

The Role of Complicity in the Ethics of Embryonic Stem Cell Research

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1. Introduction

In everyday language, complicity means taking part, in one way or the other, in a crime or wrongdoing done by another person. In general, the role of the accomplice is not strictly of the same quality as that of the main actor or, in legal terminology, of the principal. As a rule it is judged to be of minor gravity. Nevertheless, if the offense is grave enough, the accomplice may be found guilty, in law, as an accessory to the crime, or, in general morality, become the object of moral reproach as standing in a relation to the wrongdoer analogous to that of accessory and principal.

During the last decades, bioethical discussion has considerably extended the scope of the concept of complicity. Quite a number of further semantic facets were added to its standard meaning, making the concept extremely fruitful for a fine-grained ethical analysis of certain moral constellations involving a plurality of agents (cf. Singer 1993, 165 f., Luna, 1997, Friele 2000). These extensions concern weaker kinds of collaboration or collusion with a morally wrong act than the legal concept, in particular practices of making use of the results or products of a morally wrong or morally problematic activity. This kind of "eating fruit from a forbidden tree" is not usually subjected to the same moral criticism as the wrong act itself (henceforth "W"). But "complicity" continues to imply some kind of moral offensiveness. The concept keeps its negative connotation, though the degree to which the wrong of the "accomplice" (henceforth "C") is held to be condemnable is usually significantly lower than that of the act to which it is accessory. Though the act of the "accomplice" is much less grave than the original act, it nevertheless leaves a "moral stain", however weak, on the accomplice.

2. Five types of complicity

Before discussing how complicity is exemplified, under certain premises, by embryonic stem cell research, let us first pass in review the most important of the possible relations that can obtain between W, the wrongdoer, and the "accomplice" C, in the standard and in the extended sense. As far as I see, five types of complicity can be distinguished (Table 1).

Whereas the first variant constitutes the most clear-cut and indeed "classical" case of complicity, complicity in the other variants is more indirect. In variant 2, complicity consists in achieving the goals of an act W that is itself blameworthy but that would not achieve its end without the collaboration of some other agent. C as it were brings the process to the end it was intended for from the start. Whoever knowingly sells stolen goods is not a thief.

However, he completes, as it were, the act of stealing and realizes the end for which, as a rule, the original act was undertaken. The same holds for the seller and the buyer of goods produced under morally problematic conditions, such as children's labour, or, from the perspective of the ethical vegetarian, for sellers and buyers of meat from animals. In these cases, although the fact that there are "accomplices" who realize the purposes for which W is undertaken is not necessary for W, which would constitute an offense in its own right, C is necessary for W to have a point. Furthermore, the "accomplice" is necessary if W is to become a practice and to establish an expectation on the side of the doer of W that he will be able to profit from what he does. In many cases, a general abandonment of C would stop the practice of W. Without the seller of stolen goods, stealing would lose much of its attraction, as would slaughtering animals without meat-eating customers.

	<i>Act constituting complicity</i>	<i>Complicity relation</i>
1	C actively participates in carrying out W	Direct active participation
2	C achieves the end for which W was carried out	Completion of W
3	C contributes to W becoming a practice by encouraging others, including the original agent, to carry out W	Imitation effect
4	C encourages others to become less critical of W (and, possibly, to co-operate with W-doers)	Re-evaluation effect
5	C is, or is seen as, incongruent with the moral rejection of W	Expressive dissonance

Table 1. Types of complicity

In variant 3, complicity lies in the effect C has on the tendency of others to imitate W, either in its own right or because of what can be gained from its direct or indirect effects. By making use of W for positively valued aims, C may encourage others to risk W despite its moral offensiveness, especially if W is the only or the only available means to achieve these aims. Even if W lies in the past, making use of its results has, as a rule, a certain probability to encourage similar acts in the future, where the probability of this happening depends on several factors, among them the publicity of C and the reputation of the agent. A convinced vegetarian with a certain influence on his social environment thereby has an additional reason to abstain from buying meat at the supermarket. Indeed, professed vegetarians like Albert Schweitzer have been rightly criticized by ideologists of vegetarianism for not being consistent in their behaviour given their role as moral models. By breaking the rules they are perceived to stand for they invite imitation and tend to weaken the moral judgements underlying the rejection of W.

In variant 4, this weakening takes a different turn. The role of complicity consists in inviting not an imitation but a re-evaluation of W given its favourable effects. This type of complicity is exemplified by cases in which C is judged to have an influence on the moral evaluation of W irrespective of whether C is thought to have a direct or indirect influence on the practice of W itself. A relevant example is the use of cells and tissues from aborted embryos. It is unlikely that using tissues from aborted embryos has a significant effect on the frequency with which abortions are carried out, and most of the commentators on the practice know that perfectly well. After all, the international guidelines for the transplantation of embryonic neural tissue explicitly demand that the woman's decision to have an abortion be independent from her decision to allow using the aborted embryo for research or therapeutic purposes. Nor is it reasonable to expect that the part played by gynaecologists in abortion is significantly changed by the perspective of using the results of the procedure for

purposes such as the experimental treatment of patients in late stages of Parkinson's disease. In these cases, then, there is again no direct causal relation between C and W. However, putting the results of W to some further use might nevertheless be seen as constituting an act of complicity to the extent that the morally laudable aims of using the results of W might tend to weaken the moral condemnation of W, and thus lower the psychological threshold that now exists for W and similar acts. The reasoning behind this argument is obvious. If W is morally wrong, it must be good that it meets with widespread moral disapproval. It must be bad if the practice of using its results for morally laudable purposes makes it seem more acceptable than it is.

This kind of reasoning seems to have been the basis of the recommendation of the Central Ethics Committee of the Bundesärztekammer, the German Medical Association, in July 1998, in which the Committee declared its opposition to the retrieval of fetal brain tissue for purposes of neurotransplantation. One of its arguments was that this practice might weaken the moral rejection of abortion for non-medical reasons in society at large (Zentrale Ethikkommission, 1998). Partly as a consequence of this, neurotransplantation of embryonic tissue, which started in the early 1990s in Hanover, came to a halt in Germany (later, its problematic success was a further reason not to pursue this line further). However, the reasonableness of this step was doubtful from the start, since the sociological hypothesis underlying the Committee's statement does not seem plausible. Attitudes to abortion are a matter of fundamental moral outlook. It is unlikely that these attitudes will be significantly changed by the recognition that some good may come from evil.

In many ways, variant 5 is the most interesting one. In this case, complicity involves an incongruence, as one might call it, between rejecting W and making use of results which were made possible by W. In this case, even an indirect causal relation between C and W is absent. It need not be assumed, that is, that acts similar to W are encouraged by C or that attitudes will be changed in a way that raises the probability of W being carried out. The complicity relation in this case consists in a purely internal relation between C and the qualification of W as morally objectionable. The conflict is not one between C and its consequences but between C and the beliefs held by the person carrying out C. Ronald Green has adequately described this case as one of "appearance of endorsing, conferring legitimacy on or diluting the condemnation of a wrongful deed" (Green, 2001, 146). There is an obvious incongruence, as one might call it, between rejecting W and using results which were made possible by W. One important additional variable on which the tendency to attribute this last type of complicity depends seems to be the extent to which the person carrying out C *co-operates* with the person carrying out W in using the results or products of the latter's wrongdoing. Using the organs of a murder victim for purposes of transplantation is not seen as an act of complicity precisely because there is normally no co-operation between murderer and transplanting physician. The physician is in no way involved in the act that lead to the transplant, nor is there any kind of contact between the physician and the murderer. The situation is different if the transplants come from prisoners executed in China for political reasons. It is hard to imagine circumstances under which these organs could be made available without at least an indirect co-operation between those interested in making use of these organs and the authorities responsible for the executions. For the overall moral evaluation of complicity, co-operation is at least one crucial factor. The point is that transplanting organs from Chinese political prisoners would seem to be incompatible with an honest moral disapproval of the death penalty for political prisoners, whereas transplanting organs from murder victims seems to be fully compatible with a honest moral

disapproval of murder. Although disapproval of *W* and disapproval of making use of the results of *W* are separate items, they cannot be "isolated" against each other. There remains what might be called an *expressive dissonance*.

Expressive dissonance is largely a symbolic relation. Complicity in this case is primarily something "in the head" and nothing in the "outer world". This is immediately clear when one looks at the controversy, in American bioethics of the 1990ies, about whether results of the cruel experiments carried out in German and Japanese concentration camps during the Second World War should be used in medical research (cf. the contributions of Freedman, Greene, Kor and Segal in Caplan, 1992). The focus of this debate was not the fear that making use of these results might function as an incentive to carry out similar experiments in the future (in the sense of variant 3) or that psychic thresholds against this kind of research might be lowered (in the sense of variant 4), but a purely symbolic relation of incongruence between thought and action, valuation and motivation.

3. Types of complicity involved in ESC research

Complicity in one or more of the variants distinguished above is the core of the criticism levelled against research on pluripotent human embryonic stem cells (hESC) in many quarters and has even, in some countries, become the basis of legal prohibitions. It is clear that hESC research is not *inherently* morally problematic, at least not in ways that are peculiar to this kind of research. Though there is some amount of misunderstanding in the general public on the point, embryonic stem cells are not themselves human embryos and therefore should not be subsumed under the umbrella term "embryo research". Whatever is morally problematic about this research concerns the sources from which the stem cells are derived and the methods by which they are retrieved. Three of these sources and four procedures are held to raise moral problems:

	<i>Type of research</i>	<i>Source of stem cells</i>	<i>Morally problematic procedure</i>
1	Research on human embryonic germ cells	Aborted embryos	Abortion for non-medical reasons
2	Research on hESC	Supernumerary embryos produced in the course of IVF	Destruction of human embryos due to extraction of stem cells
3			Making the human embryo a "mere" means to extraneous ends
4			Generating supernumerary human embryos with the the conditional intention of using them as sources of stem cells
5		Supernumerary embryos resulting from PGD	Selection of living human embryos
6	Research on hESC	Embryos produced specifically for research by IVF or stem cell nuclear transfer	Production of human embryos by nuclear transfer; destruction of human embryos due to extraction of stem cells

Table 2. Sources and methods of the retrieval of hES cells

1. Aborted embryos: In the retrieval of embryonic germ cells, the morally problematic point of the procedure is the abortion for non-medical reasons that precedes the derivation of germ cells. At least a substantial proportion of the population rejects abortion for non-medical reasons. Furthermore, abortion is unlawful in some countries. In German law, for example, abortion in the first trimester is not punishable, but nevertheless unlawful. On the other hand, no further moral problem seems to arise provided that the couple validly consents to the use of the aborted material for research or therapeutic purposes. Although using an aborted embryo or parts of it for research or therapeutic purposes amounts to using it as a means to an end, this is not generally thought to be morally objectionable. The crucial consideration is that the embryo is dead and incapable of further development. The therapeutic use to which the embryonic tissue is put is commonly held to carry enough moral weight to compensate for the lack of piety involved in using the dead embryo as a means to an end.
- 2/3. Supernumerary embryos from IVF: The extraction of hESC from supernumerary embryos exhibits two morally controversial features: the killing of a living embryo by the extraction of the inner cell tissue, and the fact that the embryo is instrumentalized. Since the embryo is utilized for purposes neither related to the preservation of its own life or health nor to its own development, it is used as a "mere" means to an end in the Kantian sense. For this reason, using IVF embryos for the derivation of cells (or, more generally, to do research with them) is legally forbidden especially in countries where either the principles of the protection of human life is understood to cover the complete prenatal period (as Roman Catholicism does) or where the principle of human dignity is interpreted as ruling out "instrumentalizing" the human embryo even in its first stages of development. In addition, the German Embryo Protection Act enjoins that all embryos generated in the course of IVF be transferred to the uterus, thereby precluding that supernumerary embryos are generated with the conditional intention of using them as sources of stem cells.
4. Given the availability of stem cell extraction techniques, a further problem might be seen to arise from the conditional intention to make use of this technique in the course of IVF. This is relevant not only to cases in which supernumerary embryos are generated with the explicit purpose of later using them as raw material for stem cell research, but also when this possibility is accepted as a *potential* consequence of generating more embryos than are transferred to the woman.
5. Pre-implantation diagnosis with selective transfer of IVF embryos is often seen as morally problematic because it involves the conditional intention to let some living embryos perish, i. e. those that prove to be unsuitable for implantation in the course of genetic diagnosis. Selection of offspring is, in bioethics as in the general population, often rejected out-of-hand, irrespective of context and purpose. There is a widespread tendency to associate selection of offspring with "eugenics", which by itself is predominantly used with a negative connotation. It is interesting, in this context, to contrast selective procedures such as pre-implantation diagnosis (PGD) with germ-line intervention. Even if practised for the same purposes, both procedures have a completely different *gestalt*. The *gestalt* of germ-line intervention is that of doing something good to something living, whereas the *gestalt* of selection is that of a test by which the right to life is reserved to whatever meets certain criteria. A similar contrast can be drawn with pre-natal diagnosis (PND). Though it might be said that the physician's role as a "gatekeeper" to existence is common to PGD and PND, whoever

holds a strong principle of human dignity will see an important difference between the two methods: the fact that PGD involves a higher degree of selectivity than PND. In both cases a choice is made, but the choices are of different sorts. In PND, there is a choice between yes and no, acceptance or non-acceptance, whereas the choice involved in PGD is of a "pick-and-mix"-kind, a selection of the best candidates out of a larger collective. Therefore, PGD might be seen as "instrumentalizing" embryos to a higher degree than PND. It is, therefore, no accident that according to the German Stem Cell Law, the permission to import hES cells from countries in which the extraction of hES cells from embryos is legal is restricted to embryos produced from IVF without the additional employment of selective techniques such as PGD.

6. Specific-for-research embryos: This procedure is often seen as posing moral problems of an even higher gravity than the above two procedures. In this case human embryos are not only killed and instrumentalized, but are explicitly generated in order to be instrumentalized for research or therapeutic purposes. This further step is widely held to constitute an additional and independent moral problem. The intention of generating human life solely for purposes other than for development to maturity is, in this case, unconditional and unavoidable. Although it cannot be excluded that the same unconditional intention may be present in some cases in which supernumerary embryos are generated in IVF, there is an objective difference between the procedures. While in IVF reproductive purposes are dominant (no matter what further intentions come in), reproductive purposes are explicitly ruled out in research cloning. In consequence, the production of embryos by nuclear transfer is illegal even in many countries in which hES cell derivation is legal.

It should by now be obvious that hESC research involves the researcher in quite a number of complicity relations with the procedures seen as morally problematic by many. The first variant of complicity is involved whenever a researcher directly participates in the extraction of stem cells from embryos (resulting in their death) or participates in generating embryos by nuclear transfer. The first variant of complicity is also exhibited by instigation. Instigation is present whenever the researcher makes others carry out these procedures with the (unconditional or conditional) intention to use the products or the results of these procedures for research, his own or other's. In this case, he is not himself directly causally involved in carrying out the procedures, but nonetheless acts as one of the causally necessary conditions of their being carried out by others. Instigation implies that – at least in the normal course of events – the procedures would not have been undertaken but for the intervention of the researcher. A paradigm case is the "ordering" of hES cells for research from countries in which retrieval of these cells is legal.

In contrast to this "strong" variant of complicity, the other, weaker variants of complicity are ubiquitous and are characteristic of the relevant research activity even in countries in which the extraction of hES cells is illegal. All kinds of hESC research depend on the availability of material derived from embryos, and some kind of co-operation, possibly mediated by third parties, seems inevitable, with the physicians carrying out the abortion and with other physicians or biologists extracting stem cells from blastocysts. Complicity of some kind seems unavoidable. However, that the one variant of complicity is illegal in these countries whereas the others are not, is in itself an interesting fact and throws light on the compromise character of the permission to do this kind of research. On the one hand, one does not want to stay behind other countries in this line of research. On the other hand, one wants to pay tribute to the moral conviction of those sectors of the population who are strictly against the

use of human embryos, however, indirect, in research. There are many forms these compromises may take. Mostly they exclude certain kinds of complicity (for example the use of hES cells generated by procedures 5 and 6 in the above list) but allow others that are seen to be more acceptable (such as sources 1 and 2 in the above list). It is clear, however, that all procedures involve one or more variants of (weak) complicity.

Research on embryonic germ cells (1) presupposes that an abortion has been carried out for non-medical reasons. Even if the mother decides on the abortion independently of the decision to make the aborted embryo available for research such an abortion is unlawful in many legislations (even if not punishable) and is regarded by many people as morally problematic if not worse. Though the researcher who makes use of the cells derived from the embryo does not actively participate in the abortion he inevitably stands to it in a complicity relation that, from the perspective of those with strong moral reservations against abortions, confers part of the blame to him as the one who profits from it. Though his purposes are quite different from the purposes of the original wrong (and possibly morally neutral or even meritorious) he participates in an overall constellation that is predominantly morally wrong (cf. Vawter 1991). Furthermore, the more his purposes are morally laudable, the more he risks imitation and re-evaluation effects.

Research on hESC retrieved from supernumerary embryos (2-4) involves complicity at least in sense 2 in all cases in which the research is carried out in a country (like, at present, Germany or Italy) in which derivation of hES cells is illegal but in which importing hES cells is legal under certain conditions. As a rule, further variants of complicity are involved at the same time. Thus, though the German Stem Cell Law rules out that research activities in Germany are directly causal for the derivation of hES cells in countries with a more liberal legal situation by instituting a "Stichtagsregelung" similar to that established by President Bush in the US which provides that imported hES cells must be already available at the point of time at which they are "ordered", it cannot prevent that these cells are extracted by those who provide them with, among others, an intention to sell them in the future to researchers in countries where derivation is illegal. Furthermore, the expectation that the "Stichtagsregelung" will be handled in a sufficiently flexible way to allow future imports has considerably grown since the German Bundestag decided on extending the "Stichtagsregelung" in a way that allows researchers to buy updated cell lines in order to keep abreast of new international developments. Thus, though the Law effectively rules out complicity of type 1, the active participation of German researchers in the killing of human embryos by the extraction of hES cells in the form of instigation, it is unable to rule out complicity of type 2. Even in the absence of a direct causal relation between W and C, carrying out the research means to achieve the aims for which W was done in the first place. Whether complicity of type 3 and 4 are also present in this case, depends on the success, or rather the expected success of the experimental use of hES cells. Apart from the growing scientific interest of hESC research, especially as a model serving as a measuring rod for the potentialities of induced pluripotent human stem cells, therapeutic uses in humans have not yet become visible and are increasingly seen with scepticism, not least because of the considerable risks of cancerogenity and the risks that transplanted hES cells will be rejected by the host organism.

Analogous considerations apply to the two remaining forms of hESC research, research on hESC retrieved from supernumerary embryos by others in the context of PGD (5) or produced by nuclear transfer (6). In both cases, complicity comprises additional factors whenever not only the extraction of hES cells from embryos is seen as morally wrong but

also the methods by which the embryos are produced. The fact that (5) and (6) are explicitly ruled out, e. g. by the German Stem Cell Law shows that not only considerations of direct or indirect causal role enter into the legal response to these procedures, but also considerations of complicity. The legal situation is only adequately understood if, besides the strong form of complicity (variant 1), the weaker forms of complicity are taken into account.

4. When does complicity amount to a "moral stain"?

Complicity can amount to a "moral stain", but this is not necessarily so. In general, certain further conditions must be fulfilled in order to make complicity with a morally problematic act itself a problematic act. Since whether an act is morally problematic is not a yes-or-no-affair but allows of degrees, the discussion of these factors gives us an opportunity to see on what the extent to which an act of complicity seems condemnable depends.

In the following I will, for reasons of simplification, make two presuppositions:

1. I will only refer to acts that constitute weak complicity (variants 2-5). Whereas complicity in its strong sense (1) is an established topic in action theory and in the philosophy of law, it is exactly these weaker meanings of complicity that stand in need of philosophical elucidation.
2. I will take it as understood that the purposes to which the act constituting complicity is carried out are not only morally neutral but morally good purposes and that the act in question has a reasonable chance to achieve these purposes. Unless one of these conditions is fulfilled there is no real moral conflict. (There might, however be a legal or even constitutional conflict, e. g. with the fundamental right of researchers to free inquiry.) If, for example, hESC research were carried out with highly problematic intentions (e. g. for reasons of biological warfare) or had absolute no chance to achieve any of its scientific or therapeutic aims, the (potential) complicity of this research would not constitute the problem it in fact is. The research would have to be viewed with scepticism even in the absence of complicity.

On which factors does the intuition of a "moral stain" from complicity depend? Which variables are crucial for the perception that making use of bad practices of others for good ends is in some way morally tainted? I have already referred to the fact that it seems to be an inherent feature of the concept of complicity that complicity can only be attributed to an act C if the agent stands in some kind of co-operative relation to the original wrong W. It seems impossible, for example, to ascribe complicity to the various uses of pharmaceuticals that were developed in the past under circumstances that by modern standards would be morally unacceptable. Many standard medications were originally tested under conditions in which, for example, the requirement of informed consent in human subjects research was more or less unknown. It might be asked, however, whether this condition is also fulfilled in cases exemplifying the "weakest" variant of complicity in which the connection between W and C is mainly of a symbolic nature. I think, however, that even in these cases, some kind of co-operation between the agents involved is necessary for complicity even though this relation may be thin and indirect. In cases in which the relation is too thin to constitute even an indirect form of co-operation the concept of complicity seems to become inapplicable, for example, if a researcher makes use of the results of morally indefensible experiments published fifty years ago. The situation is different if he makes use of unpublished results of morally indefensible experiments as an employee of the same company that carried out the experiments. In this case there is a tighter relation of co-operation, mediated by the identity

of the company and the exclusive nature of the relevant information. This gives us one of the criteria on which the perceived moral significance of acts of complicity seems to depend, the perceived extent of co-operation involved in using the "fruits of a bad tree". The perception of complicity is considerably weakened if no co-operation at all is necessary to get the desired information or products, as in the case of the published scientific results of morally indefensible experiment, or if *W* lies in a psychically remote past so that the process of tradition is no more regarded as co-operative even in a thin way.

Another factor, of at least the same importance, seems to be the relation between the extent to which *W* is morally unacceptable and the extent to which *C* is morally desirable. The intuition of complicity seems adequate only if there is an obvious disproportion between these factors. Complicity can be present only if there is a clear imbalance between the moral badness of *W* and the moral goodness of *C*, however good and bad are weighted in this kind of balancing. (Some ethicists, for example so-called prioritarian utilitarians think that the bad should systematically carry more weight than the good, in accordance with widespread popular moral perception.) Apart from this systematic point of dissent, even more dissent is to be expected about where to strike the balance between good and bad and whether, in individual cases, the good to be expected from *C* is at all able to compensate for the evil of *W*. A striking example of such dissent is presented in the contributions to Arthur Caplan's book on the question whether the results of concentration camp experiments should be used in medical research. In this case, opinions were sharply divided between former victims (and their descendants) on the one hand, and researchers and doctors interested in having unrestricted access to these results (see, e. g. Kor 1992, 7 versus Freedman 1992, 147ff.). This question was already inconclusively discussed during the Nuremberg trials in 1946 (cf. Friele 2000, 127).

If the bad done by *W* is balanced by the good done by *C*, or if the good done by *C* clearly outbalances the bad done by *W*, attributions of complicity are, as a rule, absent. For example, complicity is no issue in the context of importing organs explanted in countries with an opting-out regulation into countries in which this regulation is rejected. The reasoning is clear. Even those who seriously, and for moral reasons, object to the opting-out system do not feel that the moral blemish of this system is weighty enough to restrict the exchange of transplants, say in the Eurotransplant network in which two countries with an opting-out regulation are co-operating partners. The moral stakes of transplantation are simply too weighty to fuss about the "deviant" system of organ procurement in neighbouring countries. An imbalance is, however seen to exist in the case of countries in which organs are commercialized or in which regulation and control of organ procurement are held to be inadequate. Even in these cases, however, the willingness to fight commercial organ procurement is limited in view of the situation of the organ buyer. The German Transplant Law, for example, contains an explicit mitigating clause that considerably lowers the probability that the buyer will be held to be punishable if he is identical with the patient needing the organ.

Concerning this criterion, the situation in hESC research is controversial and fundamentally unclear. There is controversy both about the extent to which the practice of making use of early human embryos as providers of stem cells is morally problematic and about the extent to which the prospects of hESC are thought to be sufficiently favourable to justify a positive overall judgement on this line of research. At the extremes, opinions are diametrically opposed. Scientists and physicians, even if not directly or indirectly involved in hESC research, typically judge the moral opprobrium of embryo research to carry, if at all, less

weight than the moral prospects of ESC research. Representatives of the Christian churches, especially Roman Catholics, give more weight to the morally objectionable features of embryo research and are more sceptical of the prospects of hESC research. A further factor is that scientists tend to give significantly more moral weight to basic research than the Churches and their followers. This is an important factor since the justification of hESC research on the part of research organizations has recently considerably shifted to the scientific side. The more the potential therapeutic applications of hESC research recede into a far and uncertain future, the more this research is defended by its scientific rather than by its therapeutic merits.

5. The status problem – once again

The crucial factor in the differing assessments of hESC research continues to be the so-called status problem, the problem of the measure of protection owed to the human embryo. On the view that the embryo is due the same protection that is owed to newborns, say, extraction of stem cells from blastocysts is a serious crime, indeed murder. On the view that the embryo is due no or only minimal protection, the balance will, as a rule, go down on the side of research and no problem of complicity arises.

There are two respects in which the status problem is involved in judgements of complicity in hESC research that should be clearly distinguished: protection of life and dignity. The derivation of hES cells from human embryos constitutes a violation of the principle of sanctity of life, understood in a sense that comprises all phases of human existence, in each of the specific forms it may assume, and exactly to the same degree. With dignity, understood as a comprehensive principle of non-instrumentalization, this is different. It is relevant to all methods mentioned above, but in different degrees. Extracting stem cells from PGD embryos is commonly seen as a more objectionable violation of the principle of human dignity than extraction of stem cells from supernumerary embryos from IVF because it involves selection, and the same holds for the retrieval of stem cells by research cloning because it constitutes the production of a human being with the only purpose of destroying it and using its parts as a means to an end. Protection of life and dignity differ in other respects as well. Though both are components of the "status" of the embryo, taken together in the expression "status problem", they exhibit a very different logic and, to the extent that they are applied to prenatal human existence, are far from being correlatives. A "right to life" may be thought to admit of grades, whereas this seems impossible with dignity. An embryo either possesses dignity or not, whereas its right to life may be thought to be negotiable against other kinds of goods and other rights. And not all violations of a potential prenatal right to life are necessarily violations of dignity. Abortion is clearly a violation of a potential embryonic right to life, but it is a violation of dignity only if dignity is interpreted as implying a right to life, an interpretation that is by no means the only one possible. On the other hand, manipulations of the embryo for research purposes might be seen as violations of its dignity even if the embryo is not thereby destroyed or damaged. There are, then, good reasons to keep the issues of protection of life and the protection of dignity separate and discuss both issues each by each.

Are there reasons for an embryonic *right to life* sufficiently strong to dominate the good that comes from hESC research? I take it that the most plausible conception of prenatal protection of life is a gradualist conception according to which the "right to life" of the embryo/foetus is a matter of degrees, starting at a very low value and then gradually rising

until it reaches its peak at the time of birth. As this rising curve may be drawn in very different ways, this conception is really a bundle of conceptions and not strictly one. But this bundle is held together by the fundamental idea that the duties owed to the human embryo are not a constant but correlated with the developmental stages of the embryo, with the later stages requiring more protection than the earlier ones. It is true, this general conception has not so far been theoretically explicated in any systematic form. It is hard to deny, however, that it is implicit in most of the normative views about the status of prenatal human existence both in bioethics and in general morality. For example, the embryo is nearly always held to be less worthy of protection in the first few days of its existence than in later stages (see, e. g., Veerger et al. 1998, 11), a fact that is of some relevance in the discussion of the disparity in the legal handling of prenatal diagnosis with subsequent selective abortion on the one hand and of pre-implantation diagnosis with subsequent selective implantation on the other (cf. Birnbacher 2007). Furthermore, gradualist thinking is clearly mirrored in most criminal codes by the apportionment of punishments for taking the life of embryos and fetuses. In many legislations, termination of pregnancy within the first 14 days of gestation is not punishable, as well as the destruction or non-implantation of IVF embryos before the conjunction of sperm and egg cell though they have the same potential to become full-fledged human beings under suitable conditions as embryos in the full sense. Finally, abortion is nearly everywhere punished to a significantly lesser degree than infanticide or manslaughter/murder.

All this is plainly incompatible with a constant-protection view like that of the Roman Catholic Church that ascribes the same right to life to the embryo/foetus in all stages of development, either in the form of a right not be destroyed by interventions from outside or even in the sense of a right to be saved from death by natural causes. A constant-protection view is usually based on a potentiality principle in conjunction with an identity principle according to which any human embryo has a right to life that has the potentiality to develop into a fully developed human being and (in order to exclude pre-conjunction embryos) is numerically identical with this being. Such a strong principle does not seem at all plausible. The reason for this is that a potentiality argument in the case of humans would only be plausible if it were plausible in the general case, i. e. that it would be true that if x has the right to life, a potential x has a right to life not only for humans but for any organism whatsoever. It does not seem plausible, however, that such a general principle can be accepted. A bird's egg or the shoot of a tree are both potential birds or trees, but I do not think it acceptable that they have the same moral status as fully developed birds and trees. Normative properties of organisms like the possession of rights are supervenient properties. They supervene on certain descriptive properties of these organisms. As the human embryo shares only some of the properties of a born human being, it shares only some of its normative properties. In the same gradual way the embryo/foetus acquires the properties of the born child, so it gradually acquires its normative properties, among them a right to life that is only fully developed at a rather late stage of gestation, with viability or birth.

Apart from that, the combination of a strong potentiality principle with the identity principle according to which a potential x shares the normative properties of the actual x seems to imply that even the pre-conjunction embryo should be ascribed a right to life simply because potentiality implies identity, with the consequence that the principle of identity cannot serve as a limiting principle, restricting the right to life to the fully developed embryo. If the embryo that will become x is identical with x , then the pre-conjunction embryo that is to become this embryo is also identical with x . Even it is not

identical with the future child as a human being, it is identical with the future child under some broader concept, for example as an assemblage of organic matter. The consequence is that even the pre-conjunction embryo should have a right to life. This is not only highly implausible, it is also plainly incompatible with the legal practice in countries that prohibit the destruction or non-implantation of IVF embryos but permit the discarding of cryoconserved pre-conjunction embryos that have been fertilized but are not used for implantation.

According to a gradualist view (or rather: the variant of gradualism I would like to suggest, there may be others), there is, then, no real problem of complicity in hESC research as far as a purported right to life of the embryo is concerned, provided that the conditions stated above are met: that some good is to be expected from this research and that the hopes accompanying this research cannot be discarded as illusory. The reason is that the extraction of stem cells which is often taken as the crucial ethical stumbling block of this research takes place in a very early stage of embryonic development, within a few days after fertilisation. According to a gradualist conception of embryo protection the protection of life due to the embryo at this stage is minimal. This is in agreement with the legal practice of most societies which do not sanction abortions (e. g. by abortive pills) in the first two weeks of gestation or, as in the German criminal law, posit a legal definition of abortion that excludes abortion within the first two weeks of development to count legally as abortion.

This is not the end of the matter. Even if the complicity attributed to hESC research cannot plausibly be based on arguments pertaining to the life of the embryo from which the stem cells are taken, there is another dimension of the protection of the embryo to be considered, the dimension of *dignity*. It is an essential and uncontested component of the concept of dignity that dignity excludes what may be called total instrumentalization, i. e. dealing with a human being like a thing or a commercial good, like in slavery or in forced labour. Though dignity is a normative dimension clearly distinguishable from the protection of life, dignity is compromised most blatantly whenever instrumentalization (making someone a "mere" means to extraneous ends) takes the form of the deliberate taking of the life of someone in order to achieve ends that have nothing to do with the ends of the person sacrificed. Sacrificing the life of a person for the ends of others seems a particularly clear case of a violation of the dignity of that person, and this is reflected in many military laws that prohibit sending soldiers on missions on which they are certain to lose their lives however clearly these missions would serve important strategic ends. On the same line, the German constitution which makes human dignity the highest and even non-negotiable constitutional value and imposes on the state a similarly non-negotiable obligation not only not to violate but also to actively protect the dignity of all human individuals is commonly interpreted as excluding any "sacrifice" of the life of one person for the life (or other fundamental goods) of others, with the exception of cases in which the life of an innocent victim can be saved only at the expense of the life of the perpetrator of the crime by which he has been made a victim. The question arises whether the destruction of human embryos for the sake of the retrieval of stem cells is not exactly an exemplification of this kind of "sacrifice" of one life for the lives of others, or, more realistically, for the scientific and remotely therapeutic purposes by which hESC is currently justified. Since the principle of human dignity is rapidly gaining ground at present and is increasingly introduced into constitutions and into international treaties and conventions the resistance to hESC is much more to be expected from this quarter than from that of the protection of embryonic life. An additional reason why resistance is to be expected on grounds of human dignity rather than on grounds of the

sanctity of life is the pragmatic one that restrictions on account of instrumentalization are feasible whereas restrictions on account of sanctity of life are not. It does not seem possible to abolish abortion whereas it is perfectly possible to close the door to new developments in biomedicine such as hESC research, PGD, and human cloning.

6. Do human embryos possess dignity? The German debate on hESC research

A characteristic feature of German bioethics and especially of German biopolitics is the outstanding role assigned to the principle of human dignity in biopolitical debate. One of the reasons for this is the distinctly Kantian character of the German constitution. The reference to Kantian principles was seen as a common denominator on which the politically strongly heterogeneous parties to the founding assembly of the *Bundesrepublik* in 1949 could find a consensus. Moreover, the principle of dignity which had just been introduced as a leading principle into the Universal Declaration of the Rights of Man by the United Nations in 1948, was seen as a safeguard against tyranny and particularly against the atrocities of the Nazi regime from which most members of the assembly had suffered in one way or other. Since then, the principle of respecting human dignity laid down in article 1 of the German constitution became a kind of creed that had an important supporting function for the cohesion and identity of German society. However, while the parties deciding on the wording of the constitution were strongly divided over the question whether human dignity (and the fundamental right to life) is to be understood in an inclusive sense, comprising prenatal human forms of existence alongside with the existence of born human individuals, the Constitutional Court and, subsequently, constitutional law increasingly made the inclusive interpretation the standard interpretation and held the principles of dignity and of protection of life to be applicable to prenatal forms of existence in roughly the same way as to born individuals. Though there is, at the moment, an unmistakable tendency in constitutional law to revise this interpretation and especially to re-interpret the principle of human dignity in such a way that it cannot further function (because of its non-negotiability) as an effective check on embryo research and the introduction of reproductive technologies such as single-embryo transfer and PGD, a majority of politicians continue to think that the principle is incompatible with the use of human life as a means to an end in all possible forms, irrespective of the stage to which human life has developed.

According to this view, the moral necessity to preserve and to protect human life starts with the conjunction of egg and sperm. However, all controversial practices in reproductive medicine at present discussed in law and politics involve, in one way or another, "instrumentalizing" early human life. Pre-implantation diagnosis and pre-implantation sex selection involve the selective discarding of unwanted blastocysts, retrieval of stem cells involves the destruction of blastocysts, research cloning even the production of human embryos with the explicit intention to destroy them at a later stage. These practices, therefore, cannot be justified as forms of well-intentioned paternalism. In all cases, human life in its early forms is made a means to ends other than the life or well-being of the embryo concerned, no matter how important and respectable these other ends may be. Furthermore, the introduction of any one of these new methods is seen as a potential door-opener to embryo research, which in itself is a realistic perspective, given that the physicians practising pre-implantation diagnosis in the context of a University clinic will hardly be

satisfied with practising it without making it at same time the object of research, not least to improve its success rate.

The ethical premises underlying this stance are essentially two: 1. The concept of human dignity applies to prenatal human life in the same way as it applies to postnatal human life. 2. The principle of the protection of human dignity applies to prenatal human life with the same force as it applies to postnatal human life, i. e. it is as little negotiable against other rights and obligations as it is in its application to human beings at a postnatal stage.

Both premises have a relatively firm backing in law. The first premises was confirmed in the second judgement of the Constitutional Court on abortion in 1975. One of the famous quotes from this judgement is that "human dignity is a property of human life wherever it exists". Not human *persons* (in whatever sense of "person"), but human *life* is the proper object of protection in the name of human dignity. The second premise is a more or less undisputed principle of constitutional law. Differently from the other basic rights formulated in the Constitution, including the right to life, the right to protection of human dignity is absolute and non-negotiable. It has to be given a *minimalistic* interpretation in order to prevent that conflicts of basic rights become ubiquitous. These two premises taken together do not seem to leave much room for alternatives. The Embryo Protection Act with its strict verdict on "instrumentalizing" human embryos, for research or other non-reproductive purposes, seems a more or less logical conclusion from the constitutional situation.

It is not surprising that the legal situation has been a major factor in the estrangement between biopolitics and bioethics in the field of beginning-of-life issues. Bioethical discussion has throughout been much more open than biopolitics and biolaw to arguments in favour of liberalisation. In bioethics, and especially in secular, non-theological bioethics, the nearly absolute ban on embryo research and on the consumption of embryos for non-reproductive purposes has rarely been upheld with the same strictness as it has been upheld in politics and law. When, in 1990, the Embryo Protection Law was passed by the Bundestag, it came as a surprise to most bioethicists, since bioethical discussion had already moved quite a long way from the moral extremism of the Roman Catholic Church. Even the so-called Benda commission that had been investigating the ethical and legal issues of reproductive medicine prior to the Embryo Protection Act (and which did not consist of particularly "progressive" experts) had held embryo research to be permissible within limits. There are basically two groups of bioethicists in Germany who are not prepared to follow the Constitutional Court in its application of a strong principle of human dignity to human embryos regardless of their stage of development. A minority of bioethicists has raised doubts about the very possibility of applying the concept of human dignity to prenatal human life. According to this opinion, human dignity is primarily a political and social concept, a "Kampfbegriff", guiding the struggle against such practices as torture, slavery, capital punishment, and the persecution of racial, ethnic or religious minorities. Its historical roots are located essentially in the emancipation movements of the Enlightenment and in the workers' movement of the 19th century, with the double focus on personal autonomy and social security. Its main content is identified as liberty, non-discrimination, social rights, and such elements of self-respect as freedom from humiliation and persecution. This concept, in consequence, is simply not held to be relevant to practices such as embryo research and embryo selection which affect human life at a stage at which it is neither sentient nor capable of aims which might be frustrated by political or social pressure.

Another group of bioethicists thinks that the principle of human dignity *is* applicable to prenatal human life, and even to the early human embryo, but that in this context it has neither the same *sense* nor the same *force* as the concept that is applied to born human beings. According to this opinion, the Constitutional Court's mistake is to treat the concept of human dignity as univocal. There is not one, but a family of interrelated concepts, each one having its own domain and its own peculiar force. There is, first, the *strong* concept applying to born human beings, which indeed may be treated as non-negotiable for practical purposes. (Theoretically, it remains possible that one is forced to choose between two atrocities each of which violates human dignity.) It comprises a number of basic rights such as minimal liberty, minimal self-respect, and basic social services. This concept is central to modern democracies and an undisputed achievement of the secular emancipation process started by the Enlightenment. This strong concept, however, is not relevant to human embryos, at least not to the temporal stages which are affected by the practices under discussion.

Apart from this strong concept of human dignity this group of bioethicists recognize two other, derivative concepts of human dignity: a *secondary* concept which applies to everything human in the biological sense, irrespective of its stage of development or decay, and a *generic* concept which applies to the human species as such and which is often invoked in non-consequentialist arguments against such practices as the production of man-animal-hybrids and reproductive cloning. Both concepts are considerably weaker in normative force and differ from the strong concept semantically and syntactically. While human dignity in its primary meaning needs an individual subject as bearer, this is not necessary with the two derivative concepts. With them, there need not be a real subject to correspond to the grammatical subject. This is evident where human dignity is applied to the species as such, but it is also the case in its application to human zygotes and early embryos, entities that cannot reasonably be assumed to be "real subjects". With human dignity in its primary sense the object of respect and protection is the concrete human being. With human dignity in its derivative senses it is something more abstract: humanity, human life, or the identity and dignity of the human species defined by its specific potentialities.

According to this second position, which is taken by the present author, human dignity is in fact applicable to the early embryo but in a different and specific sense in which it does not carry the quasi-absolute moral force of the primary concept. Prenatal human life deserves respect, but not the absolute respect an adult person deserves. It deserves respect because it is a form of specifically *human* life, irrespective of whether it is viable or not, whether it is destined to be discarded anyway (as most "spare" embryos from in-vitro-fertilisations are) or whether there is some chance that it will develop into a full-blown human being. What is important, however, is that this respect is a *weak* form of respect which is not incompatible, as the respect owed to born human beings is, with treating embryos as a means to an end, provided these ends are themselves sufficiently respectable. The basis of this respect is straightforward speciesism, or, to use a more sympathetic term, "generic solidarity". It is one of the forms by which a feeling of unity with everything human is expressed, no matter how this feeling of unity is philosophically construed, in a deep, metaphysical way, or in an everyday, naturalistic way. One of the implications of this concept is that it applies independently of whether the human being in question is among the living or the dead. Human corpses qualify as objects of this kind of weak respect no less than human embryos. In this way, the close link that has been established between the principle of human dignity and the principle of "sanctity of life" is weakened. Respect for

human dignity, in its secondary sense, is a principle different from that of respect for life, even if respect for life is one of the forms by which respect for human dignity can be expressed.

7. Conclusion

Does this mean that complicity is, after all, not really a problem in the controversy about hESC research? In fact, for those on the pro-side, complicity does not seem to be a real issue because they generally do not think that embryo research is sufficiently problematic to conflict with what they see as morally desirable in the development of new therapies and in basic research. For those on the anti-side, on the other hand, complicity does not seem to be an issue either, because they condemn the embryo manipulation preceding hESC research and are less optimistic on the side of therapeutic prospects and less enthusiastic on the side of the intrinsic moral value of scientific research. They do not need to confront the complicity problem because they are up against hESC research anyway.

Complicity is a problem only for those who are torn between the conviction that embryo research is (for intrinsic or extrinsic reasons) a moral evil and the conviction that hESC research is worth pursuing either for its medical or for its scientific prospects or both. The class most likely to face this uncomfortable dilemma is the class of conservative politicians in countries such as Germany and Italy in which embryo research is strictly prohibited by law, but in which hESC research is nevertheless permitted or even encouraged, although only with raw material imported from countries with more permissive laws. For these politicians, complicity is, and should be, the stumbling block lying in the way of pragmatic compromise.

This result is only one of the facets of the deep gulf that separates bioethics from biopolitics. This gulf depends on the fact that biopolitics follows, and has to follow, criteria which go far beyond the criteria of bioethical judgement. A solution to a bioethical problem may be ethically and rationally acceptable without being politically acceptable. There are at least two other criteria that have to be satisfied. First, biopolitical solutions must conform to certain procedural norms. They must have been arrived at on the basis of accepted democratic procedures. There is no guarantee that solutions arrived at in this way are in full conformity with the norms of intellectual rigour, coherence and adequacy to which bioethicists are professionally committed. Second, the solutions found by politics have to take into account pragmatic considerations such as conserving social harmony, which again may conflict with considerations of ethical adequacy. Biopolitics cannot contradict public opinion to the same extent that bioethics can. If it does, it risks losing the acceptance of substantial sections of the population. Since biopolitical problems often touch quite fundamental ethical and religious beliefs, these risks are substantial. As a rule, political decisions will have to be taken in a way that allows even those whose attitudes and interests have been deeply frustrated, to accept the decision, at least in principle. In a pluralistic society, this means that political decisions touching deep convictions will often assume the form of compromise solutions by which none of the parties concerned is fully satisfied but which nevertheless minimise the net sum of frustrations on all sides.

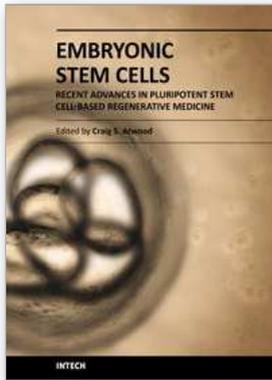
As far as Germany is concerned, legislation with regard to beginning-of-life issues has throughout followed the policy of committing itself to rather strong principles in order to satisfy the adherents of "pro-life" positions, and to make room, at the same time, for a wide range of exceptions in order to satisfy the adherents of "pro-choice" positions. More

concretely, the strategy of satisfying both sides at the same time and by the very same law has consisted mainly in officially condemning a practice more strongly than it has been condemned before, and at the same time extending the availability of the practice so that all those who might benefit from it have free access to it. This is illustrated not only by the German abortion law but also by the Stem Cell Law. The abortion law declares abortion during the first trimester to be illegal, thus satisfying the adherents of the "pro-life" position on abortion. At the same time it exempts it from penal sanctions, thus enabling pregnant women to have an abortion in the first trimester even for trivial reasons. A similar strategy is followed by the Stem Cell Law. On the one hand, it is stricter even than the Embryo Protection Act in regulating not only the retrieval of stem cells in Germany (which continues to be illegal) but also the use of imported stem cells legally retrieved in other countries. At the same time it does not only make room for research with embryonic stem cells in Germany, it also reduces the possibility that this kind of research might be restricted by ethics committees and internal review boards. The law's demand that a special ethics commission be installed to control stem cell research with imported stem cells partakes of the same dialectic characteristic of the law as such: On the one hand, it expresses the political will to have a particularly keen eye on whether stem cell research is conducted in an ethically defensible way. On the other hand, the functions of the commission are reduced to a purely symbolic one. The commission is given no discretion to reject a submitted research protocol that is scientifically sound. Its function is merely to examine whether the protocol is scientifically plausible and whether the stem cells have been imported by the ways specified by the law. There is no room for restricting research with stem cells for genuinely ethical reasons. Thus, the law is a good example of what has been called "symbolic politics". It shows the political will to promote stem cell research in Germany. At the same time, it expresses this will in a way that misleads pro-lifers into thinking that legal control in a sensitive and controversial field of research is tightened rather than loosened. The price to pay for this kind of political compromise is a considerable lack of transparency and consistency. This is a high price because transparency is a central democratic virtue. It prevents that a policy is understood and found to be intelligible by the general population. In biopolitics, compromises seem inevitable. At the same time, they inevitably seem to involve some form of moral opportunism.

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Pluripotent stem cells have the potential to revolutionise medicine, providing treatment options for a wide range of diseases and conditions that currently lack therapies or cures. This book describes recent advances in the generation of tissue specific cell types for regenerative applications, as well as the obstacles that need to be overcome in order to recognize the potential of these cells.

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