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Women and actual challenges of bioethics: the perspective of Christian Social Doctrine shown at the example of pre-implantation diagnosis (PID)

Eminence Martino, distinguished Bishops, Ladies and Gentlemen,

it is a distinct honor and privilege to speak to you about the pre-implantation diagnosis. A procedure of artificial insemination which selects the unborn child before the transfer into the uterus and so is connected to particular obstacles for mother and child. The PID is a central challenge within the field of bioethics.

I will divide my paper into six paragraphs:

1. Basics
2. Pre-implantation diagnosis in Germany and international data base
3. Obstacles for mother and child
4. Christian social doctrine
5. Political challenges
6. In conclusion

1. Basics

“Pre-implantation genetic diagnosis (PGD) is the diagnostic procedure for an embryo in vitro prior to intra-uterine transfer with regard to changes of genetic substance that would otherwise lead to severe malformation.”¹ The goal is avoidance of pregnancies with undesirable embryos. In 1989, *Alan Handyside* in England succeeded in taking cell from an embryo and to diagnosticate the embryo on the basis of the cells. Apart from the invasive procedures, a PID can be carried out according to morphologic criteria (A-,B-,C-,D-class embryos). At the single or double embryo transfer the embryos with the highest nidation potential are chosen for the transfer, to avoid higher grade multiple pregnancies and to increase the rate of success of the artificial insemination. Consequently, by a pre-implantation diagnosis you can understand any qualification of an in vitro person's status before the intra-uterine transfer.

This picture shows an egg-cell with **the first polar body** which develops during maturation and also a sperm. After penetration of the ovum by the sperm, a **second polar body** develops and two pro-nuclei become visible. The egg-cell is now in the 2 pro-nuclei-stage (pro-nuclei).

One day after the union of ovum and sperm the maternal and paternal genetic materials are fused together. From this moment onward the embryo is called “zygote”. This early stage is known as blastomere. It is represented here by separate cells.

Two kinds of biopsies are widely used:

- a) By means of the **polar body biopsy** the first and second polar bodies are removed. This procedure is limited by its exclusive reliance on maternal genetic material. German reproductive medicine favors this method as it does not stand in conflict with the existing German Embryo Protection Law (GEPL).
- b) **Blastomere biopsy** is employed when the embryo has anywhere from 4 to 10 cells; of that total 1 or 2 cells are removed. Blastomere cells are ‘totipotent’.

The question "When does human life begin?" has a great importance when in the discussion about PID, stem cell research and cloning we deal with the worthiness to be protected. In Germany, embryos are protected by the embryo protection law whereas the pro-nuclei are excluded from the scope of that law. A person on the first day of his existence is called pro-nucleus. After the sperm

¹ Bundesärztekammer, Diskussionsentwurf zu einer Richtlinie zur Präimplantationsdiagnostik, in: Deutsches Ärzteblatt 97, Heft 9 vom 3.3.2000, p. A526.

cell has penetrated the egg membrane and both nuclei are visible. The process from the sperm's penetration until the fusion takes 18 to 24 hours. In Germany thousands of human pro-nuclei are biopsied, cyro-conserved or killed.

For a long time, the zygote, the fusion of the female and the male nucleus is considered the beginning of the new human existence. But latest embryonic research results presented by *Magdalena Zernicka-Goetz*, *Maureen Condic* and *Günter Rager* suggest fixing the beginning of human life already earlier, to the moment where the sperm penetrates the egg membrane of the egg cell.² *Robert George* and *Christopher Tollefsen* also point out those research results.³ It would be more clearly to call this process an admittance for the sperm because the egg cell is activating biochemical processes which make the entrance for the sperm available.

2. PID in Germany and international data base

In 1995, *Klaus Diedrich* was first to request permission for carrying out a blastomere biopsy, having submitted a proposal on behalf of so called “High risk couples” to the Ethics Commission at the Medical University of Lübeck. In this case both parents carried a gene mutation called ‘cystic fibrosis’. The request was denied on legal grounds. Since May 2001 the Bonn University Clinic offers the polar body diagnostic procedure for women of advanced age who have long desired a child. To improve the rate of success this program scrutinizes the pro-nuclei for chromosome abnormalities (‘Aneuploidy – Screening’). The first child was born in February 2002.

A data base of the European Society of Human Reproduction and Embryology (ESHRE) for the period of 1994-2004, that draws on reports of 50 collection points in Europe and the United States has documented 9,184 cycles of treatment, which were undertaken by 5,904 couples. The record shows 1,634 pregnancies that led to 1,177 births yielding a total of 1,470 children. The distribution was as follows: 897 single children, 267 twins (23%) and 13 triplets. A total of 117,183 egg-cells were taken, which amounts to 12,8 per cycle. The “Baby-take-home-Rate” of 12,8% (1,177/9,184) has exerted the strongest appeal to parents.⁴

In addition to the groupings “High risk Couples” and “Aneuploidy-Screening or pre-implantation genetic screening”, two further categories need mentioning: “Family balancing or social sexing”, a selection technique that eliminates embryos of the undesired sex. “Designer Babies” are children selected from among 80 to 100 embryos and designated to serve after delivery as immunologically suitable providers of healthy cell material for siblings who suffer from disease.

3. Obstacles for mother and child

It is a long way from the PID treatment cycle to real birth. The meeting of ovum and sperm cell and the development from the fecundated egg cell to an embryo and fetus, a process which for thousands of years has taken place within the deepest inner sphere of the female body can be observed by the artificial insemination now outside the female body. Depending on the indication fertile women today subject to a procedure which originally had been developed for infertile women.

First a sufficient number of egg-cells must be initiated and aspirated. The father is reduced to a role as a deliverer of raw material. He has to deliver in time the sperms he wins by masturbation in a

² Vgl. Zernicka-Goetz, Magdalena, Patterning of the embryo: the first spatial decisions in the life of a mouse, in: *Development*, vol. 129 (2002), S. 815-829; Condic, Maureen, When does human life begin? A scientific perspective, *Westchester Institute White Paper*, vol. 1 (2008) no.1; Rager, Günter, Der Beginn des individuellen Menschseins aus embryologischer Sicht, in: *Zeitschrift für Lebensrecht*, 13. Jg. (2004), S. 66-74.

³ Vgl. George, Robert, Tollefsen, Christopher, *Embryo, A defense of human life*, New York 2008, p. 38.

⁴ ESHRE PGD Consortium Steering Committee: data collection VI (Oct 2004), in: *HumReprod* 22 (2007), pp. 323-336.

laboratory. You find more information concerning the role of the father and also of the physician in my dissertation „Lücken im Lebensschutz“ published in 2008.⁵

To win female gametes is much more difficult. The ovaries are stimulated by daily hormonal doses. The egg cell maturation is surveyed by blood and ultrasonic examinations. The puncture can cause bleedings and in rare cases bowel or bladder injuries. A great difficulty is the compatibility between the dates and the daily life of the women, connected to a high performance pressure because the woman feels responsible for the number of egg cells.

Secondly, there is the obstacle of successful fertilization and the actual locating of the desired embryos. In Germany, there are great conflicts caused by the different interests. Germany imposed a limit of three embryos per cycle to be transferred (§ 1 Abs. 1 ESchG). In many centres three up to five egg cells are fertilized. So, the dilemma is very obvious. On the one hand, the biologist wants to keep the chance to have a child on a high availability level, on the other hand, no surplus embryo shall exist whose future is not clear.

ESHRE recommends Intracytoplasmic-sperm-injection (ICSI) for all PID cycles to avoid contamination. A study undertaken in Western Australia and other studies has documented that the risk of severe birth defects is twice as high among babies born after ICSI or In-vitro-fertilization (IVF) than among those subject to natural conception.⁶ One half of all embryos do not survive biopsy and diagnostic procedure. Only 17,461 out of 117,183 embryos were declared ready for transfer. However, only 12,984 were actually transferred. Analysis of the spare embryos which were not transferred – showed that in several cases the original result could not be confirmed.

If several desired embryos are available, a quick decision is required to determine which of them is to be selected for uterine transfer and what shall be done with the remaining embryos. Those intended for later transfer can be subjected to deep-freezing (cyro-conserved). It is estimated that 1 000,000 embryos are in deep-freeze storage in the United States. In Germany, by contrast, embryos may only be placed in frozen storage when an emergency arises. For 2001, the German IVF-Register listed 74,000 frozen pro-nuclei. Reproduction physicians suppose that a storage period of up to 100 years is possible. In July, 2005, in California there was a report about the birth of a girl who was cyro-conserved as an embryo for thirteen years. Deep-freeze raises a host of ethical and legal problems, such as the right of disposal after the death or separation of the parents. 1996, in Great Britain 3,300 embryos were destroyed. The storage period expired and the parents did not decide what to do with them. *Christian Hillgruber* says that the cyro-conservation of embryos contradict to the dignity of life for the embryo ekes out an existence between life and death. It is also possible to think about a violation of the right to physical uninjuredness according to Art. 2 Par. 2 (German Constitution) GG because the concentration of glycerine in the cyro-conserving agent makes the embryo shrivel "like a raisin".

Pregnancies resulting from artificial fertilization are generally considered risky and therefore are subject to elaborate pre-natal diagnostic procedures. Invasive pre-natal diagnoses carry a risk of abortive results (between 0.5% and 1%). About half of the pregnancies are additionally controlled by help of invasive prenatal diagnosis (Amniocentesis, chorionic villi biopsy). ESHRE data document seventeen cases of faulty diagnostics in a total of 1,634 engendered pregnancies. Because of positive results, 10 pregnancies were aborted. In addition there is evidence of eighteen fetocides that were carried out to reduce pregnancies with multiple individuals. "A fetocide does constitute a previously unacknowledged risk to the remaining children."⁷ Such a fetocide could well contribute

⁵ Klekamp, Mareike, *Lücken im Lebensschutz, Humane Vorkernstadien und Präimplantationsdiagnostik (PID) in Deutschland aus Sicht der Christlichen Gesellschaftslehre (Gaps in the protection of life, human pro-nuclei states and pre-implantation diagnosis (PID) in Germany from the view of Christian Social Doctrine)*, Paderborn 2008.

⁶ Hansen, Michèle et al., *The Risk of Major Birth Defects after Intracytoplasmic Sperm Injection and In Vitro Fertilization*, in: *The New England Journal of Medicine*, vol. 346 (2002), S. 725-730.

⁷ Hepp, Hermann, *Höhergradige Mehrlinge. Pränataler Fetozid*, Abstract zur Diskussionsveranstaltung „Kinderwunsch in der Krise“ am 28.6.2005 in Berlin, p. 2, 6, <http://dggg.de/pdf/2005-06-hepp.pdf> (7.4.2006).

to the Post-Abortion-Syndrome (PAS). This term includes all psychological symptoms which may occur as a result of the abortion, first the women, but also other persons (fathers, physicians, midwives).⁸

The prenatal diagnosis has changed the experience of a pregnancy in the Western societies in a principle manner. Until the second third of the pregnancy, the desired pregnancy changes into a pregnancy on probation. The latent reproach of culpability against pregnant women who deny prenatal diagnostic examinations and by this undertake the risk to have handicapped children, according to *Irmgard Nippert* is present in society.⁹ The more tests are offered and carried out the more you can discover and the more money you can earn. What in former times was called "to be expecting", in German language "to be in good hope", has disappeared. Into every pregnancy "a new form of brutality entered in secret manner". *Barbara Duden* describes that never before there was a culture "where all women within the horizon of giving birth to a child must consider a deviation of the norm". The "scaremongering...is made under the term of prevention". *Duden* calls that a "pathologization of a precious characteristic women have".¹⁰

The final obstacle is birth itself. In Germany, termination of pregnancy is legally permitted until the very moment of birth. Time will tell whether PID-Parents will have to cope with new symptoms post selection, esp. when faulty diagnoses and lack of clear information led to decisions that look deplorable in retrospect (Post-Selection-Syndrom). The selected children grow up with the conscience to live thanks to the existence (genetic characteristics without signs of illness) or non-existence (Aneuploidy-Screening, high-risk indication) of certain characteristics. If Adam Nash had not shown the fitting cell tissue structure he would have been destroyed like his brothers and sisters in embryonic state. The parents may claim that they love the boy also for the sake of himself, but de facto, in case of lack of this characteristic he would not have been transferred into the uterus of his mother. How does the relation between the brothers and sisters develop? Perhaps the children develop the fear to be rejected if they develop "undesired" characteristics. At the same time, there is an enormous pressure lasting on the selected child. Has a girl who was selected because of the family balancing the obligation to be especially "girlish"?

⁸ Vgl. Pokropp-Hippen, Angelika, Das Post-Abortion-Syndrom und sein Bezug zur posttraumatischen Belastungsstörung, in: Büchner, Bernward/ Kaminski, Claudia (Hrsg.), *Lebensschutz oder kollektiver Selbstbetrug? 10 Jahre Neuregelung des § 218 (1995-2005)*, Bonn 2006, S. 29-62.

⁹ Vgl. Nippert, Irmgard, Entwicklung der pränatalen Diagnostik, in: Pichelhofer, Gabriele (Hrsg.), *Grenzverschiebungen. Politische und ethische Aspekte der Fortpflanzungsmedizin*. Frankfurt a. M. 1999, S. 63-80.

¹⁰ Vgl. Duden, Barbara, Frauen ohne gute Hoffnung, Interview mit Eva Schindele und Volker Stollorz, in: Brähler, Elmar/ Stöbel-Richter, Yve/ Hauffe, Ulrike (Hrsg.), *Vom Stammbaum zur Stammzelle*, Gießen 2002, S. 307-319.

4. Christian social doctrine

Pope John Paul II. declares in *Evangelium Vitae* that [both] the capacity of human judgment and the societal apperception of the enormous transgression of premeditated killing is progressively weakening. “The willful decision to deprive an innocent human being of his life is morally speaking always disgraceful and can never be justified.” With regard to the right to life “each innocent human creature [is] equal to all others. Such equality forms the basis of every true social relationship”.¹¹ The decision that parents make in favor of PID may well be based on good intentions and may have benign consequences, namely a child. However, any killing is “radically incompatible with the love of God and the dignity of man, who was created in the divine image”.¹² The German philosopher *Jürgen Habermas* sees PID as violating “the conditions of reciprocity governing communicative understanding” and adds, “while ignoring the premise of consensus, parents have made decisions solely in accordance with their own preferences, as though they were ruling over a thing”.¹³

By the new instruction *Dignitas Personae* (DP) in 2008, the Congregation for the Doctrine of the Faith gave answers to some developments of biomedicine. From Christian view, the artificial insemination establishes „the domination of technology over the origin and destiny of the human person. Such a relationship of domination is in itself contrary to the dignity and equality that must be common to parents and children“ (DP 17). For: „Being in the image of God the human individual possesses the dignity of a person, who is not just something, but someone.“ (KKK 357). The fact that the son of God became a human makes clear, that "according to dignity all persons are equal". The unique dignity of man in the face of God and in the face of the other humans "is the last fundament of the principle equality and fraternity of all people, independent from their ethnic origin or...their sex“.¹⁴

The pre-implantation diagnosis "always is connected with the intrinsically illicit artificial insemination" and „is directed toward the qualitative selection and consequent destruction of embryos“. It is expression of the "eugenic mentality", because normally the pre-implantation diagnosis „is immediately followed by the elimination of an embryo suspected of having genetic or chromosomal defects, or not having the sex desired, or having other qualities that are not wanted“(DP 22).

In contrast to PID, pre-natal diagnostic procedures are morally acceptable, “if they represent no disproportionate danger for child and mother, and aim at early therapy or enhance a well-tempered acceptance of the unborn”. If such diagnostic is, however, pursued on eugenic grounds in order to selectively abort the impaired unborn, then the motives are “malicious and highly reprehensible “. ¹⁵

The reductions of embryos that is the intended killing of an artificially created and implanted embryo in the mother's womb who then remains in the uterus until the birth of the surviving fetus, is a serious moral offence. The decision of a mother to destroy the person she yearned for before is a "contradiction" which often results in suffering and feelings of guilt lasting for years (DP 21).

The instruction *Dignitas Personae* considers IVF a violation of the rights of the child to have its specific origin in the union of the marital act.¹⁶ It is not only the threshold of the PID procedure that stands against the symmetry of relations but each and every IVF treatment as well, because the very

¹¹ *Evangelium Vitae* 57.

¹² *Evangelium Vitae* 75.

¹³ Habermas, Jürgen, *Die Zukunft der menschlichen Natur*, Frankfurt 2001, S. 90.

¹⁴ Vgl. Päpstlichen Rat für Gerechtigkeit und Frieden, *Kompendium der Soziallehre der Kirche*, Freiburg i. Br. 2006, 108, 144.

¹⁵ *Evangelium Vitae* 63.

¹⁶ *Dignitas Personae*, 6.

beginning of human existence is subjugated to the will of the parents and the skills of reproductive medicine. New medical procedures to treat infertility must respect three fundamental goods:

- a.) the right to life and to physical uninjuredness from the conception until the natural death,
- b.) the unity of matrimony including the reciprocal respect of the married couple that the one only becomes father or mother together with the other
- c.) the essential human values of sexual identity which require that the procreation of a person must be desired as a result of the specific matrimonial act of love between husband and wife. (DP 12)

Here, DP orientates to *Donum Vitae* (DV). Although DV did not define „the embryo as a person, it nonetheless did indicate that there is an intrinsic connection between the ontological dimension and the specific value of every human life“ (DP 5). DP is a deeply positive message, a great yes to human life from conception until death (DP 1). Like DV does, also DP is locating at the formation of the zygote: „Thus the fruit of human generation, from the first moment of its existence, that is to say, from the moment the zygote has formed, demands the unconditional respect that is morally due to the human being in his bodily and spiritual totality. The human being is to be respected and treated as a person from the moment of conception“ (DV I, 1; DP 4). A problematic point is the answer to the question „What does conception mean? “ The admittance of the sperm into the egg cell, the fusion of the nuclei which takes place only 18 to 24 hours later I mentioned at the beginning, the nidation of the embryo in the uterus? Unfortunately, the new instruction does not include the latest research results given by *Zernicka-Goetz* and *Condic*.

This important teaching of the Church should be amended in order to forestall the impression that pro-nuclei are free to be used in PID procedures or selection and deep-freeze conservation.

5. Political challenges

Legislatures must grasp that PID will either be comprehensively adopted or not at all. Advocates of PID – including the majority of members of the National Council on Bioethics - have asserted that PID is justifiable “in analogy to the medical indication for the termination of pregnancy according to pre-natal diagnostic”.¹⁷ As the argument fashioned above has shown, PID and pre-natal diagnostic differ profoundly in regard to context and bodily strain.

The last 15 years have seen the emergence of a trend that makes the obligation to have a healthy child. Pre-natal diagnostic had appeared to be a step toward further choices, but has been turned into a new burden of responsibility for women.¹⁸ The German Council of Handicapped Persons (Deutscher Behindertenrat) has echoed the warning of the Conference of Bishops against PID. The Council sees PID as “the continuation of a logic that has already been expressed in the discriminating criteria of indications which sanction abortions.”¹⁹

6. In conclusion

It is a matter of urgency for the legislative branch to enact a legal barrier against PID in the form of polar body biopsy. The work of *Günter Rager* has proposed to classify the fertilized egg-cell as an individual in the biological sense; paired with the research of *Magdalena Zernicka-Goetz* it would thus be possible to place pro-nuclei – just like embryos – under the protective umbrella of the constitutionally enumerated human dignity. With the admittance of the sperm by the egg-cell the process is set into motion.

Thank you for your attention.

¹⁷ Nationaler Ethikrat, *Genetische Diagnostik vor und während der Schwangerschaft*, Berlin 2003, p. 56.

¹⁸ Schindele, Eva, *Weibliche Lebensentwürfe im Kontext von Fortpflanzungsmedizin und Pränataldiagnostik*, in: Graumann, Sigrid (Hrsg.), *Die Genkontroverse*, Freiburg 2001, p. 52-66.

¹⁹ Deutscher Behindertenrat, *Angriff auf das Lebensrecht behinderter Menschen*, Pressemitteilung vom 21.2.2003, www.presseportal.de (8.2.2005).