

THE PROBLEM OF EMBRYONIC STEM CELL RESEARCH

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Abstract

Germany is quite restrictive regarding the importation and utilization of embryonic stem cells. To control stem cell research in Germany the Federal Government established in 2002 a *Central Ethics Commission on Stem Cell Research*. Stem cells are interesting for research since they are biological prototypes which can be multiplied indefinitely in vitro, and which grow into many different specialized types of cells. One hopes that from embryonic stem cells, one can grow tissue which can replace diseased or destroyed tissue. There are also adult stem cells in human beings. But they do not multiply very easily, and their reprogramming is extremely difficult. Then different opinions regarding the permission of embryonic stem cell research are discussed.

How can we expect any guidance from Christian ethics concerning stem cell research? Our mandate is to further the good of our fellow human beings. But each blastocyte must develop into a human being. To answer this question, it might be good to look at nature. Nature is very generous with nascent life. Birth is the exception, death and natural abortion is the rule. Are we more protecting than nature of those embryos that are left over from in vitro fertilization? Could we not establish an analogy between the naturally discarded embryos in an unintentional abortion and the embryos not implanted by in vitro fertilization?

Can we look at nature without falling prey to a reductive naturalism? Is not humanity created in the image of God? We may conclude that humanity being created in the image of God in Gen 1:26-28 shows that a human being represents God's rule over creation. Therefore, we must shoulder our ethical responsibility. Blastocytes are not just research material. They are not just an accidental conglomerate of cells. They are potential human beings. The generation of human embryos for research is ethically problematic and should not be advocated. Research with adult stem cells should not be abandoned in favor of the "easier" way of embryonic stem cell research. An initial temporal limit of embryonic stem cell research should be advocated until we know whether adult stem cell research is not an actual alternative. Outlawing embryonic stem cell research at this point would contradict our obligation to serve our fellow human beings.

Keywords: stem cell research, Germany, image of God, ethics

INTRODUCTION

Are we allowed to kill to conduct research? It depends on whom or what we want to kill: We would hardly kill a human being, but more likely a frog or a worm. But embryonic stem cells are neither frog nor human. This makes the decision for or against embryonic stem cell research so difficult. But first a few facts so that we know what the issue is.

1. Relevant Concepts and Facts

Embryonic stem cells are gained from the interior of a blastocyte. This blastocyte has roughly the size of a dot on a piece of paper and consists of approximately 64 cells that float in a sphere filled with fluid. These cells are the so-called "stem-cells". The blastocyte is the result of an egg cell which was fertilized approximately five days earlier. Normally a blastocyte is formed in the ovary duct and then embedded in the uterus. At this point a blastocyte

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displays no human characteristics such as a spine, eyes, ears, or mouth, nor can it feel anything or express preferences. From a blastocyte one can isolate embryonic stem cells which can be multiplied indefinitely without becoming an embryo. The controversy surrounds the fact that when we remove stem cells from an embryo, or rather from a blastocyte, this blastocyte dies. Therefore, obtaining stem cells from a blastocyte is illegal in Germany on account of *The Embryo Protection Act* of December 1990. *The Stem Cell Act* of June 2002 stated very clearly: "The importation and utilization of embryonic stem cells shall be prohibited" (section 4/1). But its amendment in 2008 conceded that "the importation and utilization of embryonic stem cells for research purposes shall be permissible" under the certain conditions (section 4/2). Research involving embryonic stem cells shall not be conducted unless it has been shown that such research serves eminent research goals to generate scientific knowledge in basic research or to increase medical knowledge for the development of diagnostic, preventive or therapeutic methods to be applied to humans and the scientific knowledge to be obtained from the research project concerned can only be expected to be gained by using embryonic stem cells. This position of the German government has not changed since then though research with embryonic stem cells has been intensified.

To control stem cell research in Germany the Federal Government established in 2002 a *Central Ethics Commission on Stem Cell Research*. The Commission conducts its work on an honorary basis and is made up of nine members and nine deputy members from the fields of biology, ethics, theology, and medicine, appointed by the Federal Government for a three-year term. The members represent the fields of biology, medicine, ethics, and theology. The committee's task is to review and assess applications for the import and use of human embryonic stem cells. The committee examines the ethical acceptability of the applications and creates an annual report published by the Federal Ministry of Health.

Blastocytes which are used to gain embryonic stem cells result from "reproductive therapy," when eggs are fertilized in vitro, and not all fertilized eggs are implanted in the uterus. Normally these "extra embryos" are frozen and saved for the time being. One estimates that in the U.S. alone there are at least 100,000 to 150,000 "extra embryos" which sooner or later will be discarded. Embryonic stem cells can also be obtained from the precursors of sperm or from the egg cells of those fetuses which are aborted within the fifth to the ninth week of pregnancy.

Why are stem cells so interesting for research? Stem cells are biological prototypes which can be multiplied indefinitely in vitro, and which grow into many different specialized types of cells. We remember that a fertilized egg cell develops into a complete organism, into a Johann Sebastian Bach or an Albert Einstein, or into a human being like you and me. Up to the stage of eight cells all fertilized egg cells are totipotent. They can develop to a whole organism. A little further in the development, the cells of a blastocyte are still pluripotent, meaning its stem cells can develop into any kind of cell type whether liver or brain etc., but no longer into a whole living being. This is exactly why medical research is so interested in these cells. One hopes that from stem cells, one can grow tissue which can replace diseased or destroyed tissue, as in Parkinson's disease, Alzheimer's, and leukemia, or that one can repair damaged nerve cells which, if untreated, bring about paralysis. Even beyond the already mentioned phase of development to blastocytes, there are stem cells typical for specific tissue for instance spinal cord cells which lead to the formation of red and white blood cells and to blood platelets necessary for the coagulation of blood.

In addition to embryonic stem cells adult stem cells have been found in many different elements of adult human beings, for instance in the blood, the skin, and in nerves. But these stem cells do not multiply very easily and their reprogramming, for instance for a skin cell to morph into a brain cell, is extremely difficult. Some researchers even wonder whether they can depend on re-programming. With embryonic stem cells such problems do not exist. This is the reason why many scientists favor research with embryonic stem cells. Yet is it appropriate to conduct research in that direction or does this not imply killing a future human being?

2. Controversial Opinions

How difficult it is to find the right decision has been shown by the consultation of a *Study Commission on Law and Ethics in Modern Medicine*, a commission of experts set up by the German Federal Assembly in March 2000. The Commission was charged to address complex issues at the intersection of law, ethics, and medical advancements. It focused on topics such as stem cell research, genetic engineering, and the ethical implications of new medical technologies. On the question of the importation of human embryonic stem cells for research purposes, The Study Commission came up with two lines of argument. In its report 26 members declared that, respecting all arguments, this group is “opposed to the importation of human embryonic stem cells. Its opinion is therefore that the German Bundestag and the Federal government should take all possible measures to prevent the importation of human embryonic stem cells.”¹ But 12 members of the Commission reasoned that “it seems doubtful whether a complete ban on the importation of human embryonic stem cells derived from embryos abroad can be established on the basis of constitutional and European law. The importation of human embryonic stem cells is therefore to be tolerated under strict conditions”. This means that the Commission did not reach a common agreement but simply stated two opposite positions. According to the one position the isolation of embryonic stem cells is already taboo, and therefore also research with them. There can be no import of embryonic stem cells. The other position allows, under strict supervision, research with embryonic stem cells if they are obtained from embryos which have been left over from artificial fertilization and which would be discarded sooner or later anyhow. This later position is still in effect in Germany.

A statement of the Protestant Church in Germany goes a little further than the impasse of the Commission, even if the main sentiment of this statement points in the opposite direction and clearly rejects embryonic stem cell research. We read here: “One of the essential stimuli for medical and genetic research is the prospect of developing new therapies. From a Christian viewpoint this goal is ethically legitimate and worth pursuing. The command to love the neighbor implies to help people who are in need, and this means here to heal diseases and to minimize suffering. But even such a high goal should not be pursued regardless of its consequences. The means which are used to attain this goal must be ethically allowed. Furthermore, it is important that all promises concerning a possible therapy must be critically investigated so that they do not nourish the illusion that a world without suffering would be obtainable.” (1). Important in these considerations is the emphasis that it is the task of medicine to help people. From all we know, embryonic stem cell research seems to hold promise in this regard, even if we must warn that a world without suffering is an illusion. But how is it with the other point, that the means to help people must be ethically allowed? Is embryonic stem cell research ethically allowed? The issue of the importation of stem cells is irrelevant, for if we import stem cells, we only circumvent the letter of the law, but not its intention which says: “One shall not kill embryos (blastocytes).” Moreover, in other countries legislation concerning stem cell research is not as strict as it is in Germany. Should German scientists simply go to the U.S. to conduct their research on stem cells? Or can we expect any guidance from Christian ethics concerning stem cell research?

3. Ethical consideration

One could first side with Thomas Aquinas and argue in the line of natural law that there is an eternal law which is expressed in the structure of creation. Everything is objectively ordered toward this law (*lex eterna*). Human beings are reasonable beings who can discern

¹ https://webarchiv.bundestag.de/archive/2005/0113/parlament/kommissionen/archiv/medi/2zwisch_engl.pdf for this and the following quote.

this law and therefore through their own actions participate in the eternal law (2). Though the natural law shows society certain avenues, along which we can move without infringing on that law, it is not a foolproof means which points us to that which is right or wrong. For instance, Thomas Aquinas argued in favor of slavery, something which today any advocate of the natural law would reject. The problem concerning natural law consists in its presupposition that a human being is a reasonable being. Yet what some people find reasonable others find it totally unreasonable. We may think here, for instance, of the debate in Germany for or against the use of nuclear power. Of course, human beings are endowed with reason. Yet humans do not always use their reason in a way intended by God, but rather in their own selfish way to enact their own ideas of right and wrong.

To escape these problems, we could adopt a legal positivism and assert that the government must, through its power, enact the law and ensure that the law is obeyed. Yet the debate about research with embryonic stem cells shows that such positivism is not the proper way to distinguish between right and wrong. There are not only changing political power constellations, which could enact different laws, but economic and social necessities can also change. For example, in an aging population the rate of certain diseases increases and therefore the need to search for medical help. To escape from these changing tides, we could also allow everyone to decide based on his or her own conscience what to do. Nobody is forced to conduct research with embryonic stem cells. But in opting for the freedom of conscience, research would be conducted without any comprehensive boundaries by society. This would open the door to possible misuse. It would also be risky if the lawgivers were just responsible to their conscience because many cruel acts were committed in the name of one's conscience. We may think here of the eugenic sterilization law enacted in Indiana, U.S.A., in 1907.

As a Lutheran theologian I cannot tell society what to do because society is governed by reason, while a theologian is guided by the gospel. Since God is the all-embracing bracket of our universe, everybody is ultimately responsible to God for what he or she has done or left undone. Joshua 24:15 laid out the options very clearly: "Now if you are unwilling to serve the Lord, choose this day whom you will serve. [...] But as for me and my household, we will serve the Lord." With this option of "serving the Lord" we can follow Martin Luther who wrote in his tractate of 1520 *On the Freedom of a Christian*: "A Christian is a perfectly free lord of all, subject to none" and "A Christian is a perfectly dutiful servant of all subject to all." Christians have an inner freedom when they wholeheartedly put their trust in God. They know they are accepted by God's undeserved grace and not by what they have done. Since they know that they need not work toward their acceptance by God they put this freedom to action in neighborly love. "The measuring stick for good works is the advantage for other humans and not the ascertainment of one's own eternal bliss and piousness" (3). But what does this mean for conducting embryonic stem cell research?

Medical progress and general social conditions in Central Europe made it possible that the population enjoys a long-life expectancy. Yet a higher life expectancy translates into an increasing number of age-related diseases. Moreover, because of our medical progress, the number of people who are far from being healthy continually increases. They have offsprings of their own, and hand on their genetically caused problems to the next generation. The increasing number of diseases such as diabetes and extreme near-sightedness demonstrates this fact. This means that the increase of many diseases is caused by medical progress. Confronted with this situation, medicine attempts to stem the tide, pursuing everything which may hold promise to alleviate the situation, including stem cell research. According to our present knowledge embryonic stem cell research seems to contain more potential to find cures for certain diseases than does research with adult stem cells. In our present situation it would therefore be irresponsible to close the book on this type of research. Our mandate is to further the good of our fellow human beings.

But is a blastocyte just material for research, only a mere heap of cells and a far cry from human life? A biological arrangement which does not have any feelings and does not express any intentionality can hardly be regarded as a person. Nevertheless this "heap of

cells” could develop into a human being given a chance. But this chance is not realized if the embryo is not implanted into a uterus, and instead been frozen and eventually discarded. The ethical problem of killing – or rather of not letting an embryo develop – is not so much connected with embryonic stem cell research, but with an earlier step, namely in vitro fertilization. This, however, is not our topic.

Here, we must ask whether each blastocyte must develop into a human being. To answer this question, it might be good to look at nature. On average, one needs four natural fertilizations until a pregnancy occurs which results in the birth of a child. Within the first two weeks, 70–80 percent of the fertilized eggs terminate their “life” in a natural abortion, even before a woman knows that she is pregnant. This shows that nature is very generous with nascent life. Birth is the exception, death and natural abortion is the rule. It might be that nascent life often contains so many damaged genes that nature does not want to risk that pregnancy would come to term. This could also be the case with some embryos which are not used for in vitro fertilization. Were they allowed to come to term, they might not survive. Are we then more protecting than nature of those embryos that are left over from in vitro fertilization? Could we not establish an analogy between the naturally discarded embryos in an unintentional abortion and the embryos not implanted by in vitro fertilization? The “left-over” embryos could then be used for stem cell research, this means for a good purpose, instead of having them discarded as it occurs in natural abortions.

But can we look at nature without falling prey to a reductive naturalism? Is not humanity created in the image of God? Would we not endanger this status if we manipulated the beginning of life? Indeed, we read in Gen 1:26: Then God said: “Let us make humankind in our image, according to our likeness.” If we kill blastocytes and manipulate stem cells, this could mean that we sin against being created in the image of God. We would usurp the place of God the creator. Yet we should not understand our status as *imago Dei* in a static or ontic sense, because in the same verse we also read: “Let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the wild animals on earth.” Then we read: “So God created humankind in his image, in the image of God he created them; male and female he created them. God blessed them, and God said to them, ‘be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth.’” This command to rule over the rest of creation is intimately connected with the assertion that humanity was created in the image of God. One could also say that without this command to rule, being created in the image of God makes little sense. Being created in the image of God should be understood not so much ontological, but rather teleological or functional.

This conclusion is reinforced if we look at the cultural historical context of Genesis 1. In Mesopotamia and Egypt, one often used images of the gods in the religious cult. The significance of an image was not so much seen in that this image would depict God or be a replica of God. While such affinities were not totally irrelevant, the picture or image was seen as the location in which the godhead was present and in which it manifested itself. The picture or image therefore represented the presence of God and the blessing which was accompanied with this presence (4).

We may conclude that the notion that humanity was created in the image of God in Gen 1:26-28 shows that a human being represents God’s rule over creation. This is also illustrated in Ps 8 where the psalmist wrote: “What are mortals that you care for them? You have made them a little lower than God and crowned them with glory and honor. You have given them dominion over the works of your hands; you have put all things under their feet” (Ps 8:4-6). Humans are not replicas of God, whatever we might understand such replicas to be. Humans represent God. We might think here of government offices where a picture of the sovereign hangs on the wall to show that business in this office is conducted according to the intention of the sovereign and not of the person who occupies this office. Being created in the image of God means to act in God’s place as God’s representative and administrator.

This is reinforced by the New Testament use of the notion that we are created in God's image. This notion is almost exclusively found in Pauline literature. There being created in God's image is ethically determined. It means that one displays a conduct for which God gives the example. And God's conduct became visible in Jesus of Nazareth (cf. Phil 2:5; Rom 15:5). If we think of stem cells or blastocytes, they are not agents who could act in God's place. Only the fully developed human being can be the administrator and representative of God's creation and is ultimately responsible to God.

As we penetrate more deeply into God's creation through our research and our attempts to heal human diseases, we must also shoulder our ethical responsibility. We must ask ourselves whether there are primarily economic, egotistic, or benevolent interests that determine our actions. Since we do not live in paradise, many different and often contradictory motifs are closely interwoven. It is decisive that our actions follow our conscience, but not an autonomous conscience. Our conscience should be guided by the insight that we are God's administrators. Then there is no need to justify our decisions, because, remembering the Reformation insight, we know that we are already justified by God. We can follow the maxim of the philosopher Nicolai Hartmann: "Be guilty as much as you want, but bear the guilt in honor, only care that good will be enacted." (5). This is not a license for mindless actions. We cannot resign to inactivity either, just because of possible or actual guilt we might incur for our decisions. As researchers we are obligated to the ethos of objectivity and sobriety, without indulging in Faustian self-aggrandizement.

We must always be mindful that blastocytes are not just research material, not just an accidental conglomerate of cells. They are potential human beings. This means that the generation of human embryos for research is ethically problematic and should not be advocated. Research with adult stem cells, although more difficult, should not be abandoned in favor of the "easier" way of embryonic stem cell research. To mitigate against this "easier way" an initial temporal limitation of embryonic stem cell research should be advocated until we know whether adult stem cell research is not an actual alternative. Outlawing embryonic stem cell research at this point would contradict our obligation to serve our fellow human beings. It is contradictory also to grant more protection to embryos than to fetuses, which, according to German law, can be aborted till the end of the third month of pregnancy without legal consequences. At that stage fetuses are certainly human beings in the full sense of the word and their abortion is intentional killing. Embryos (blastocytes), however, at least at the very beginning of a pregnancy, are only potential human beings and not human beings in the full sense of the word. But even they have a certain dignity and should be protected to some extent. Therefore, if they are already endangered or left over from artificial insemination, their manipulation or destruction should occur only to avoid even greater dangers. This means that they should only be manipulated or destroyed if with their help we can avoid or heal so far incurable and extremely dangerous diseases and if there no other possible remedies.

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