

Should Research on Stem Cells Be Allowed?

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Research with stem cells promises new therapies for injuries and diseases. This applies particularly to embryonic stem cells which are found in a early embryo during the first days of its development. Embryonic stem cells are totipotent, that is, they have the ability to develop into any cell type, and as a consequence into any tissue and organ. Adult stem cells found in the bone marrow of adults are - unlike embryonic stem cells - not totipotent. They are only multipotent. They can develop into some, but not into any tissue and organ. The ability of embryonic stem cells to develop into any cell types presents us with *unusual* scientific and therapeutic promises. They could allow the generation of new cells which could be used to treat diseases such as Alzheimer's disease, Parkinson's disease, heart disease, and kidney failure. They could also be important for understanding the earliest stages of the human development. Thus, the research on stem cells could lead to results that are of great importance to us. This applies particularly to the research on embryonic stem cells, because adult stem cells are not as promising as embryonic stem cells due to the fact that they are only multipotent.

There are different ways to derive embryonic stem cells. Embryonic stem cells can be derived from

- a) human fetal tissue,
- b) human embryos created by in vitro fertilisation,
- c) human embryos generated by somatic cell nuclear transfer, a technique in which an adult cell nucleus is transferred into an embryo. This is also called *therapeutic cloning*. This form of cloning does not - unlike reproductive

cloning - amount to the creation of a human person, that is, to the creation of a so called clone, a genetically identical twin of a certain person.

So far in short the scientific and medical aspects of stem cell research. What are the ethical issues raised by stem cell research? There are no ethical objections against the use of adult stem cells. This technique can be compared to the use of blood for scientific and therapeutic purposes, a practice no one objects to. The ethical problem lies clearly with the use of embryonic stem cells. The ethical problem is this: The derivation of embryonic stem cells from an embryo destroys the early embryo. A human life is killed at an early stage. Is this killing ethically justifiable? This is the question I will deal in this paper. I will first discuss and reject three arguments which are supposed to show that stem cell research should not be allowed (2.-4.). I will then argue that an early embryo has an inherent worth. Despite the reasons the inherent worth of the embryo provides us with not to use it for research purposes, research on embryos - I will argue - should be allowed. The reasons we have to allow for such research outweigh the reasons which speak against it (5.-7.).

1. A Methodological Remark

Let me begin with a methodological remark. How can the question of whether research on embryonic stem cells is ethically justifiable be decided? I think to answer this question we have to rely on our well-considered moral beliefs. That is to say, whether research on stem cells is morally permissible depends on how the relevant moral beliefs fit with well-considered moral beliefs we hold. It does not depend on any moral belief we hold, rather on stable moral beliefs that survive critical reflection. This is the basic idea of the well-known coherentist picture of the justification of moral beliefs. According to the coherentist view moral beliefs get their justification by fitting well into our web of well-considered moral beliefs. We should start with stable beliefs

about particular cases as well as ways of acting.¹ From there we should try to construct general principles. These principles should be further evaluated in the light of other stable moral beliefs concerning other particular cases and other ways of acting. Do they fit these moral beliefs? Should they be modified in order to fit in our web of beliefs? These are the questions to be asked in dealing with moral issues.

How does the research on embryonic stem cells fare in the light of our well-considered moral beliefs? Let us start answering this question by dealing first with three arguments that are supposed to show that research on embryonic stem cells should be forbidden: a) The argument from identity, b) the argument from potentiality, and c) the argument from humanity. I will then move on to the inherent worth of embryos and then deal with the making of embryos solely for research purposes, and finally with the question of whether therapeutic cloning should be allowed.

2. The Argument from Identity

Adults are beings with inviolable rights. They have a right not to be tortured, a right not to be humiliated, a right to life, a right not to be discriminated etc. And they have of course a right not to be killed for research purposes.

Adults have a history. Their existence began earlier on, not just some hours or some days or some months ago. They were already there years ago. My colleague Norbert studied at the University of Oxford six years ago. He is identical with the person who studied at Oxford six years ago. But when did Norbert start to exist? It was definitely before he was at Oxford.

Some think that person start to exist when they are conceived. If so, Norbert was identical with the fertilized egg that developed into the person who works with me now. But then the following ethical problem arises: It

¹ See Rawls (1971), p. 41 and also Kamm (1993), p. 7.

would be terribly wrong to kill Norbert for research purposes. Provided that he is identical with the fertilized egg in question, it would have been terribly wrong to kill the very early embryo that developed into Norbert. How could it not have been wrong to kill the early embryo, given that the embryo was identical with Norbert? There is no way it could not have been wrong then. If it is wrong to kill Norbert for research purposes and an early embryo is identical with Norbert, then it is also wrong to kill the early embryo for research purposes. Thus, this is what the argument from identity² says:

1. It is wrong to kill person x.
 2. y is identical with x.
- So: It is wrong to kill y.

This means applied to our case:

1. It is wrong to kill Norbert for research purposes.
 2. The early embryo (Norbert) is identical with Norbert.
- So: It is wrong to kill the early embryo (Norbert) for research purposes.

As a consequence, it is wrong to do research on early embryos, because they are all identical with a certain adult. And being a certain adult embryos have inviolable rights, for instance, the right not to be killed for research purposes.

Should we accept this argument? One might argue that persons do not come into existence with conception. Some think that persons start with the formation of the primitive streak, 14 or 15 days after fertilisation. This is the latest stage at which identical twins could occur.³ If this was correct, research on embryos could be allowed up to the first 14 or 15 days of their development.

² See Enskat (2002).

³ See Warnock Report (1984), p. 58-60; see also Ford (1988), p. 170-182.

But I think that an adult is neither identical with a fertilised egg nor with the embryo 14 days after fertilisation. Let us take the early embryo that was supposedly Norbert (during the first 14 days of its development). What does it mean to say that this embryo is identical with my colleague Norbert?

I take it it means that the early embryo (Norbert) shares with Norbert the properties which are essential for what he is. They in fact share the genetic code. Thus the question is: Is Norbert his genetic code? His genetic code is without doubt important for different properties Norbert has. But we would not say that Norbert is identical with this particular genetic code. Other things are essential for what he is: His experiences, his thoughts, his projects, his character traits, his interests, his social relations etc. And with regard to these essential properties the genetic code is nothing more than a necessary condition. Of course, Norbert and the properties which are essential for what he is did not come into existence some days or months ago. His existence goes back further than this. And it seems quite natural to say that it started when he was conceived.

One might of course say that the story of a person started in a way when he was conceived. This is correct if what is meant by that is just the fact that the development of his body can be traced back to his conception (there is a causal story to be told here about the development of his body). But that does not mean that Norbert was already there when he was conceived. His essential properties came as a matter of fact much later into existence: His character traits, his thoughts, his projects, his interests etc. Thus Norbert is not identical with his early embryo, despite the fact that the development can be traced back to the moment he was conceived.⁴

There would only be an identity relation between Norbert and his early embryo, if the two bodies were inhabited by the same soul, that is to say, if a soul was infused into the early embryo (Norbert) at conception or at some

⁴ See also McMahan (2002), p. 29.

point later on. The identity argument makes sense against the background assumption that persons are souls coming into existence at a very early moment in the life of a human being.

This would not necessarily mean that research on embryos should be forbidden. This would only follow if the infusion of the soul took place within the first 14 days of the existence of an embryo. But I think that the soul is neither infused at conception nor at any point later in the development of a person. The difficulties of the idea that there is a soul inhabiting a body are just too serious. Let me just mention the, as I think, most serious one: If the soul is independent of the body and at the same time responsible for the mental life of a person, then how can the mental functions be influenced by things that happen to the brain? As Jeff McMahan puts it:

“(H)ow can we explain the way that mental functioning is invariably impaired by, say, the effects of alcohol on the brain, or physical damage to particular areas of the brain? While the soul must be susceptible to causal influence by the external world in order for perception through the sense organs to be possible, it is more difficult to understand how its basic capacities for cognition, imagination, emotion, and so on could be impaired ... by selective damage to certain areas of the brain.”⁵

It is not clear how this could be possible and as a consequence how a person could be a soul. But if there is no soul, how could the identity of an early embryo and an adult be conceived of? I think that there is no identity to be found here. There is only the continuity of the development of a body which does not amount to the identity of a person.

⁵ McMahan (2002), p. 17.

3. The Argument from Potentiality

The basic idea of this second argument is the following⁶:

Any being that is potentially a person has the right to life.

An early embryo is potentially a person.

So: An early embryo has a right to life.

Should we accept this argument? There is no doubt that a person has a right to life and can therefore not be killed for research or any other purposes. The argument from potentiality claims that a potential person has the same rights a person due to the fact that it is a potential person. Of course, an early embryo is a potential person. It can develop into a person, provided certain conditions are fulfilled. But does this fact carry the moral weight the argument from potentiality is suggesting?

To be a potential person can be taken in four different ways: Potentiality can be understood a) as a logical possibility, b) as an empirical possibility, c) as a probability, and d) as a disposition.

To take potentiality as (a) a logical possibility would be definitely too wide. Any entity, a tree or a stone, has the logical possibility to develop into a person. The sentence “This tree will become a human being” is not false for conceptual reasons; the statement is not self-contradictory. If we take potentiality as (b) an empirical possibility, we are facing the following problem: It is also possible for an unfertilised egg or for a sperm to develop into a person. This is no doubt empirically possible. But if we accept the argument from potentiality and take potentiality as empirical possibility, an egg and a sperm had the same rights persons have. This conclusion would indeed be highly counterintuitive.

The same follows if we take potentiality as (c) a probability. If by

⁶ See Wieland (2003), Damschen/Schönecker (2003).

saying that an early embryo is a potential person we just meant that there is a certain probability that it develops into a person, then an unfertilised egg would also be a potential person. And if we accepted the potentiality argument, we had to assign the same rights to an egg and to a sperm we assign to an adult. But again, this conclusion does not fit with our well-considered moral beliefs.

Gregor Damschen und Dieter Schönecker think that potentiality should be taken as (d) a disposition.⁷ According to them the sentence “An early embryo is a potential person” should be interpreted in the following way: “An early embryo has the capacity to develop into a being with properties that are morally relevant”. For instance, an early embryo has the capacity to develop into a autonomous being. This capacity is already there; it is a property the early embryo already has. It is of course not yet an autonomous being, but it has the capacity to become one. Damschen and Schönecker think that this capacity is a morally relevant property; it is not a potential, rather an actual property of the early embryo. It should be respected, which implies - amongst other things - that the early embryo should not be used for research purposes.

Is this the right conclusion to be drawn? I do not think so. Let us consider the capacity of an embryo to develop into an autonomous person. One has to distinguish between the *capacity to be autonomous* and the *capacity to become an autonomous person*. An embryo has the latter, but not the former capacity. It has not the actual capacity to be autonomous; it has rather the capacity to become an autonomous person. A person who is asleep or unconscious has the former, but not the latter capacity. She is capable of acting autonomously, even though she is not acting so at the given moment. A person who is sleeping has the actual capacity, an embryo rather the potential capacity to be autonomous (it has the actual capacity to become an autonomous person, but not the actual capacity to be autonomous). The

⁷ See Damschen/Schönecker (2002), p. 226.

autonomy of a sleeping person can be respected, the autonomy of an embryo cannot be respected, just because it is not yet autonomous.

One could of course argue that an embryo should be treated the same way we should treat autonomous persons, just because it is a *potential* autonomous being. It could develop into an autonomous being. But an unfertilized egg has also the potential capacity to develop into an autonomous person. Provided that certain things happen to the egg it will become an autonomous person. If so, we should treat the egg the same way we should treat a person. This would be implausible.

And even if this was plausible, from the fact that an embryo could develop into an autonomous person, the conclusion that it should be treated like a person cannot be drawn. Potentiality alone does not transfer the moral rights from an actual x to an x that could become x. Consider the well-known example of Prince Charles⁸: Prince Charles is the potential King of England. It does not follow from this that Prince Charles has the same rights as the King of England. As a matter of fact he does not have the same rights. Let us take another example: A child is a potential adult. An adult has a right to vote. But a child does not have a right to vote. Thus, potentiality alone does not transfer rights or moral status. And thus the argument from potentiality fails. If an embryo has the rights a person has, this cannot be due to the fact that it is a potential person.

4. The Argument from Humanity

Human beings have *dignity*. The UN-Declaration of Human Rights talks about “the inherent dignity... of all members of the human family”.⁹ Some think that this applies to all forms of human life, that is, to early embryos as well as to

⁸ See Singer (1984), p. 120.

⁹ See Gewirth (1992), p. 10.

adults. Early embryos as well as adults are members of the human family. To exclude embryos from the human family, so some argue, would be arbitrary.¹⁰

The concept of human dignity is contested.¹¹ But despite the differences there is a consensus that the dignity of humans is linked with certain *inviolable* moral claims. Thus the German constitution, for instance, says in Article 1: “The dignity of humans is inviolable”. Thus, the related moral claims are inviolable. It is, of course, not clear which claims are meant here. But moral philosophers agree that they must include claims such as the claim not be tortured, the claim not be humiliated, and the claim not to be treated as a pure means to an end (that is, treated in a way that would violate Kant’s famous Categorical Imperative). And if early embryos had dignity, research on them would clearly be morally wrong.

Kant thinks that only persons should be treated as ends in themselves, because they have dignity. According to Kant their dignity is based on the fact that they are autonomous.¹² It is the autonomy of other persons that has to be respected. But not all human beings are autonomous. Early embryos, for instance, have clearly no autonomy. Thus, it is permissible to treat them as mere means to our ends.¹³

But this view cannot be correct. If only autonomous persons had dignity, not only would early embryos have none, but also small children, mentally severely handicapped people and old people suffering from Alzheimer in a later stage. This conclusion would be clearly counterintuitive. Small children have dignity whatever their mental condition might be. But then where should we draw the line? Do human beings start having dignity

¹⁰ See Spaemann (2001), p. 49.

¹¹ See Stoecker (2003).

¹² See Kant (1974), BA 79/80.

¹³ It is not clear whether Kant himself would have supported this conclusion. It is not whether he thinks that dignity is based on actual or in potential autonomy. But of course it is a conclusion one could come to on Kantian grounds.

when they are born or before that when they are 8 or 6 or 4 months old? Or do we have to assign dignity to embryos when they cannot develop into different persons anymore? Or when they were conceived? One might doubt that a non-arbitrary line can be drawn. To avoid arbitrariness one could assign dignity to all forms of human life.

But is this really a good argument? I do not think so. If early embryos had dignity it would not just be wrong to do research on them, it would as a matter of fact be *seriously wrong* to do so. Research on embryos would violate inviolable claims and thus be as bad as the killing of human adults for research purposes.

But this is not the way we really think about these issues. This becomes clear when we consider the following example: If early embryos had dignity the use of contraceptive coils would be seriously wrong, because contraceptive coils kill early embryos by preventing them from entering the woman's womb. But none of us thinks that the use of contraceptive coils is seriously wrong, neither even wrong, not even those who consider abortion as morally objectionable.

Here is another example. If you assign dignity to an early embryo, you have to condemn abortion. Some of us do of course condemn abortion. But even those who do so do not think that an early embryo has the same moral status as an adult. If they did, they had to advocate positions they usually do not. As McMahan rightly puts it:

“If people really believed that the developed fetus has the same moral status as a normal adult, it would be difficult to explain why even most of those who are in general opposed to abortion are willing to recognize certain exceptions to what they regard as the general impermissibility of abortion - for example, in the case of pregnancies that result from rape or incest, or in cases involving fetal deformity, or when the continuation of the pregnancy poses a serious threat to the woman's life or health. It would also be difficult to explain why even most opponents of abortion strongly disapprove of the killing of abortionists

and the bombing of abortion clinics. For even if the proportionally rather small number of abortions performed each year were morally comparable to the murder of innocent children or adults, there would be a strong case for the permissibility of defending further innocent victims by violent means. The shootings and bombings might be reasonable to a practice of widespread, legally sanctioned murder.”¹⁴

To hold the view that early embryos have dignity would be incompatible with many stable moral beliefs we hold. It might be difficult to determine which forms of human life dignity has to be assigned to. But to assign dignity to early embryos would have consequences none of us would really endorse.

5. The Inherent Worth of an Embryo

An early embryo has not the same moral status as a normal adult. But it is not the case that we are allowed to treat an early embryo as we like. Otherwise there would be no explanation available for the fact that most of us think that research on embryos needs ethical justification. It would be hard to find some one who thinks that research on embryos is as unproblematic as writing with a pencil.

An early embryo has no dignity, but it has an *inherent worth*.¹⁵ It has an inherent worth means: We owe something to it. And we owe something to an early embryo due to certain properties the embryo has. Which properties are

¹⁴ McMahan (2002), p. 271.

¹⁵ Inherent worth should be distinguished from intrinsic value. Having an intrinsic value means that there are reasons to value the thing in question for its own sake (or that it is valued for its own sake). A piece of art might have intrinsic value: It should be valued for its own sake not for the sake of something else. But we do not owe something to it. We might be obliged not to destroy a piece of art, but this is not something we owe to the piece of art itself. An entity that has inherent worth should also be valued for its own sake, but in addition to this it we owe something to it. It is an object of our moral concern. See Taylor (1986), p. 75: “The assertion that an entity has inherent worth is here to be understood as entailing two moral judgments: (1) that the entity is deserving of moral concern and consideration ... and (2) that all moral agents have a prima facie duty to promote or preserve the entity’s good as an end in itself and for the sake of the entity whose good it is.”

relevant here? One could say, that an early embryo has an inherent worth, because it is a form of life. Moral philosophers such as for instance Paul W. Taylor think all living beings have an inherent worth due to the fact that they have a good of their own. I will not discuss this position here. All living beings might have an inherent worth. Thus, they are proper objects of our moral concern. But I think most of them are not objects of the same moral concern we owe to embryos. If there was no difference here, research on human embryos would be as bad as the research on bacteria. But this is definitely not what we think. No one would object to killing bacteria for research purposes. What we owe to early embryos is due to the fact they are forms of a *human* life. Being human is something to be respected due to the properties human beings normally have. And here one has to think of properties such as being autonomous, rational, capable of acting for reasons, thinking about the world and other properties more. An early embryo is of course not a human being that has such properties. It just has the potential to develop into a being with such properties. It could become an autonomous, rational, reasonable and thinking being, a being that pursues projects, that cares about his life and the life of others, that falls in love, that has children and so on. It is this potential we have reasons to preserve, provided there are no stronger reasons to do otherwise. The closer it gets to being a person the more weight will it morally have, the more difficult it will be to justify to use it as a mere means to our ends. The inherent worth of an embryo is due to its potential to become an adult. This potential does not provide with dignity, just with an inherent worth. And the inherent worth is something that can be outweighed by other morally relevant considerations.

But what exactly do we owe an early embryo during the first days of its development? It is object of our moral concern: It cannot be killed for no good reason. On the other hand, it has no right to life, otherwise the use of contraceptive pills would not just be wrong, but rather seriously wrong. And

in addition to that, no exception could be made with regard to certain cases of abortion, for instance in cases of pregnancies that result from rape or in cases of severe fetal deformity. Thus, research on early embryos is permissible, provided that we have good reasons to do so. And the promises for new therapies for diseases such as cancer, Alzheimer's disease, Parkinson's disease, kidney failure might indeed be seen as providing us with good reasons for doing research on early embryos.

6. Making Embryos for Research?

One has to differentiate here. It would certainly be more difficult to justify the use of embryos for research purposes which would otherwise be implanted into a woman's womb than the use of embryos remaining after fertility treatment. We would not prevent the latter from becoming persons, because they would be stored and finally destroyed. It seems easier to justify the use of these embryos created by in vitro fertilisation.

But what about making embryos solely for research purposes? The report of the American National Bioethics Advisory Commission (ANBAC) states:

“The primary objection to creating embryos specifically for research is that there is a morally relevant difference between generating an embryo for the sole purpose of creating a child and producing an embryo with no such goal. Those who object to creating embryos for research often appeal to arguments about respecting human dignity by avoiding instrumental use of human embryos (i.e., using embryos merely as a means to some other goal does not treat them with appropriate respect or concern as a form of human life).”¹⁶

¹⁶ ANBAC (1999), p. 5.

And the Commission recommends not to fund such research.¹⁷ The Commission refers to Kant's Categorical Imperative according to which other persons should never be used solely a means to an end. But the question is of whether the Categorical Imperative also applies to early embryos. If it did, no research on embryos would be morally permissible.¹⁸ One could hold the belief that the Categorical imperative only applies to persons who have dignity. If so, research on embryos would be morally permissible.

But making embryos solely for research purposes - one could argue - is a different matter. Where embryos are made for research purposes, it is not just that we treat them as means to our ends, the very reasons they exist are purely instrumental ones. They were brought into existence to serve our ends. This does not apply to embryos remaining from infertility treatment. They were brought into existence for other reasons. In the former case the embryo is treated just like an object. And this is - one might argue - incompatible with the respect we owe to an embryo.

But is this a convincing argument? Making an embryo solely for research purposes is treating it like an object. But killing an embryo for research purposes is also treating it like an object. It can be treated just like an object regardless of whether it is brought into existence in order to serve our ends. Plants and animals can be used as mere means to our ends, even though they were not brought into existence to serve our ends.

I think that there is another reason why should be sceptical about making embryos solely for research purposes. The killing of an entity that has an inherent worth is a bad thing. That is to say, there are reasons not to do it.

¹⁷ ANBAC (1999), p. 5: "Federal agencies should not fund research involving the derivation or use of human ES cells from embryos solely for research purposes using in vitro fertilisation."

¹⁸ The commission thinks that research on embryos remaining after infertility treatment is morally permissible. Here the report of the commission is just inconsistent: If there is a problem with using the embryos as mere means to human ends, then all forms of research on them must be forbidden.

Yet, it might be permissible, because these reasons might be outweighed by the reasons that speak in favour of doing it. This is possible, because an early embryo does not yet have a right to life or a right not to be treated as a mere means to an end. But given that it is nevertheless a bad thing to kill embryos for research purposes, we should reduce doing so to a minimum. One way to do this is refraining from making embryos solely for research purposes and to rely on the embryos remaining from infertility treatment.

7. Therapeutic Cloning

Let me turn finally to the research on embryos generated by somatic cell nuclear transfer in which the nucleus of an adult human cell is introduced into an enucleated human embryonic cell (also known as therapeutic cloning). Should this technique be allowed? Many of those who think that research on embryos created by in vitro fertilisation is morally permissible strongly object at the same time to therapeutic cloning. The ANBAC, for instance, does so, referring to Kant's humanity formula according to which other human beings should never be treated as mere means to an end. But this cannot be the point here. If Kant's humanity formula applies to early embryos, then not just therapeutic cloning and the making of embryos solely for research purposes, but rather all forms of embryo research would be morally impermissible. Embryos are treated as mere to our ends in research independently of whether they are cloned or not. Therapeutic cloning does not treat embryonic stem cells even more as mere means, it is just using them as mere means, in the very same way as all other forms of research on them do.¹⁹ Thus, those who are in favour of doing research on embryos created by in vitro fertilisation, but at the same rejecting therapeutic cloning cannot rely on Kant's humanity formula. They need other arguments.

¹⁹ See also Birnbacher (2001), p. 256.

Some rely on a *slippery slope argument*: Therapeutic cloning should be forbidden, because it leads to reproductive cloning, that is the reproduction of a human being.²⁰ Therapeutic cloning as such might not be morally wrong; reproductive cloning is definitely wrong. And this is the reason therapeutic cloning should be forbidden: It leads to something that is morally wrong.

This argument needs improvement. The claim is that there is a connection between something that is not wrong and something that is wrong. The argument against therapeutic cloning can only be convincing if there is a tight connection between therapeutic and reproductive cloning. The strongest connection one could think of here would be a necessary connection. Once you allow for therapeutic cloning, reproductive cloning is inevitable; you cannot have one without the other.

This would be a very strong claim. One could well think of a situation where therapeutic cloning would be allowed and at the same reproductive cloning forbidden by the law. This is as a matter of fact the legal situation in Great Britain. And there is no reason to think that this situation could by no means be sustained. The claim that there is a necessary connection seems to be too strong. The claim should rather be that there is a high probability that allowing for therapeutic leads to the cloning of human beings. A high probability has to be claimed, because a low probability might very well be acceptable, provided the expected utility of the stem cell research is substantial enough.

Is there a high probability that once therapeutic cloning could be done, reproductive cloning would follow in due course? This is an empirical, not a normative claim. It is difficult to assess this claim, I think even for social scientists, because there is no empirical basis for assessing how likely it is that one technique would lead to the other. There is only one country in the world

²⁰ See Nida-Rümelin (2002), p. 408.

where therapeutic cloning is allowed. And the technique has not yet been really used even there.

What are we supposed to do then? Let me just give you a reason why the two techniques could well be kept apart. Therapeutic cloning promises new cures for different diseases and particularly new perspectives for the transplantation medicine. Cloned cells could develop into organs that are genetically identical with the organs of a possible transplant receiver. This could be of great importance to the transplantation medicine. The problem of the immunological rejection of the transplanted tissue or organ might be solved this way. By comparison it is difficult to see which aims reproductive cloning could serve that are important to us and that could not be served by means we are already familiar with. Those of us who cannot, but who like to have children can get infertility treatments or they can adopt children. Of course, there might be those infertile couples who want to have their 'own' offspring, refusing therefore the adoption of children. And there might be those who like to have their 'copies'. But I guess that this will just be a very tiny minority. In any case, the aims the two techniques serve are different. They differ also with regard to their importance. These are - I think - good reasons to assume, that the two techniques could be kept apart. If so, the slippery slope argument does not succeed. And as a matter of I do not know of any other argument that would succeed in showing that therapeutic cloning is morally impermissible.

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