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Contested change: how Germany came to allow PGD[☆]

Bettina Bock von Wülfingen

Institute of Cultural History and Theory, Faculty of Humanities and Social Sciences, Humboldt-Universität zu Berlin, Unter den Linden 6, 10099, Berlin, Germany

E-mail address: bettina.bock.v.wuelfingen@hu-berlin.de.



PD Dr Bettina Bock von Wülfingen is Associate Professor at the Institute for Cultural History and Theory at the Humboldt-Universität zu Berlin. Her recently finished second book *Economies and the cell – conception and heredity around 1900 and 2000* treats the interrelation of instruments, background beliefs and models in heredity and reproductive sciences in the 19th and 20th centuries. She did her doctoral thesis, published as 'Genetisierung der Zeugung' (transcript) with a discourse analysis on the health and illness notion in discourses on new reproductive and genetic technologies and published intensely on historical and recent cultural and epistemic aspects of reproduction.

Abstract Until recently, German laws protecting the human embryo from the moment of conception were some of the strictest internationally. These laws had previously prevented any manipulation of the embryo, such as in preimplantation genetic diagnosis (PGD), and continue to affect stem cell research. In 2011, however, the German parliament voted in favour of allowing PGD in specific cases. While the modification in the law in earlier analysis was interpreted as being in keeping with the usual norms in Germany, this article argues instead that the reasoning behind the partial acceptance of PGD, rather than the legal decision itself, is indicative of a sociocultural change that needs to be accredited. Demonstrating that a significant change occurred, this article analyses the arguments that led to the amendment in law: not only has the identity of the embryo been redefined towards a pragmatic concept but the notions of parenting and pregnancy have also changed. The focus on the mother and the moment of birth has given way to a focus on conception and 'genetic couplehood'. The professional discourse preceding the decision allowing PGD suggested that the rights of the not-yet-implanted embryo should be negotiated with those of the two parents-to-be, a concept that may be called 'in-vitro pregnancy'.

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Introduction

Until recently, German laws protecting the human embryo from the moment of conception were some of the strictest internationally. The German situation has been called 'unique and contradictory' (Krones and Richter, 2004: 625), as the relatively liberal German position on the termination of pregnancy seems to contrast with the strict protection of the embryo *in vitro*. As reported in the international media, the German parliament, where majorities had previously been against preimplantation genetic diagnosis (PGD), voted on 7 July 2011 to allow PGD in Germany (Deutscher Bundestag, 2011a). With this ruling, Germany became one of the last remaining European countries, but the first German-speaking country, to allow PGD in principle. However, the ruling permits PGD only in specific cases of severe illnesses that are genetically detectable in the embryo (Bundesgesetzblatt, 2011).

On a superficial level, this change came about alongside a legal decision: on 6 July 2010, the German Federal Court received a request from a gynaecologist for a decision on various PGD treatments that he had administered in 2005 and 2006 to couples known to carry predispositions that would severely affect the fetus or child (Bundesgerichtshof, 2010). The gynaecologist had diagnosed the existence or non-existence of these predispositions in IVF embryos after growing them to the eight-cell stage and removing one cell in order to perform the diagnosis. He then transferred only those embryos that did not show the incriminated monogenetic effect.

According to the common-sense view at the time, including the interpretation of the German Medical Association that defines the binding rules for medical practice (Gerst, 2004), these treatments breached several laws and regulations. In 2010, the German Federal Court, however, ruled in favour of the physician, interpreting the procedures that had been carried out not as breaches of the law but rather as being in accordance with it.

Previous analysis of the legal shift followed the argument of the German parliament (Deutscher Bundestag, 2011a) and claimed that this partial acceptance of PGD signified no real change in the German situation. Such interpretations argue that the legal shift merely confirms the concept of the 'embryo-as-person' in Germany, as Valkenburg and Aarden (2011: 462) believe, instead of abandoning or fundamentally challenging it. It could also be asserted that this partial acceptance of PGD does not demonstrate any real change in (medical) culture or in the social understanding of human life, as this was an inevitable small step in the slow evolution of a European country emulating its neighbours.

This article argues that a thorough analysis of relevant expert documents leads us to a different conclusion, namely that the German concept of the embryo and the idea of parenting underwent a fundamental transformation between 2003 and 2011. The main argument of this article is therefore that in contrast to earlier claims we do indeed observe a change in Germany regarding PGD.

This article shows that the reasoning behind the partial acceptance of PGD, rather than the legal decision itself, is indicative of such a change. Not only has the identity of the embryo been reconstructed: it moved away from concepts according to which the embryo intrinsically comes into being

endowed with pre-given full human dignity, to theories relativizing the embryo's rights according to specific factors. The notions of parenting and pregnancy have also changed. The focus on the mother and the moment of birth has given way to a focus on conception and 'genetic couplehood' (Prainsack and Siegal, 2006). With an accompanying change in the understanding of pregnancy termination, a new concept of 'in-vitro pregnancy' emerged in Germany.

In the methods section below, key terms by the jurist and legal philosopher Horst Dreier are introduced as the analytical framework employed in the document analysis. The results section that subsequently follows is divided into three parts. Change, by definition, means a difference in the state of a phenomenon at different points in time. When change in the underlying values is involved we refer to a change not as an accidental one but rather as a cultural change. In order to explicate the change in Germany, and present the core argument, the situation reflected in articles and documents from around the year 2000 and from around 2010 are compared and analysed. The first part of the results chapter discusses the results regarding the prevailing situation before the change, i.e. the history of what I call the 'categorical' embryo and the Embryo Protection Act, culminating in the decision of the German parliament against an amendment of the Embryo Protection Act in 2003. Categorical in this case means (with an intended allusion to Kant) 'ruling in any case without exception', so that the embryo is gifted with human dignity at any stage and circumstance. This corresponds to the dowry theory unwrapped in the following. It contrasts a pragmatic approach that relates the rights of the embryo to needs and rights of others and/or that distinguishes between different stages of embryonic life. The second part presents the examination of the material produced by medical and legal institutions in the decisive years before 2011 in the process leading up to the German parliament's decision in favour of PGD. This second part also explains differences between the two episodes in the ways of decision taking. While this second part focuses on the change of identity of the embryo, the third part links the latter to findings regarding a change in parenting. It argues that the in-vitro situation attained a status comparable to the in-vivo situation. In the discussion section it is suggested that these reconceptualizations can be understood as part of the introduction of the idea of 'genetic couplehood' (Prainsack and Siegal, 2006), contributing to the situation in which the rights of the conceiving couple are negotiated with those of the embryo.

Materials and methods

This study is a document analysis based on professional, parliamentary and academic writing published by national physicians' organizations, in parliamentary protocols, expert philosophical statements on PGD and local legal records.

In order to more specifically differentiate between the various concepts of the embryo appearing in the analysed material, the terminology 'dowry', 'capacity' and 'communication theory' have been applied in the analysis. These terms were first presented by the jurist and legal philosopher Horst Dreier (Dreier, 2004) and help to analyse different ways of conceptualizing the embryo in this article. Dreier assesses the rights of the embryo by distinguishing

between the following theories of the embryo. The dowry theory states that an embryo is unconditionally endowed with human dignity from the moment of the fusion of the nuclei or from the point of nidation, without qualification and without the option of balancing it against any other value. In contrast, the capacity theory makes human dignity dependent on specific capacities developed by the embryo, such as a central nervous system, and is typically prevalent in other countries such as the UK, the Netherlands or Scandinavia (Kirejczyk, 1999; Mulkey, 1994). In Dreier's description of constitutional rights, he presents a third (potentially additional) option, which is often present in British pragmatist work on the embryo, namely the communication theory. The communication theory describes rights not as qualities intrinsic to an individual or bound to its capacities but as the result of the social acknowledgement of specific claims, negotiated in the related community. According to this theory the community balances the status of the *nasciturus* against the status of those who are related to it.

Dreier's categories, established in and derived from earlier legal discourse, neatly fit the differences we can make out in the changing positions in Germany and correspond to what I call the categorical embryo on one hand and the pragmatic on the other.

Results

Regulation of assisted reproductive technologies in Germany: the categorical embryo

The Embryo Protection Act (EPA) was passed in 1990 when, following the introduction of IVF, society was confronted with embryos that were not located in the uterus for a period of their development and were therefore seen as in need of protection. The first and second clauses of the EPA were the most important in the debate surrounding assisted reproductive technology and the above-mentioned legal shift. The first clause forbids the fertilization of an egg cell with any aim other than to transfer it to a woman's womb (Bundesministerium, 2011), whilst the second forbids any use of an embryo other than to preserve it. Clause 8 defines an embryo as a fertilized egg cell with the capacity to develop from the moment of the fusion of the nuclei. Additional clauses prohibit any other use of egg cells donated for such purposes and also surrogate motherhood.

The introduction of the EPA left many questions unanswered, such as how a medical practice providing IVF treatment could ensure that no 'surplus' embryos were produced. In their IVF guidelines, the German Medical Association interpreted the law as stating that the same number of embryos must be produced as would be transferred. This resulted in the 'rule of three' (Waller, 2011) where up to three embryos could be produced in one cycle and all be transferred (Bundesärztekammer, 2006), leading to the much-discussed rise in triple pregnancies and related early births in Germany (Labahn, 2003).

Until very recently, it was broadly understood that the most common form of PGD internationally was forbidden in Germany (Kollek, 2002; Schwinger, 2003; Valkenburg and

Aarden, 2011), leaving only the option to carry out polar body analysis of a recently fertilized egg cell.

A polar body is a minuscule haploid cell attached to the egg cell that is generated as part of the development of the egg cell. This extra cell later disappears. Polar body analysis profits from a legal loophole, as practitioners carry out the technique after the sperm has entered the egg but before fusion of the egg cell nucleus with the nucleus of the sperm at which point it is defined as an embryo in German law. Polar body analysis only provides information about the state of the egg cell, which helped advance the critique of the legal situation. Medical practitioners in Germany have argued that the ban on selecting embryos with a higher chance of live birth interferes with the quality of their service (Labahn, 2003).

Repeated attempts by different professional organizations and individuals, including pharmacists, physicians and researchers, to replace the EPA with less restrictive regulations (Deutscher Bundestag, 2008a, 2008b) were accompanied by a change in government policy: at the turn of the century, then-Chancellor Gerhard Schröder sought to develop Germany as a favourable location for the biotech industry.

Germany held a fundamental public debate on (reproductive) biomedicine between 1999 and 2001 (Braun, 2005; Braun and Schultz, 2010; Bundesärztekammer, 2000; Herrmann, 2009). The above-mentioned problems with German regulation of assisted reproductive technology were evoked with growing force, and a change in German policy looked likely around 2000.

Meanwhile two commissions with conflicting perspectives on PGD were established: firstly the German Parliamentary Commission on Law and Ethics in Modern Medicine, which was initiated by the German parliament, reflected the parliament's position and was made up of members of parliament and appointed experts. After two years of work, the final report recommended keeping the EPA in place. Many members even favoured an explicit prohibition of PGD to close existing interpretative loopholes in the EPA (Frommel, 2002; Ludwig et al., 2001). Secondly, the German Chancellor appointed a National Ethics Council in June 2001, which in contrast to the Parliamentary Commission included public representatives and experts. Its report in 2003 recommended legalizing PGD in severe cases (Nationaler Ethikrat, 2006).

It was in this context that delegates at the 105th Annual German Medical Association in 2002 voted against an amendment of the EPA and for a ban on PGD by 91 votes to 82, despite criticism of the existing law from within its own ranks (Bundesärztekammer, 2011). The delegates insisted that PGD had little chance of medical success and that its legalization could moreover have severe social effects (Schmidt, 2003). Similarly, in 2003, the German Parliament voted against amending the EPA (Deutscher Bundestag, 2003). Valkenburg and Aarden quoted a 'person closely connected to policymaking' as commenting in 2005 that he 'did not foresee any change in the legal status of PGD for at least the next 10 years' (Valkenburg and Aarden, 2011: 462).

In all these decisions the arguments revolved around the categorical protection of the embryo as being the obstacle to PGD. The categorical protection, in Dreier's terms, embodies the dowry notion of the embryo. This approach sets no preconditions for its protection and does not therefore distinguish between embryos at different stages. As a result,

all human embryos are viewed as equal to one another and to any other form of human life (clause 8 of the EPA). This has meant that the rights of the embryo ‘against all odds’ have sometimes conflicted with those of its prospective parents (Krones and Richter, 2004: 628).

The categorical EPA therefore contrasts strongly with a more utilitarian approach. In the debate on the EPA between 1999 and 2003 a position employed politically during the discussion on new reproductive medicine regulations was that arguments brought up by more pragmatic discussants that tried to weigh the suffering of adults against consideration for a structure of several cells were not productive, because of German memory of oversteered rationalism and relativism with regard to the value of any human life under Nazism. Apart from the protection of traditional concepts of the family, the feminist perspective on PGD – which sees it as ‘medicalizing’ women, similar to any technique involving IVF (Augst, 2001) – was also mobilized to argue against PGD (Krones and Richter, 2004: 629). What is more, Germany tends to allow new technologies to be tested in other, more ‘adventurous’ countries before they are introduced in Germany (Jasanoff, 2005). The Kantian notion of human dignity, which prohibits selling or enslaving man, as well as the dictum that a human being cannot be reduced to a means to achieve aims other than those chosen by itself, can also be considered as a historical background to the categorical approach to embryos (Jasanoff, 2005).

Six years later in June 2011, however, the German Medical Association voted in favour of a change in the law to enable PGD, with 204 out of 250 delegates voting in favour and 33 against (Bundesärztekammer, 2011). The German Academy of Science, the Leopoldina (Diedrich, 2011), and the Ethics Commission of the German Society of Pediatrics (Nentwich, 2011) followed shortly, and finally on 7 July 2011 the German parliament voted in favour of legalizing PGD in specific cases. Members of parliament had put forward three options: to explicitly prohibit PGD in all cases (Deutscher Bundestag, 2011b); to allow PGD in cases of a high risk of a stillbirth or a very short life for the child (Deutscher Bundestag, 2011c); or to allow PGD in very specific circumstances for those couples who could pass on severe, incurable illnesses to their child (Deutscher Bundestag, 2011d). Votes in favour of the intermediate solution of permitting PGD in cases of severe incurable illnesses numbered 306, whilst 228 opted for complete prohibition (Deutscher Bundestag, 2011d). What had happened between 2003 and 2011 to bring about this decision?

New embryonic identities

As stated at the beginning of this article, apparently the first step to trigger the shift towards acceptance of PGD was the court case in 2010 based on the voluntary disclosure of a gynaecologist who had performed PGD (Bundesgerichtshof, 2010). Although this was unlawful according to earlier interpretations of the German Embryo Protection Act, the German Federal Court decided that the PGD performed by the gynaecologist was within the law.

The first shift made by the German Federal Court was to draw an analytical distinction between an embryo consisting of totipotent versus pluripotent cells. Whilst all embryos

or fertilized egg cells were previously endowed with the same status from the moment the nuclei fuse, the Federal Court now drew distinctions between different types of human embryos in the laboratory context: distinguishing between an embryo consisting of totipotent cells, on which diagnostic procedures were not permitted, and an embryo consisting of pluripotent cells. The court found that the gynaecologist in the above case had performed the diagnostics on a pluripotent cell taken from the embryo; hence this cell itself would not be able to develop into an embryo on its own. The court focused on the outcome of the pregnancy (Bundesgerichtshof, 2010).

Legal analyses that simply focused on the act of diagnosis on the embryo (Bundesärztekammer, 2011: 1449) had usually considered PGD to be in breach of the (categorical) EPA because PGD implied de-selecting between individual embryos to induce a pregnancy. Up until 2010, this was the dominant position in German legal discourse. Alternative legal analyses that focused on the *outcome* of PGD, i.e. pregnancy using a ‘suitable’ embryo, instead saw PGD as a *means* to this aim (Deutsche Gesellschaft für Medizinrecht, 2005; Dorscheidt, 2010; Günther et al., 2008; Schreiber, 2000; Ulsenheimer, 2008).

In the above case, the court ruled that the defendant acted to induce a pregnancy in the person from whom the egg cells stemmed (Bundesgerichtshof, 2010). They ruled that the case did not conflict with the second paragraph of the EPA because the embryo had not been used for any other purpose than to induce pregnancy (*ibid.*).

Similarly, the vote by the German parliament in favour of PGD in specific cases was accompanied by a comprehensive change in the identity of the embryo. A few months after the German Federal Court’s decision, the German Medical Association issued a memorandum on PGD. This memorandum firstly differentiated an extracorporeal embryo, which it called ‘human life’, from humans in the proper sense of ‘human beings’ (Bundesärztekammer, 2011: 1451; similar position in Beckmann, 2009: 37ff.; Bioethik-Kommission, 2005: 52f.; Kreß, 2009: 169ff.). In the past two decades, this distinction has become increasingly important in international debates on stem cell research, but before the early years of the new millennium it did not play any role in Germany, where the categorical approach dominated.

Secondly, the German Medical Association differentiated between embryos in different stages of development. Discussing the fact that ‘positively’ diagnosed embryos would not be further cultivated in PGD, the German Medical Association applied a capacity concept to the embryo, i.e. it has to be able to fulfil specific tasks or have specific qualities: the memorandum explained that because epigenetic reprogramming was not yet finished in an eight-cell embryo, it had not yet acquired individuality nor the prospect of subsequently forming an identity (Bundesärztekammer, 2011). The rights of an eight-cell embryo should therefore be considered differently to those of a later embryo.

Taken together, the difference between the position of those involved in regulation before and after the decision by the German Federal Court could be viewed as a change from the dowry theory to the capacity theory, to use Dreier’s categories (Benöhr-Laqueur, 2011; see also Rolf, 2009: 69; Dreier, 2004: Art. 1).

Together with the change in the identity of the embryo, we observe a difference regarding regulation.

In this case, the decision process differed from the usual German slow process of first having a parliamentary ethics commission, which after a long procedure advises the parliament, where elected members take decisions. Instead here, the German Federal Court obliged parliament to change the law in a specific way (Bundesgerichtshof, 2010). This is a much more flexible way of initiating regulation and more typical to the civic epistemology we find in the US (Jasanoff, 2005).

Furthermore, values that had previously been used to help reach a decision on reproductive medical procedures were replaced by other values. As outlined above, in the Kantian view, until recently the selection and deselection of embryos with the aim of inducing pregnancy was seen as the use of an embryo for a 'means' (which is the word used by the German Federal Court) to achieve something that it did not choose itself. This time this dictum was not viewed as an obstacle but was apparently replaced by attaching greater value to complying with the parent's wish to have a child conceived entirely with their own gametes. This means a change in the role of medical treatments.

The latter indicates that not only the embryo changed identity between 2003 and 2011, but also the process of parenting itself, as will be explored in the following.

The identity change for parenting: the extension of the in-vivo to the in-vitro pregnancy

In its 2011 memorandum, the German Medical Association argued that if basic rights for the protection of human dignity were extended to the in-vitro embryo, it would be necessary to weigh these against the basic rights of the parental couple. According to the dominant position in legal literature at the time, the latter was to be given a higher priority (Bundesärztekammer, 2011: 1453f.). Indeed, contemporary German bioethics literature also suggested that prohibiting PGD would infringe the basic rights of the parents (Hufen, 2010: 140ff.; Weschka, 2010).

Weighing the rights of the embryo against those of the parents corresponds to the communication theory. Previously, in Germany the communication theory had only been applied to so-called conflict of interest cases between a pregnant woman and the embryo in the context of terminating a pregnancy. The German constitution does not set out the basic rights of the in-vivo, pre-nidation embryo (Bundesverfassungsgericht, 1975; Bundesverfassungsgericht, 1993); induced abortion is an issue only included in the German Criminal Code (Bundesverfassungsgericht, 1975, 1993).

In the contemporary medical discourse, a comparison between the situation of the embryo with respect to abortion rights and the situation of the in-vitro embryo was unavoidable, as PGD would merely prevent a 'probational pregnancy' and forestall a conflict situation after prenatal diagnosis (Hepp, 2000; Loewenich, 2008: 408ff.; Woopen, 1999).

German prenatal diagnostic regulation has indeed created a situation where in most cases of 'positive' findings, women, when confronted with the expectation of a child with special needs, do exercise their right to a medically defined 'late'

abortion. Danger to the mother's life including her psychological well-being, attested by a medical doctor, can prevent her from being punished for abortion (Bundesgesetzblatt, 1995). Until recently, common-sense interpretation of German abortion law deemed that:

not self-determination, but the impossibility of saving the life of the embryo against the will of the woman in the unique situation of pregnancy [was] [...] put forward as the main reason for the justification of abortion. Abortion is retrospectively not considered as a right of women to refuse the birth of an unwanted child, but as a situation comparable to the killing of somebody in an emergency situation when one's own life is in danger (Krones and Richter, 2004: 625).

Therefore, abortion was until recently not comparable to PGD in the German context, and legal discussion on the law surrounding pregnancy terminations seemed to have overcome the early criticism that their co-existence implies a legal contradiction. However, this understanding has also changed.

That said, in the 1990s the 'right of self-determination' also appeared in the debate on pregnancy terminations especially with regard to children with high care needs (Augst, 2001). In PGD, this right of self-determination is transferred to the parenting couple of the in-vitro embryo: 'The ethical balancing of interests has to regard the rights to protection of the pre-nidation embryo as well as the right of self-determination of the mother and her partner' (Bundesärztekammer, 2011: 1451).

It is implied in the above reconceptualization that the embryo needs to qualify for nidation, and in the German context, this idea signifies a fundamental change in the relationship between the embryo and parent.

The concept of pregnancy is brought forward before the point of implantation, to the moment of the idea of conception, genetic consultation and fertilization. In this way, the father is also brought into a co-expectant role alongside the mother. According to recent discourse, this relationship change brings both parents into a potential conflict of interest with the embryo *in vitro*, which is also now seen, as indicated above, more as a form of 'human life' than a 'human being', making it easier to see that the parents' rights should outweigh. With this conflict of interest, it becomes conceivable that not all in-vitro embryos produced in IVF may be transferred. Under the communication theory, the rights of parents and the potential child are weighed up against one another. Whilst previously the 'dogmatic' in-vitro embryo always had the superior right to be born, now applying the communication theory, the basic rights of both parents are considered in relation to those of the embryo.

Some authors objected and suggested that it was necessary to differentiate between the more problematic situation of a physical relationship between a pregnant mother and the in-vivo embryo on one hand and the seemingly less problematic situation between (potential) parents and their in-vitro embryo on the other (Graumann, 2004). In the period of change after 2010 this latter argument was rejected by the German Society of Pediatrics and Adolescent Medicine, which argued that to deny that conflict existed in any situation where pregnancy is intended

but not yet established was 'not convincing and is instead seen as a formality' (Nentwich, 2011).

The following concluding discussion brings the different results together and analyses their more general meaning regarding the relations between actors in reproduction and regarding their regulation.

Discussion

As said in the beginning, earlier analysis of the German decision in favour of PGD in specific cases came to the conclusion, that this partial acceptance meant not real change. In contrast this article aimed at showing, that a significant change in the understanding of the role of the different participants in PGD took place in Germany.

Scholars are correct to contend that the decision to accept PGD did not mean that 'the conception of "embryos-as-persons" [was] abandoned overnight' (Valkenburg and Aarden, 2011: 462). Rather, the sophisticated and complex question at the centre of the argument concerned the underlying biological definition of what qualified an entity as an embryo in a bioscientific sense. Any phenomenon called an embryo would have – as a result of the German definition of the human in relation to the status of the embryo – similar basic rights to (born) humans, in the sense of the species and biological self-identical organism, instead of 'as a (potential) person'.

Consequently, the terminological distinction between the fertilized egg cell and the eight-cell stage embryo and more specifically the cells that it is composed of mark the change in the German Federal Court's approach to the embryo: it is one element of a shift from a categorical to a pragmatic approach that introduces elements of the capacity theory. The distinction between different embryonic stages, in which the embryo consists of totipotent or pluripotent cells, finally connects the German Embryo Protection Act to the stem cell debate, a connection already made in other countries but one not previously present in Germany due to the prohibition of work on embryonic material produced on German terrain.

The decisive step towards a pragmatic conceptualization of the embryo was made by applying the communication theory. This fundamentally lessens the usual strictness of the German position, making it more similar to countries that decide based on specific stakeholders' needs, instead of categorically following predetermined norms.

The arguments put forward in favour of PGD by the medical professional organizations and the court also reconceptualize the relationship between family members in in-vitro conception that had hitherto been taken for granted or defended.

The state did previously only apply the communication theory in criminal law (§218 regarding abortion), referring to embryos in terms of the physical relationship between the mother and embryo by virtue of pregnancy. As this is seen only as a formal distinction we can now speak of 'in-vitro pregnancy', with similar consequences without this physical connection. Furthermore, with genetic couplehood, the rights of the embryo now no longer concern the mother alone but are negotiated ('communicated') between at least three parties: the state speaking for the embryo, the mother and the father.

Previously, the responsibility for decision-making as to whether or not to have a child was connected solely to the potential mother, who was legally defined as the one who 'gives birth' to the child (Bock von Wülffingen, 2012b). In this definition, the mother's internal physical connection and bodily nurturing as the traditional 'blood relation' were privileged, as well as the moment of birth over the moment of conception (thereby excluding donors of embryos or egg cells). All this now conflicts with the idea of 'in-vitro parenting'. Parenting meanwhile also shifted towards conceptualizing and planning life, shifting the state's interest in defending the rights of the embryo towards 'communicating' the latter's rights with those of the parents, who, according to Strathern's anthropological analysis of the situation in the USA (Strathern, 2005), as mental creators own and can dispose of their embryo.

In the final discussions of the conference *Between Policy and Practice: Interdisciplinary Perspectives on Assisted Reproductive Technologies and Equitable Access to Health Care* at the Foundation Brocher (2015) participants from different countries around the globe stressed the rising importance currently given to the couple over the individual in the reproductive discourse, especially regarding regulations of infertility treatments. Remarkable in the material discussed above is the change in the valorisation of the couple as a genetic community.

The term 'genetic couplehood' may help to explain the concept of the parental couple's self-determination in relation to the embryo *in vitro* in German PGD. Prainsack and Siegal (2006) introduced this term to distinguish 'somatic selfhood' (Rose, 2001: 18), a term usually employed in relation to an individual, from 'genetic risk [...] as a matter of genetic jointness' (Prainsack and Siegal, 2006: 17). The concept of genetic couplehood arose from their analysis of Dor Yeshorim, a genetic testing programme established in 1980 focusing on the 'genetic compatibility' of prospective couples in Orthodox Jewish communities in Europe, the USA and Israel. Dor Yeshorim seeks to prevent particular autosomal recessive diseases, that is, diseases that only present themselves in a couple's offspring if both parents are carriers of the same disease. The authors of Dor Yeshorim stress that unlike any other genetic testing programme, in Dor Yeshorim the tested individuals never receive individual results but only the analysis of their genetic combination. Instead, in the case of PGD in Germany, in the genetic counselling both individuals receive results of their respective tests. PGD in cases of a known specific 'joint genetic fate' is based on genetic couplehood since 'genetic couplehood signifies the genetic identity that goes beyond the individual and occurs when two people are about to "become one flesh". Genetic identity is therefore seen as the "joint fate" of a couple, instead of an awareness of individual genetic "risks" or "advantages"' (Prainsack and Siegal, 2006: 26). Although in the case of Dor Yeshorim the embryo does not yet exist, it is anticipated in the intention to conceive. The couple's genetic identity will therefore not necessarily materialize.

The similarity between both cases lies in the 'joint fate' of the couple's genetic material. In both cases, the very idea of conceiving together induces genetic acts, on one hand preconception testing eventually resulting in preventing conception, on the other the realization of conception, which due to a different understanding of 'joint fate' seems impossible to

prevent at first sight. However, the latter may be changed through medical intervention. Genetic couplehood, understood as 'joint fate', is given much more credibility in German discourse on PGD than in Dor Yeshorim, as here the joint fate is allowed to materialise at least up to the eight-cell-stage.

Similar to Dor Yeshorim, in the case of PGD in Germany the couple's joint genetic risk is the reason for conducting the genetic analysis. The situations differ as in Dor Yeshorim the analysis is performed on prospective parents. In the event of a negative prognosis for the couple, the community aims to break off the engagement. In contrast, with PGD in Germany, IVF cycles including genetic analysis of the embryo are initiated when the couple present to a doctor with knowledge of their joint genetic fate. Genetic couplehood in Dor Yeshorim and in the German medical system has different outcomes. Dor Yeshorim questions the couple's legitimacy to reproduce while in the non-religious German IVF context the couple's love for each other is 'sacrosanct' (Bourdieu, 1997) and needs to be supported (Bock von Wülfigen, 2012a). With PGD in Germany, the status of the couple and of genetic couplehood in the eye of regulators representing the state is such that it is the quality of the embryos that must adapt to the needs of the genetic couplehood and not vice versa.

That all these arguments successfully channelled into a change of law became possible by the departure from the usual civic epistemology and ruling in Germany in this occasion: the shift in the German understanding of the embryo from a categorical and dogmatic view towards a more flexible one came hand in hand with a change in the decision-making procedure with respect to who may define what is an embryo and dispose of it. Instead of directly lobbying parliament to change the EPA, a court decision was used to adapt old law to a more complex reality and to force parliament to act.

Conclusion

As the discussion of results shows, the developments in Germany examined here are indicative of a change in the way in which the state regulates the handling of embryos. This change is not random nor insignificant as it entails a change in the underlying values that are equally relevant for future decision-making procedures in health regulation. Not only has the identity of the embryo been redefined towards a pragmatic concept but the notions of parenting and pregnancy have also changed. The focus on the mother and the moment of birth has given way to a focus on conception and 'genetic couplehood' (Prainsack and Siegal, 2006). The professional discourse preceding the decision allowing PGD suggested to negotiate the rights of the not yet implanted embryo not with the mother alone but with both of the parents to be, a concept that we may call 'in-vitro pregnancy'. In the in-vitro pregnancy both (potential) parents are equal before the law. In terms of equality in access though, in keeping with the in general strict EPA, the state privileges only those specific parent's rights over those of the embryo, who show the incriminated genetic indication. This *de facto* unequal treatment of parenting couples in Germany (together with the advancement of genomic screening, leading to ever-more detrimental monogenetic effects being detectable), gives an

indication of an increase in the number equal-rights debates in the field of assisted reproductive technology to come.

References

- Augst, C., 2001. Verantwortung für das Denken. Feministischer Umgang mit neuen Reproduktionstechnologien in Großbritannien und der Bundesrepublik. *Jahrb. Krit. Med.* 34, 135–156.
- Beckmann, J.P., 2009. Ethische Herausforderungen der modernen Medizin. Beck, München.
- Benöhr-Laqueur, S., 2011. Rezension. *Ethik Med.* 23, 257–258.
- Bioethik-Kommission des Landes Rheinland-Pfalz und Ministerium der Justiz Rheinland-Pfalz, 2005i. Fortpflanzungsmedizin und Embryonenschutz. Ministerium der Justiz Rheinland-Pfalz, Mainz.
- Bock von Wülfigen, B., 2012a. The Fruit of Love: the German IVF-embryo turning from abject into Bio-object. In: Vermeulen, N., Tamminen, S., Webster, A. (Eds.), *Bio-objects: Life in the 21st Century*. Ashgate, Aldershot, pp. 137–150.
- Bock von Wülfigen, B., 2012b. Leihmutter. In: Körper, N. (Ed.), *What can a body do? Praktiken und Figurationen des Körpers in den Kulturwissenschaften*. Campus, Frankfurt am Main, New York, pp. 166–171.
- Bourdieu, P., 1997. The forms of capital. In: Halsey, A.H., Brown, P., Lauder, H., Wells, A.S. (Eds.), *Education, Culture, Economy and Society*. Oxford University Press, New York, pp. 46–58.
- Braun, K., 2005. Not just for experts. The public debate on reproductives in Germany. *Hastings Cent. Rep.* 35 (3), 42–49.
- Braun, K., Schultz, S., 2010. a certain amount of engineering involved': constructing the public in participatory governance arrangements. *Public Underst. Sci.* 19 (4), 403–419.
- Bundesärztekammer, 2000. Diskussionsentwurf zu einer Richtlinie zur Präimplantationsdiagnostik. *Dtsch. Arztebl.* 97 (9), 525–528.
- Bundesärztekammer, 2006. (Muster-)Richtlinien zur Durchführung der assistierten Reproduktion, Novelle 2006. *Dtsch. Arztebl.* 20 (2006), A 1392–A 1400.
- Bundesärztekammer, 2011. Memorandum zur Präimplantationsdiagnostik (PID). *Dtsch. Arztebl.* 31–32, B 1449–B 1456.
- Bundesgerichtshof, 2010. Pressemitteilung Nr. 137/2010 vom 7.6.2010: Die Präimplantationsdiagnostik zur Entdeckung schwerer genetischer Schäden des extrakorporal erzeugten Embryos ist nicht strafbar. Bundesgerichtshof/Pressestelle, Karlsruhe.
- Bundesgesetzblatt, 1995. Artikel 8. Änderungen des Strafgesetzbuches, § 218. *Bundesgesetzblatt I*, 8, 1055.
- Bundesgesetzblatt, 2011. Gesetz zur Regelung der Präimplantationsdiagnostik. *Bundesgesetzblatt I*, 58, Bundesanzeiger Verlag, Köln, 2228–2229.
- Bundesministerium der Justiz und für Verbraucherschutz, 2011. Embryonenschutzgesetz vom 13. Dezember 1990 (BGBl. I S. 2746) das zuletzt durch Artikel I des Gesetzes vom 21. November 2011 (BGBl. I S. 2228) geändert worden ist. <http://www.gesetze-im-internet.de/eschg/>, last accessed 15 February 2015.
- Bundesverfassungsgericht, 1975. Urteil vom 25.2.1975. 1 BvF 1,2, 3, 4 5, 6 /74 zum Schwangerschaftsabbruch. *BVerGe* 39, 1–95.
- Bundesverfassungsgericht, 1993. Urteil vom 28.5.1993. 2 BvF 2/90; 4, 5/92 zum Schwangerschaftsabbruch. *BVerGe* 88, 203–366.
- Deutsche Gesellschaft für Medizinrecht, 2005. Einbecker Empfehlungen der DGMR zu Rechtsfragen der Präimplantationsdiagnostik. *Medizinrecht* 23, 117–118.
- Deutscher Bundestag, 2003. Drucksache 15, 15. Wahlperiode, 18.02.2003. Deutscher Bundestag, Berlin.
- Deutscher Bundestag, 2008a. Entwurf eines Gesetzes zur Änderung des Stammzellgesetzes. Bundestag-Drucksache 16/7981. Deutscher Bundestag, Berlin.
- Deutscher Bundestag, 2008b. Keine Änderung des Stichtages im Stammzellgesetz. Adulte Stammzellforschung fördern. Bundestag-Drucksache 16/7985. Deutscher Bundestag, Berlin.

- Deutscher Bundestag, 2011a. Plenarprotokoll 17/120. Drucksache Deutscher Bundestag, Berlin.
- Deutscher Bundestag, 2011b. Bundestag-Drucksache 17/5450, Entwurf Göring-Eckardt *et al.* Deutscher Bundestag, Berlin.
- Deutscher Bundestag, 2011c. Bundestags-Drucksache 17/5452, Entwurf Röspel *et al.* Deutscher Bundestag, Berlin.
- Deutscher Bundestag, 2011d. Bundestags-Drucksache 17/5451, Entwurf Flach *et al.* Drucksache Deutscher Bundestag, Berlin.
- Diedrich, K., 2011. Stand der Präimplantationsdiagnostik in Deutschland. *Frauenheilkunde* 3, 144–146.
- Dorscheidt, J.H.H.M., 2010. Developments in Legal and Medical Practice Regarding the Unborn Child and the Need to Expand Prenatal Legal Protection. *Eur. J. Health Law* 17 (5), 433–453.
- Dreier, H., 2004. Grundgesetz-Kommentar, Bd. 1. second ed. Mohr-Siebeck, Tübingen.
- Frommel, M., 2002. Ethische, verfassungsrechtliche und strafrechtliche Problematik. *Reproduktionsmedizin* 18, 158–182.
- Gerst, T., 2004. Ärztliche Standesorganisation und Standespolitik in Deutschland 1945–1955. Franz Steiner Verlag, Stuttgart.
- Graumann, S., 2004. Präimplantationsdiagnostik, embryonale Stammzellforschung und das Regulativ der Menschenwürde. In: Kettner, M. (Ed.), *Biomedizin und Menschenwürde*. Suhrkamp, Frankfurt am Main, pp. 122–144.
- Günther, H.-L., Taupitz, J., Kaiser, P., 2008. Embryonenschutzgesetz. W. Kohlhammer, Stuttgart.
- Hepp, H., 2000. Präimplantationsdiagnostik – medizinische, ethische und rechtliche Aspekte. *Dtsch. Arztebl.* 97, A 1213–A 1221.
- Herrmann, S.L., 2009. Policy Debates on Reproductive: The Problematicization of New Research in Great Britain and Germany. Campus, Frankfurt am Main and New York.
- Hufen, F., 2010. Individuelle Rechte und die Zulassung der Präimplantationsdiagnostik. In: Gethmann, C.F., Huster, S. (Eds.), *Recht und Ethik in der Präimplantationsdiagnostik*. C. H. Beck, München, pp. 129–153.
- Jasanoff, S., 2005. *Designs on Nature. Science and Democracy in Europe and the United States*. Princeton University Press, Princeton.
- Kirejczyk, M., 1999. Parliamentary cultures and human embryos: the Dutch and British debates compared. *Soc. Stud. Sci.* 29 (6), 889–912.
- Kollek, R., 2002. Präimplantationsdiagnostik: Embryonenselektion, weibliche Autonomie und Recht. Francke Verlag, Tübingen.
- Kreß, H., 2009. *Medizinische Ethik. Gesundheitsschutz, Selbstbestimmungsrechte, heutige Wertkonflikte*. W. Kohlhammer, Stuttgart.
- Krones, T., Richter, G., 2004. Preimplantation genetic diagnosis (PGD): European perspective and the German Situation. *J. Med. Philos.* 29 (5), 623–640.
- Labahn, R., 2003. Pressemitteilung: Lübecker Klinikchef klagt: 'Das Embryonenschutzgesetz hat in weiten Teilen versagt', Informations- und Pressestelle Universität zu Lübeck 2003, Lübeck. <http://idw-online.de/pages/de/news69240> (last accessed 13 October 2011).
- Loewenich, Y., 2008. Präimplantations-Diagnostik. In: Gahl, K., Achilles, P., Jacobi, R.-M.E. (Eds.), *Gegenseitigkeit. Grundfragen medizinischer Ethik*. Königshausen und Neumann, Würzburg, pp. 405–413.
- Ludwig, M., Pergament, D., Schwinger, E., 2001. Preimplantation genetic diagnosis: The German situation. *Trends Genet.* 17, 473–474.
- Mulkay, M., 1994. The triumph of the pre-embryo: interpretation of the human embryo in parliamentary debate over embryo research. *Soc. Stud. Sci.* 24, 611–639.
- Nationaler Ethikrat, 2006. *Genetische Diagnostik vor und während der Schwangerschaft*. Nationaler Ethikrat, Berlin.
- Nentwich, H.-J., 2011. Präimplantationsdiagnostik (PID) aus pädiatrischer Sicht. Stellungnahme der Kommission für ethische Fragen der Deutschen Akademie für Kinder- und Jugendmedizin e.V. *Monatsschrift Kinderheilkunde* 7 pp. 1–4.
- Prainsack, B., Siegal, G., 2006. The rise of genetic couplehood? A comparative view of premarital genetic testing. *BioSocieties* 1, 17–36.
- Rolf, S., 2009. Zwischen Forschungsfreiheit und Menschenwürde. Unterschiede beim Umgang mit menschlichen Embryonen in England und Deutschland. Hanseatisches Druck- und Verlagshaus, Frankfurt am Main.
- Rose, N., 2001. The politics of life itself. *Theory Cult. Soc.* 18, 1–30.
- Schmidt, H.T., 2003. Präimplantationsdiagnostik. *Jenseits des Rubikons?* LIT Verlag, Münster.
- Schreiber, H.-L., 2000. Von richtigen rechtlichen Voraussetzungen ausgehen. *Dtsch. Arztebl.* 97, 1135–1136.
- Schwinger, E., 2003. Präimplantationsdiagnostik: Medizinische Indikation oder unzulässige Selektion? Friedrich Ebert Stiftung, Bonn.
- Strathern, M., 2005. *Kinship, Law and the Unexpected. Relatives are Always a Surprise*. Cambridge University Press, Cambridge.
- Ulsenheimer, K., 2008. *Arztstrafrecht in der Praxis*. CF Müller, Heidelberg.
- Valkenburg, G., Aarden, E., 2011. Constructing embryos, constructing politics: connecting politics and technology in the Netherlands and Germany. *BioSocieties* 6 (4), 447–465.
- Waller, K., 2011. Ein zeitgemäßes Fortpflanzungsmedizinengesetz für Deutschland. *Gynäkologe* 44, 754–758.
- Weschka, M., 2010. Präimplantationsdiagnostik, Stammzellforschung und therapeutisches Klonen: Status und Schutz des menschlichen Embryos vor den Herausforderungen der modernen Biomedizin. Duncker und Humblot, Berlin.
- Woo, P.-N., 1999. Präimplantationsdiagnostik und selektiver Schwangerschaftsabbruch. Zur Analogie von Embryonenselektion in vitro und Schwangerschaftsabbruch nach Pränataldiagnostik im Rahmen der medizinischen Indikation des § 218a Abs. 2 StGB aus ethischer Perspektive. *Z. Med. Ethik* 45, 233–244.

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