts. The first is the scientific and biological reflections on cloning technology. The second is an ethical reflection based on the scientific facts, and the third is the legal reflection based on the scientific and ethical reflections.

In 2000, the Pontifical Academy for Life issued the “*Declaration on the Production and the Scientific and Therapeutic Use of Human Embryonic Stem Cells.*” In those days a vigorous discussion was underway in the world as to the “biological beginning of a human life”. Was it at the time of fertilization or from the 14th day? In Britain, experimental research on the human embryo obtained through in vitro fertilization up to the 14th day after fertilization was permitted for the first time in the world. In light of this, the Academy for Life began to place its greatest efforts into clarifying the mechanism that initiates the biological beginning of a human life. It began to collect the most recent scientific data, and, after investigating and analyzing it in detail, sought to interpret it in manner that could be more easily understood by the general population. It was the reading of this *Declaration* that prompted me to begin my own study on the “dignity of the human embryo.” Though I thought the argument on the “biological beginning of human life” should inevitably be based on the ethical consideration of human embryonic research, in Japan, that argument was nowhere to be seen. This *Declaration* offered clear scientific data amidst the entangled public debate that was taking place at that time. In publishing this book (*The Bioethics of the Catholic Church and the Pontifical Academy for Life*), my hope, above all else, was to assist the Japanese people in understanding the most recent sci-

entific truth regarding this issue.

The paper entitled “*The Prohibition of Cloning Within International Debate*” issued by the Academy for Life in 2003 also discussed the scientific, ethical, and legal aspects of the issue in that order, and it was issued at the very same time that the United Nations deliberations were underway. The Academy intended to send a clear message to those participating in the U.N. deliberations.

Furthermore, in 2004, the Vatican Secretary of State built upon the argument set forth in the Academy’s paper and issued a document regarding the U.N.’s international deliberations on prohibiting human cloning. This was a position paper expressing the official position of the Catholic Church in response to the U.N.

In addition, the theme of the annual assembly of the Pontifical Academy for Life held in February of this year, 2006, was “The Human Embryo in Its Pre-Implantation Phase: Scientific Aspects and Bioethical Considerations.” In the previous year the prohibition declaration on human cloning had been issued at the United Nations. The Academy might choose this theme for the annual assembly to send a message to the countries that were still intending to promote experiments on human embryos. In the conclusion of the Assembly, scientific observations were offered based on the most recent data, along with ethical and legal considerations based on that data. In short, what was offered here was an update of the information provided in the previous documents. I hope that you understand the Catholic Church has been devoted to the protection of the dignity and the rights of the human embryo.

Now I have showed you many Catholic documents, but, as we can see, the Catholic bioethics offers a very simple message. 1) First of all, the scientific truth should be accurately understood, which leads to the fact that “human life begins at the moment of fertilization.” This is not simply a position that is being asserted by the Catholic Church, but the biological and embryological data examined objectively. What the Catholic Church has done is simply confirm and accept the accuracy of this data.

Over and above that, 2) the Catholic bioethics is seeking to protect the principle of international law and bioethics. That is to say that the Catholic Church is seeking to review the scientific and biological facts and, based on those, trying to reflect on the ethical and legal implications of those facts. The vital point to the latter is that “for all people without exception, the fundamental human rights and human dignity should be recognized.” This is supreme principle of international law and bioethics after WWII.

In light of this, the conclusion that “human rights and human dignity should be protected from the moment of fertilization” will be led from points 1) and 2). Therefore, Catholic bioethics or the personalistic bioethics just recognize in a sense the commonly accepted scientific facts of today and, based on that, promote the international principle of law and ethics. We could also say that this position is simply a reconfirmation of an established position. However, this does reflect the Catholic view on the matter.

The problem here is that in Japan the concept of “human dignity” is very confused. It overlaps and is mixed up with various other concepts, such as the “respect for human individuals” and “respect for life.” Consequently it is difficult to understand what it means in concrete terms. Earlier I mentioned that the Human Cloning Regulation Law introduced the expression of “the dignity of the person.” However, even then, the expression used quite purposefully was “the dignity of the person,” and not “human dignity.” The usage that was employed recognized only the dignity of the “person” after being born. The current state seems to be one in which the concept of human dignity is very much in flux. This results in a variety of problems and a range of arguments. The concept of “human dignity” in international law is grounded in a perspective that sees all human beings as members of the human family, being equal in dignity and rights, and of existential value. The mere fact of being in the presence of a human being necessitates that it be shown the full respect of its dignity. Human dignity is not dependent on a person’s ability or status; it is inherent to his or her own existence, in and of itself. This is the Catholic position and is also the position adopted within post-war international law.

In the explanation that follows, I would like to look at this issue in detail.

### **Scientific Truth: A Human Embryo is a Human Being from the Moment of Fertilization**

Thus far we have seen that the Catholic stance is to “acknowledge the scientific facts and promote the principles of international law and bioethics.” Regarding this, Pope John Paul II offered the following description in his *“The Gospel of Life.”* “From the time that the ovum is fertilized a life is begun which ... is the life of a new human being with his own growth. This has always been clear, and ... modern genetic science offers clear confirmation. It has demonstrated that from the first instant there is established the programme of what this living being will

be: a person, this individual person with his characteristic aspects already well determined” (n° 60). That is, the fact that a person’s life begins at the time of fertilization is not something that Pope John Paul II decided, nor is it simply a theological doctrine or an ethical interpretation. It is the position taken from modern genetic science. Therefore, if we were to word this differently, we could say that if modern genetics had asserted that “the human life does not begin at the time of fertilization,” then the position of the Pope would also be different. This goes without saying. What we must acknowledge here is that the Pope is honestly incorporating the scientific truth into his position.

But the following sentences placed in the same paragraph of the “*Gospel of Life*” are directed toward ethical considerations, being not able to be proven based on the empirical sciences.

The human being is a “totality and unity as body and spirit,” an integration of these two, and thus in an early stage embryo, in which a new existence begins physically, it is thought that the spiritual soul is already present. Consequently, “the human being is to be respected and treated as a person from the moment of conception; and therefore from the same moment his rights as a person must be recognized.”

What is the spiritual soul? In Christian thought, the spirit is present within the living person. The body and spirit are not separated in him or her. They do not exist separately; both exist together. The reason why the human being is ethically treated as a person and is legally endowed with human rights is because of the presence of the spiritual soul within the human being. This is part of Catholic thought, and there may be aspects of it that is difficult to be explained rationally. Anyway, in Catholic Thought, since the body and spirit cannot be separated in a living human being, there is no possibility of respecting only the spirit and not the body. Yet, what substantially characterizes the human being making him or her a human being is the spiritual soul. In summary, the human being is granted on respect for his or her spirituality and not materiality. And the spirit comes into existence, at the same time as the physical body comes into existence. That is the thinking in Catholic theology.

Now I try to give details of the “biological facts” firstly and afterwards the principle of ethics. The human life begins at the moment of fertilization. While I am not a biologist, I would like to offer a simple explanation of the standing position taken by Prof. Angelo Serra, Professor Emeritus of the Faculty of Medicine at the Catholic University of Sacred Heart in Rome, an honorary member of the Academy for Life, and a world famous authority on human genetics [cf. Angelo Serra *L’embrione umano: Uomo e prezioso strumento tecnologico?*, *Atti dei*



Convegno Celebrativo dei 50 anni di vita della Sezione “Il Medico e la Sfide del Terzo Millennio”, Foggia, 2003, pp. 41–71; Japanese translation is: Akiba, “The Human Embryo: A Human Being or a Precious Instrument of Technology?” *Bioethics of the Catholic Church and the Pontifical Academy for Life*, pp. 51–87]. When the spermatozoon penetrates the zona pellucida of the oocyte, the fusion of the spermatozoon and the oocyte takes place. Immediately after this, one can observe a sudden change of the ionic composition in the fertilized ovum. This change is mainly due to a transient increase of intracellular calcium concentration that, under the action of oscilline, a newly discovered paternal protein, rapidly spread like a wave (“calcium wave”) all around the fertilized ovum, signaling its activation and the fact that the embryonic development is at its inception. Owing to advancements in molecular biology, this activity has been caught under a microscope. Now embryologists and molecular biologists are able to see through a microscope these spreading waves of calcium and they clearly acknowledge that the activity of a new life has begun.

The new cell or fertilized ovum in which the oocyte and spermatozoon are fused is the zygote. It has very peculiar properties of its own that are dependent on the genome or genomic information of its own. Two main properties of the zygote are: it has a precise identity, and it is oriented toward a definite development, that is, “identity” and “orientation.”

“Identity” means the automatic self-organization of a new system, which operates for the purpose of setting this fertilized ovum on the correct course of the following entire developmental process. That is to say that from the very start, a program has been coded and the fertilized ovum develops step by step towards becoming an adult human being based on that program. We all have DNA. That DNA is not something that gradually develops, but is something that is completely programmed at the moment of fertilization. Following fertilization, the zygote simply develops in accordance with the plan of the DNA. Previously this was not fully understood and it was often thought that the DNA must be composed gradually. Quite recently I read an article in an Italian newspaper that was based on an understanding that the development of the embryo was, in the initial stages, controlled by the maternal genes. This, of course, is false. It certainly isn’t any genetic material of the mother but its own DNA that makes the zygote develop from the very beginning. This is what is meant by “identity.”

“Orientation” means that the zygote is intrinsically oriented and determined toward a definite development. In the July 2002 edition of

the scientific magazine *Nature*, there appeared an article entitled “Your Destiny, From Day One.” The subtitle was “The Mammalian Body Plan Starts Being Laid Down from the Moment of Conception.” The sperm’s entry point into the ovum at the fertilization determines where the cell first divides and then body axes are established. Therefore, saying in addition, this article questions the impact of the Pre-implantation Genetic Diagnosis (PGD) and certain techniques of assisted reproduction (for example, Intra Cytoplasmic Sperm Injection, ICSI). During PGD one or two cells is extracted from the embryo at the eight-cell stage, and during ICSI, sperm is injected directly into the ovum. Such interventions could destroy the delicate processes of establishing the body axes and so on. However, what is important here is that the fate of each cell and ultimately all the tissues of the body is determined at the moment of fertilization. From the second to third day following fertilization, various genes of its own start becoming active in a prescribed order. This gene activity does not occur all at once, but rather, as the embryo develops, the various genes gradually become active. Currently researchers are starting to identify which genes begin to become active on what day and at what stage in the development of the embryo.

To sum up, except of those cases in which an error or accident occurs, at the fusion of two gametes, a new real human individual initiates its own existence, or life cycle. If during that life cycle all the necessary conditions are put in place, all the capabilities that have been endowed intrinsically with the embryo will be automatically actualized. Therefore, from the time the gametes fuse, the living human embryo is not simply “a mass of cells,” but a real human being with its own identity.

The reason why I am emphasizing that the embryo is “not simply a mass of cells” is because I would like to offer a position that is in opposition to one of the assertions that is widely held. They insist that the embryo is not a human being, but a mass of cells up until the 14th day of its development, then human rights are not being violated even when it is used and destroyed as experimental material.

Prof. Serra is active also as a clinician and a priest, so he is well acquainted with both bioethics and medical ethics. However, his principle function at the Academy seems to be first of all to investigate the scientific documents as a specialist in human genetics and to judge accurately what the scientific truth is. Prof. Serra is over 85 years old and even now is still very active in his profession. I am nothing more than a complete amateur when it comes to biology and human genetics, and I am very grateful for the fact that Prof. Serra has taught me carefully and in a truly easy-to-understand manner about the most recent information

regarding these fields.

With this, I would like to conclude my comments on the biological aspects.

### **The Principle of Ethics: Human Dignity “Without Exception”**

One more issue of importance is the principle of ethics. That is, the principle of human dignity. We should recognize the fundamental rights and human dignity that all persons possess, without exception. It is also a fundamental principle of the postwar international law, as I mentioned before.

*The Universal Declaration of Human Rights* (1948) is considered as something like a constitution for international law after the war. Since Japan also joined the United Nations, we are under the control of the *Declaration*. The *Declaration* opens with the line: “Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world...”

Based on this *Universal Declaration*, the conventions for a number of detailed human rights have been concluded. Among them, one that is considered to be of particular importance is the *International Covenant on Civil and Political Rights* (1966), which is generally referred to as the “*B Covenant*.” In Article 7 of the *B Covenant*, the following is written: “No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment. In particular, no one shall be subjected without his free consent to medical or scientific experimentation.” There may be some people who read this passage and find it to be somewhat strange. In Article 7, along side cruel, inhuman or degrading treatment, subjecting people to medical or scientific experimentation without their free consent is prohibited. This is the same as saying that “being made into experimental material without ones free consent is equal to torture, or equal to inhumane punishment.”

Why was such an article introduced? In point of fact, it is an important article, which is directly guided by the postwar fundamental principle of international law, that is the human dignity principle. What then is the thinking behind this article? It is a reflection on the medical experiments on human subjects conducted by the Nazis during WWII. In the first part of the *Universal Declaration*, remorse is expressed about the acts that violated the dignity of human beings during the war. These were the acts of the Nazis. They engaged in cruel medical experiments on human subjects. However, they were conducted as legitimate acts on

the excuse of medical progress. The people who were subjected to the medical experiments were deprived their human rights and were degraded to mere experimental instruments. The Jews were considered inferior beings by the Nazis and therefore it was thought to be acceptable to sacrifice them for the good purpose of benefiting human society and advancing medicine and science. The *Universal Declaration* sought to get rid of this entire way of thinking. Thus, in order not to commit the same gross violation again in the future, and for the sake of “freedom, justice and peace in the world,” human dignity should be protected without exception. Otherwise, we will find ourselves reverting back to the atrocities committed by the Nazis. The years following WWII began with these reflections and regrets. The *Universal Declaration* was this kind of decisive declaration for the human race. This keynote of the *Universal Declaration* is expressly stated in Article 7 of *Covenant B*. The expression “degrading treatment” is found in Article 7. It means to reduce human beings to animals, treating them as experimental instruments or laboratory animals. Heinrich Himmler, the Nazi who conducted experiments on human beings, is reported to have actually referred to Jews as “laboratory animals.” Putting an end to such inhumane and immoral acts was the goal of these fundamental principles established after the war. Had that not been done, the Nazi past could well be repeated. It is a commitment to the idea that it is impossible to construct a peaceful international society without the fundamental principle of human dignity.

Where then does this concept of “human dignity” come from? Jacques Maritain was a French Catholic philosopher. When the *Universal Declaration* was being drafted, he sent letters to politicians and other philosophers in the world, surveying them on such questions as “What are the fundamental human rights in your country? What is the most fundamental of values?” When Maritain looked at the answers that were returned to him, he found that, while differences in culture and religion were evident, the basic contents were quite similar. In light of that, Maritain decided to make a key word which would represent the greatest value and that would be common to all human family. And he used the expression “human dignity.” While the concept of human dignity has its root in Christianity, Maritain introduced this concept as to indicate the ultimate value, above which there could be no other, bringing all human beings to the unity. In Japan “human dignity” is often confused with “respect for the individual,” which does not go beyond public welfare. But nothing goes beyond human dignity, including public welfare. Thus human dignity is the ultimate value in the postwar international society.

Unfortunately, we can see confusion in Japan now regarding the substance of the concept.

What I have discussed now is the fundamental principle of international law, but human dignity is also a fundamental principle of international ethics.

One document that reflects this is the *Declaration of Helsinki*. The expression bioethics is a relatively recent term, but medical ethics itself has been in use for long times. As mentioned before, the medical experiments on human subjects by the Nazis were conducted under the cloak of medical progress. These experiments were not only illegal, but also grave affairs in the medical world and for medical ethics. As a result, the World Medical Association issued the *Declaration of Helsinki* in 1964. This document clearly states that, "In medical research on human subjects, considerations related to the well-being of the human subject should take precedence over the interest of science and society." That is, though experiments on human subjects could promote the advancement of medical science, we should not sacrifice anyone in order to save others. It is stating that every human beings, whoever they may be, must not be sacrificed in order to progress medical science.

In response to the Nuremberg Trials where the Nazi doctors were convicted for these experiments on human subjects, the Medical Association published the *Declaration of Helsinki*. It is the very foundation of postwar international ethical principles on medical experimentation on human subjects. The *Declaration of Helsinki* has been revised many times after that, most recently in 2000. At present, regulations regarding different types of experiments have been added to the *Declaration*.

Japan is also a member nation of the World Medical Association. However, we cannot say this international agreement is effective in Japan. Most of the national medical associations in European countries each have established their own deontological codes based on the provisions set down by the World Medical Association. They have also set up their own autonomous judicial bodies. When a violation occurs, a trial is initiated and in the case of gross violations licenses are revoked. Since the deontological codes are severe and binding, even though there is no legal regulations, this system is functioning quite well. Unfortunately in Japan we have no such a system.

The *Declaration of Helsinki* provides guiding principles for medical research. Many of you may have little familiarity with medical research. However, if you were to become sick, you might try out a new medical treatment in a hospital. And to use unproven or new therapeutic measures is regarded as "medical research combined with medical care" by

the *Declaration*. Until thirty years ago in Japan the expression “a patient for academic use” was even used. However, patients want to be cured and, if there is no treatment method, one can imagine easily that they will hope to try an unproven or new treatment. The physician will also want to help such patients. However this physician’s desire to develop a new treatment could be even stronger in their recommendations. And the patient who received such a new treatment might have to go through an excessive amount of pain, though they could make a contribution to the progress of medical science. It is for this reason that the line “concern for the interests of the subject must always prevail over the interests of science and society” has been written in the *Declaration of Helsinki*. It has been pointed out that, while recently this situation has improved substantially, Japan is behind other countries in the protection of human subjects.

Not a few conventions or rules of ethics have come into effective after the *Declaration of Helsinki*. Among others there is the “*Convention on Human Rights and Biomedicine*” of the Council of Europe (1996). The official title is long and is as follows. “*Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine*.” More simply, it is referred to as the “*Convention on Bioethics*.” It might be difficult to presume the substance of the *Convention* from the brief title “*Convention on Bioethics*.” However, if we were to see the longer title, we would probably understand that the *Convention* is designed to protect the dignity and rights of human subjects in the biomedical research. The Council of Europe invited also Japan to adopt the *Convention*, but we did not.

The “*Universal Declaration on the Human Genome and Human Rights*” put out by UNESCO (1997) is also one of the international ethical conventions, which takes human dignity as the highest principle.

Now, according to the *Declaration of Helsinki*, we would conclude that the human embryo cannot be the subject of medical research for the following reason. The *Declaration of Helsinki* imposes “to obtain the subject’s freely-given informed consent for any research on human beings.” Special consideration must be given to people who are under age incapable to give consent and people who have lost consciousness. Also from a human embryo his or her informed consent cannot be obtained and so the medical research on human embryos that will not benefit the embryo him or herself is clearly prohibited by the *Declaration*. For example, due to the advancement of technology, we might find some disease on the early human embryo. In this case, would it be acceptable to resort to experimental treatment? If it were thought accept-

able, then it would be in order to “save the human embryo him or herself.” The other experiment or the medical research for the purpose of producing ES cells and so on could contribute to curing the illness of the other persons, but the illness of the human embryo could not be cured. Conversely, that human embryo would be sacrificed. Therefore, the medical research on human embryos cannot be done in principle under the *Declaration of Helsinki*.

Thus, when the argument arose as to whether it was acceptable to perform experiments on human embryos, the first thing that came to the minds of scientists might be “will it be possible to revise the *Declaration of Helsinki*?” Because they had known very well that human embryos could not be used for experiments, so far as the *Declaration* would not be revised.

### **Objection 1: The Pre-embryo Theory**

Meanwhile, different opinions were put forth from the position of those promoting scientific research on human embryos. They insisted that the human embryo was not yet a human being, which made it possible to do research under the principle of human dignity. If a human embryo were not a human being, it could not be covered by the principle of human dignity.

Under that kind of logic, Britain was the first in the world to open up the scientific use of human embryos in 1984. The Warnock Report offered the approval of scientific use of early human embryos. How did this transpire? The Warnock Committee had a very famous embryologist, Anne McLaren, who was a Nobel Prize winner. The mission of the Warnock Committee was to issue an answer as to whether the scientific research on early human embryos should be allowed or not in Britain. However, the majority of Committee members were not specialists in embryology like Prof. McLaren and at that time it was still not clearly understood when the human life biologically began. At this stage, Prof. McLaren asserted that, “the embryo does not exist during the first two weeks after fertilization,” and introduced the term “pre-embryo.” This term introduced an idea that the pre-embryo should be considered as a mass of cells which does not yet constitute a human being. If this were a scientific fact, the scientific use of “pre-embryo” might have been recognized by the Catholic Church. Because, if “a human being did not yet exist,” human dignity would not come into question and, as a result, there would be room for experimental research on pre-embryos. Britain started down on the path of conducting the research based on this “pre-

embryo theory.”

However, later, Prof. McLaren herself abandoned this theory. In 2000, she clearly acknowledged that a human embryo began to exist not on and after the 14th day, but from the very start. Furthermore, the term “pre-embryo” was completely erased from O’Rahilly’s manual of human embryology (2001 edition).

## **Objection 2: The Possibility of Twins**

The other different opinion is that the embryo up to the 14th day bears within it the possibility of becoming identical twins and therefore it is still not an individual, and so, it does not have its own personality. This opinion had a great deal of influence on the Bioethics Committee of Japan. At the Bioethics Committee, deliberations regarding the biological beginnings of the human being had not had at all. At the start, McLaren’s theory had served as the reference, but later the argument that held the greatest sway was this opinion regarding the possibility of identical twins.

Norman Ford who put forth this opinion is a Catholic biologist. In Japan, since the Catholic Church’s standpoint had not been well known, the Bioethics Committee might have been under the misunderstanding that “even the Catholic Church is saying that it is acceptable to conduct experiments on the human embryo up to the 14th day because it is not yet an individual.” Ford’s opinion had, unfortunately, strongly persuasive powers also in other countries. Because his opinion appealed to people who wanted to promote scientific research on human embryos.

However, the occurrence of identical (monozygotic) twins is just an accident in biological terms. Normally one fertilized ovum, that is an embryo, does not divide into two, but it can rarely divide into two from the two-cell stage until about the 14th day of development due to some kind of accident. The rate of this occurring is only 0.22%. “The Human Embryo in its Pre-Implantation Phase,” which is the newest publication of the Pontifical Academy for Life in June of this year, demonstrates scientifically that, against the opinion of Ford, the individuality of the embryo is acquired at the moment of fertilization. It goes on to say that, “the cellular plasticity and malleability of early embryonic development does not annul the individuality established at the fusion of gametes; if anything, it highlights the essential role of those properties in the regulation of the new organism’s development for example, in order to give it the capacity to compensate for eventual injuries or errors in the programme of embryonic evolution.”



### Objection 3: The “Person” Theory

One more objection from the advocates of human embryonic research is that human dignity is not recognized in all human beings, but only a certain group of human beings. It insists that some human beings including early human embryos are not “persons” entitled to human dignity. Also in Japan, this point of view has many supporters, and there are those who think that “a person” is to be understood as a being that has “rational self-consciousness.” Based on this line of reasoning, people who do not have self-consciousness would not be viewed as persons deserving human dignity, and then human rights. For example, Peter Singer who holds to this opinion insists that, since dolphins have IQs greater than three-year-old human children, dolphins or chimpanzees are more intelligent and “person” like. Singer has come to Japan to lecture on several occasions, and while I don’t know how many people agree his views, this “person” theory has been broadly introduced in Japan. A number of British and American influential scholars of bioethics, including Michael Tooley and H. Tristram Engelhardt share this theory. In Japan, western bioethics are lumped together and thought of as a single entity. However, among them, there are two lines of thinking, and they can be roughly divided into Personalistic bioethics, which take human dignity as the ultimate principle and Anglo-American bioethics, which take as their ultimate principles the self-determination of the individual, the freedom of the individual, and the individual pursuit of happiness. In Japan, Anglo-American bioethics have been one-sidedly introduced to a remarkable degree.

According to this thinking, all human beings do not have personhood or personality; only a certain portion of all people has personhood. If we adopt this opinion, we can perform experiments on human embryos up to the 14th day not yet having self-consciousness. In any case, the appearance of the primitive streak on the embryo, which is the origin of the neuron, occurs only after 14th day. So there could be no pain, no feeling and no self-consciousness in the early embryo. Therefore, the human embryo up to the 14th day is not a “person” and then, it is acceptable to conduct experiments on it. However, on the same logic, it would be possible to deny the human dignity and human rights of, for example, the patients who are in a vegetative state.

This point of view is referred to as the “Person” theory. The concept of the person in the personalism found in Catholic bioethics is quite different from one in the “Person” theory. As I mentioned before, the essential feature of a person is to be found in the spiritual soul. A person

signifies the capacity of self control, personal responsibility to live in the truth and the moral order. And even if this capacity has not actually materialized, it is sufficient if there is the potential capacity to develop in that way. This capacity is not dependent on a person's age, the physical body, the psychological state, the naturally inherent traits of a person, or DNA; it resides within the spiritual soul of all human beings. It is not something that has a biological or psychological nature; it is existential in nature.

According to the "Person" theory, whether someone is a person or not is determined by naturally inherent traits, IQ, etc. The theory which attributes superiority and inferiority to human beings based on such genetic material—DNA is a material thing—takes sides with eugenics, using the same logic of the Nazis. On the other hand, according to Catholic thought, the spiritual soul is something nonmaterial and transcendental, that God breathed into all human beings. The soul is not something that human beings have acquired by themselves; it is given from outside of themselves by grace. Human beings were created in the "image of God." God created human beings to look like Him. And human beings are invited into a personal communion with God. What makes human beings a person is that they have a spiritual soul holding communion with God.

As I am created in the image of God, other people are also created in the image of God. All human beings are children of God and within them dwells the Spirit of God that transcends one's own subjective perspective and understanding. In the sense that all people have the same Spirit of God, they are all brothers and sisters. Therefore, as brothers and sisters they should love one another and help one another. This is the Catholic thought, but the same philosophy is written in the first Article of the *Universal Declaration of Human Rights*, which was mentioned before.

"All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." When we compare our IQs and physical abilities, there are differences among us. We are never equal at all in this regard. However, this *Declaration* asserts that we are all completely equal in our spiritual soul.

I'm sure that many of you are familiar with a famous painting "The Creation of Adam" by Michelangelo in the Sistine Chapel. According to the Bible, God took from the earth and formed the human body, breathed life into it and created a man. In this painting Adam's body is muscularly well defined and is perfectly formed in a physical or material

way, but he lacks vigor. He has no life. Now, God is about to touch Adam with His right index finger. He is about to animate him with the Holy Spirit. Because of this spirituality of the soul, which is filled with the Holy Spirit, the human being acquires its dignity.

However, after God created Adam who was the first human being, the human race did not continue to increase in number by God taking a lump of clay and molding one human being after another; rather they increased through procreation by a man and a woman. God invited men and women to participate in the Creation of God. Since then God has been continuing to create human beings through the procreation by men and women, through the communion of men and women.

When artificial reproduction is discussed, the expression “reproductive rights” is often used. The word “reproduce” is also used when talking about making objects or reproducing animals. Catholics use a different word, “procreate,” to describe reproduction of human beings. “Procreate” means “to promote creation.” Therefore, it refers to participating in and promoting the Creation of God. What is important is that a human being is not manufactured or reproduced like an object by some other persons, but becomes a living being by virtue of the spiritual soul, which is something that cannot be produced by men. That is, the dignity of procreation is derived from the spiritual soul; it is not derived from material or physical characteristics, such as the superiority or inferiority of the DNA, or the activity of the cerebral nerves.

In February of this year, the General Assembly of the Pontifical Academy for Life was held under the theme “The Human Embryo Before Implantation.” A picture by the name of “Visitation (Mary’s Visit to Elizabeth)” was used on the cover of the program. In June of this year, as mentioned before, a booklet was published that summarized in easy-to-understand terms the results of this assembly, and this picture was also used here for the cover. On the left is Mary. On the right is Elizabeth. Jesus is in Mary’s womb, and the prophet John the Baptist is in Elizabeth’s womb. Mary who has conceived Jesus is going to meet Elizabeth, and, as written in the Bible, the baby John inside the womb leaps at this time. Jesus is the Son of God and so when Jesus comes, even though John the Baptist is still an embryo inside Elizabeth, he leaps for joy at the visit of the Divine Mother. John the Baptist certainly doesn’t have self-consciousness, and he cannot actually touch or even see. In spite that, he can have some kind of communication with God not through the sensory organ. I think this picture was used on the pamphlet because it demonstrates this point. In short, it shows the fact that it is possible even for people who are in a state “prior to rationality and

consciousness” to have a communion with God.

After Pope John Paul II passed away, his successor Pope Benedict XVI presented a specific kind of decree “Compendium of the Catechism of the Catholic Church” shortly after he acceded to his new position in 2005. The following section summarizes the Catholic standing position regarding the protection of human embryos.

“The inalienable right to life of every human individual from the first moment of conception is a constitutive element of civil society and its legislation. When the State does not place its power at the service of the rights of all and in particular of the more vulnerable, including unborn children, the very foundations of a State based on law are undermined.” This is a confirmation of the spirit of the *Universal Declaration of Human Rights*, a confirmation of the truth that human dignity is the foundation of peace. I believe that Pope Benedict XVI is warning us that the scientific use of human embryos that is in agreement with the “Person” theory is a threat to the peace to which the *Universal Declaration of Human Rights* aspires.

## **Biotechnology and Religious People**

I would like to conclude my talk today by answering the question: “What is the mission of religious people with regards to the progress of biotechnology?”

First, sending a message about the ultimate value of human life at individual discretion and getting united for the construction of peace.

Secondly, getting the accurate scientific truth on the current biotechnology. Through this, it will also be possible to propose concrete alternatives that will truly promote biotechnology in line with the principle of human dignity. The Catholic Church is not simply opposing ES cells research, but offering alternatives.

For example, it is possible to reprogram adult stem cells to produce different types of cells, mostly blood cells, muscle cells and neural cells. The Catholic Church has proposed that adult stem cells research should be promoted. In fact, currently also in Japan many scientists are engaged in this research and some have reached the stage of conducting clinical experiments. It has also been reported that a clinical experiment on cardiac muscle cells derived from adult stem cells will soon be conducted.

On the other hand, the prospects for ES cells research are not rosy. For example, the American company Geron began to do research on ES cells, but its stock, which was \$69.00 in 2000, dropped sharply to \$1.69 three years later. The British company PPL Therapeutics’ stock was

\$320.00 in 2000 and dropped to \$11.00 in 2003.

Many of you may have heard about the scandal in which Prof. Hwang Woo-suk of Seoul National University claimed falsely that he had “succeeded” in producing cloned ES cells. Although many problems behind this scandal have been reported, what scientists have been paying the most attention to is that over 2000 ova have had been used in his research. Even though 2000 ova in good condition were collected and used for his research, not a single cloned ES cell could be obtained successfully. This fact has made scientists suppose cloned ES cells research is not promising. I believe that one of the reason why Professor Nakatsuji is saying that he will not conduct this type of research is because of this point. Whatever the case, it seems to be a problem to report that ES cells research could promise a dream treatment. In fact, we have not yet succeeded even in the cloning of primates such as monkeys.

The Catholic Church has pointed out that the promotion of this type of research may well turn out to be a drastic waste of time and money.

In addition, Prof. Serra is also proposing gene therapy instead of assisted reproductive technology. He is suggesting that we seek out not to reproduce a baby with the donated embryo or gametes and so on, but to identify the genes that cause sterility and infertility, and directly attack them or modify their expression. Thanks to the results of the Human Genome Project, the genes that are the cause of sterility and infertility have been starting to be identified. Prof. Serra says this new way is more promising and respectful to the dignity of both the parents and the babies to be born.

On the other hand, in order to achieve a 95% success rate through IVF, which is the most popular technique of reproduction, it is necessary for women to undergo 13 to 15 interventions on average. There are many women who give up half way. What is worse, that intervention is extremely stressful and so 80% of women who are not successful tend to fall into depression. It has also been pointed out that serious conditions can occur in the babies born through these techniques. For example, these include a high rate of miscarriage, premature birth, a very low birth weight, fatality and morbidity.

Therefore, in light of these facts, we should research what kinds of alternatives exist. Might there not be a better way? In order to propose such alternatives, I believe we must accurately gain an understanding of the scientific truth, having fully considered the ethical principles.