"Before I formed you in the womb…"
A Guide to the Ethics of Reproductive Medicine
from the Council of the Community of Protestant Churches in Europe CPCE
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Foreword

The progress of reproductive medicine and its possibilities have raised hopes and expectations as well as concerns in our societies and churches in recent decades. And the outcome of the possible developments cannot be foreseen yet. Many Protestant Churches have discussed the ethical questions and challenges over the last years. They have published statements and guides on different aspects.

The Council of the Protestant Churches in Europe believes that the time has come to identify the mutual Protestant reasoning in this discussion. The background is, on the one hand, the noteworthy and encouraging reception of the Council's guide on ethical questions at the end of life "Time to live, time to die" of 2011 by the CPCE Member Churches. On the other hand, the discussion on ethical questions at the beginning of life is i.a. conducted on a European level, in the Council of Europe and some aspects also in the European Union.

Therefore, the Council assigned the CPCE Expert Group on Ethics to establish a guide on the ethics of reproductive medicine on the basis of the existing statements of the churches. A first draft was discussed in the Council meeting in Brussels in October 2015. In March 2016 the revised draft was the subject of an intensive debate by delegates and experts from theology, medicine and law of CPCE Member Churches in a consultation at the Protestant Academy of Loccum, Lower Saxony, Germany. The Council of the Community of Protestant Churches in Europe presents the revised document to the public as a guide to the complex questions at the beginning of life.

The Council is aware that the medical technological possibilities will progress further. The Guide is not the final word. But it offers a fundamental and manifold guide for a common Protestant orientation at the European

level. It invites and encourages the Member Churches to work further on these questions in their specific contexts.

The Council thanks all those who have contributed to the genesis and finalisation of the document! The Council thanks especially Prof Dr Neil Messer, Winchester, UK, for his editorial work.

Dr Gottfried Locher, CPCE President

Bishop Dr Michael Bünker, CPCE General Secretary

0. Executive Summary

In the decades since the birth of the first baby conceived by IVF, developments in human embryology and reproductive medicine have made it possible to understand and intervene in the origins and development of human individuals from the very beginnings of their personal history. These developments have gone hand in hand with great changes to patterns of marriage, parenthood and family life in many European societies. All of this has raised ethical questions that many people find profound, complex and perhaps disturbing. Protestant churches in Europe have been active in responding to these scientific, medical and social developments and the ethical issues they raise.

This *Guide to the Ethics of Reproductive Medicine* has been prepared by the Community of Protestant Churches in Europe to assist and resource member churches in their responses to these issues, and to make a Protestant contribution to wider ecumenical, political and societal debates on these questions throughout Europe. It begins by identifying a range of ethical issues raised by current medical, social and political discussions of reproductive medicine (ch. 2). These include the possible harms to parents and children, the complex relationship between developments in reproductive medicine and changing patterns of family life, the tensions between reproductive autonomy and the welfare of children, and issues raised by pre-implantation genetic diagnosis and research on human embryos – particularly the ontological, moral and legal status of the human embryo.

Placing these issues in a Protestant theological and ethical framework, the guide affirms that the Bible is normative for ethics to the extent that it calls on people to live out of their faith in Christ; yet this does not mean that moral norms for contemporary living can simply be read off biblical texts. There is a hermeneutical task involved in reading the Bible in relation to the ethics of

reproductive medicine (section 3.1). A study of biblical texts and narratives concerned with procreation, parenthood and family life (section 3.4) reveals much relevant material, but no single pattern of family life or parenthood is commended uniformly by all these texts. In the New Testament, biological parenthood is shown to be no longer of ultimate importance in the light of the life, death and resurrection of Christ. Yet instructions on family life in some of the epistles – though reflecting particular and in some ways problematic sociocultural contexts – may nonetheless commend parenthood and family life as a penultimate vocation in which people may be called to serve God and love their neighbours.

Ethical deliberation on reproductive medicine, rooted in the Bible, may be guided by a theological-ethical framework of love, justice, freedom and responsibility (section 3.2). Another foundational question raised in various ways by reproductive medicine, but sometimes neglected by Protestant ethics, is the normative significance of nature and the natural (section 3.3).

A range of more practically-focused issues may be identified that cut across several specific topics and practices in reproductive medicine. Perhaps the most obvious of these cross-cutting issues is the ontological and moral status of the embryo, about which there is a range of views among Protestants. The guide does not advocate a single position, but sets out for consideration by member churches various views and approaches found in Protestant ethical reflection (section 3.5). A further cross-cutting issue is the relationship (and possible tension) between a parental right to reproductive autonomy and the best interests of the child. Concepts of reproductive autonomy and this relationship (section 3.6) may require some reconsideration in the context of the ethical framework of love, justice, freedom and responsibility set out earlier.

One obvious question is to whom the ethical reflection in this guide is addressed. A range of various overlapping audiences is identified (section 3.7), including the members of CPCE member churches, healthcare professionals and researchers, legislators and policymakers, and citizens and voters (any or all of whom may of course also be users of reproductive medicine services). The guide distinguishes between the "pastoral" and "public" responsibilities of member churches in relation to reproductive medicine, and considers how member churches' teaching and reflection may interact with wider public deliberation and debate on these questions. Related to this issue is the discussion of professional roles, responsibilities

and ethics, which may be seen in a distinctive way in the light of theological concepts like vocation (section 3.8).

The second part of the guide addresses a range of practical ethical topics in reproductive medicine, taking into consideration current information about the technical, legal and policy aspects of each topic and church statements on it. First the ethics of in vitro fertilisation (IVF) itself are discussed (ch. 4). The guide concludes that neither concerns about risks and harms, nor more fundamental considerations such as the technical character of IVF, give reasons for Protestant churches to reject it absolutely. It may be seen as a way in which people are called to take responsibility in a spirit of love for responding to particular forms of human need, longing and suffering. However, some of the concerns raised about it do give reasons for approaching it with caution, and in particular being critical about any tendency to see it as a convenient solution to problems that are essentially social and political (such as an increase, driven by economic and employment pressures, in the average age at which women try to conceive). Closely linked to IVF is cryopreservation (ch. 5), or the storage of deep-frozen gametes or embryos. This is not seen as a particularly ethically problematic area in itself, but the guide does address some areas of concern: for example, the worry that the practice might encourage an overly instrumental view of early human life, and concerns about so-called "social freezing" connected to the social, economic and employment-related aspects of IVF mentioned in chapter 4.

IVF and similar techniques also open the way to fertilisation using donated gametes (eggs or sperm), and if surplus embryos generated during an IVF cycle are not required for implantation in the womb of the genetic mother, they may be donated to other intending parents (ch. 6). Among other things, gamete and embryo donation expands the range of possibilities for single women and same-sex couples to have genetically-related children. The guide does not rule out gamete donation, but concludes that more attention should be paid to risks and potential harms, including the health risks associated with egg donation, the psychological impact on recipient couples and the welfare and rights of children conceived using donated gametes. It argues that egg donation should not be treated legally in a different way from sperm donation, and that – because children have the right to know who their parents are – the mixing of sperm from several donors should be prohibited. Gametes should not be bought or sold, and financial incentives for "egg sharing" by women going through IVF are also ethically questionable. Embryo donation (for procreation) may also be ethically acceptable under certain conditions. While there may be a moral analogy between embryo

donation and adoption, legally a clear distinction between the two should be maintained. By analogy with gamete donation, embryos with different genetic mothers should not be mixed in a single implantation cycle.

Related to gamete and embryo donation is the practice of surrogacy, in which one woman carries and bears a child on behalf of another, either as a commercial or altruistic arrangement (ch. 7). The guide argues that Protestants have strong ethical reasons to resist surrogacy: first, because it seems to deny the meaning and moral quality of parental relationships, particularly the biological bond between gestational mother and child; second, because commercial arrangements in particular risk instrumentalising and exploiting surrogate mothers; third, because surrogacy places the resulting children in a highly ambiguous social and legal situation.

For a long time, prenatal diagnosis (PND) has made it possible in a limited way to test and select for children with desired genetic characteristics. In the case of PND, selection in practice means the abortion of foetuses found to have undesired characteristics such as severe genetic diseases. The scope for selecting children with desired genetic features has been greatly expanded by IVF and related techniques, which have opened the way for pre-implantation genetic diagnosis (PGD). Now embryos can not only be screened for genetic disease markers before implantation, but can also be tested for other desired characteristics. For example, sex selection might be attempted either on medical grounds or for social reasons such as "family balancing", or embryos with particular tissue types may be selected to act as "saviour siblings" to older children. The ethics of abortion is beyond the scope of this guide, but chapter 8 briefly discusses PND as background to a more extended ethical analysis of PGD. The most obvious concern about the latter is that embryos with undesired genetic characteristics are likely to be discarded or used in research, and in either case will be destroyed. Other concerns include the impact of PGD on social attitudes, and the worry that over time it will create a climate hospitable to eugenic attitudes and practices. Given the range of Protestant positions on the moral status of embryonic human life (section 3.5), there will also be a range of views on whether the genetic selection and destruction of human embryos can ever be acceptable. But even if it is accepted, the other concerns noted in the chapter suggest that it should be restricted to the most serious of situations – so that (for example) both "family balancing" and "saviour siblings" are ruled out.

From its early days, reproductive medicine has been associated with research involving human embryos. This research has in recent years taken

new directions such as the creation of various kinds of human-animal hybrid (human admixed embryo). It also offers the prospect of various novel kinds of therapy. Some of these, such as mitochondrial replacement, have already become a reality. Some, such as human embryonic stem cell therapies, may do so in the relatively near future. Others, such as germline genetic modification, appear to be more distant prospects, though the recent development of "genome editing" technologies could bring the latter much closer. Chapter 9 surveys these areas of research and novel therapy, focusing on four areas of ethical concern: the moral status of the embryo, the importance of the human-nonhuman species boundary for human dignity, the possibility of children having three genetic parents, and the modification of the human genome.

Christians' and churches' ethical conclusions on embryo research will of course depend on the position they take in relation to the arguments about the moral status of the human embryo, set out in section 3.5. If one takes a gradualist view, embryo research is easy to justify if the scientific or therapeutic goals are sufficiently important. If one rejects the gradualist view, it will be more difficult to justify embryo research even for good and important goals, and this will at any rate give strong motivation to the development of alternatives such as induced pluripotent stem cells.

The making of human admixed embryos for research or, in future, therapeutic purposes has created genuine moral perplexity in recent debates. Christian comment often focuses on two concerns: first, by blurring the species boundary such research undermines the distinctive human status and dignity expressed by the doctrine of the *imago dei*, and secondly that the creation of new forms of life is a rebellion against the creative and providential purposes of God. Yet both these lines of argument are problematic in some ways, and the guide suggests that more light could be shed on these questions theologically by considering the moral character, aims and motivations of the practice of human admixed embryo research.

Mitochondrial replacement therapy creates, in a limited way, a new situation in which a child could be the offspring of three genetic parents. The genetic contribution of the mitochondrial donor is so limited and specific that it is unlikely to pose any new concern about the psychosocial well-being of the child, beyond those associated with other practices in reproductive medicine. However, for Christians and churches who attach theological and moral significance to the child's being the fruit of a loving relationship between two parents, the introduction of a third party's genetic material

into the process – even in such a limited way – may be seen as a new and troubling development.

Concerning germline genetic modification, the guide supports a distinction that is sometimes contested, between the goals of therapy and enhancement. Although some Christians object to germline modification even for therapeutic purposes, on the grounds that it is a form of eugenic practice, the guide suggests that an ethic of love, freedom, justice and responsibility could in principle support the use of germline therapy as a way for parents to take responsibility for the identity and well-being of their children. There are good reasons, however, to be much more suspicious of projects for germline genetic enhancement of human qualities or capacities, particularly when these projects form part of a grandiose "transhumanist" agenda for the transformation of humankind into a new (and supposedly better) species. For enhancement projects with more modest aims, theological suspicion might stop short of blanket rejection and instead recommend prudential judgements case by case.

The reproductive technologies considered in chapters 4-9 are all, in a sense, attempts to remove or compensate for impairments in natural reproductivity. They may involve donated gametes and result in unusual family constellations, but a child born with their aid will still have a genetic father and mother. (In the case of mitochondrial replacement therapy, he or she may have a genetic father and – in a very limited sense – *two* genetic mothers.) Chapter 10, however, looks ahead to two emerging technologies that could break this boundary.

One is reproductive cloning, using the nuclear transfer technique also used for some of the research applications discussed in chapter 9. The use of this cloning technique to conceive new individuals and bring them to birth has been achieved in several mammalian species. However, its use in human reproduction is prohibited by many jurisdictions around the world and rejected by virtually all churches that have addressed the question. This guide concurs with that rejection, not only because of practical concerns about risk and harm, but also because of the implications of the practice for familial and social relationships, and because it appears to embody ambitions and aspirations that are ethically highly questionable.

The second emerging technology considered in chapter 10 is reproduction with the aid of artificial gametes. This technology is still at a very early stage of its development, but could in future break the link between genetic

parenthood and procreation in a way that existing reproductive technologies do not. Because of its newness, it has at the time of writing received little attention from either secular or theological ethics. The present guide offers no ethical conclusions about it, but uses it as an example to emphasise the importance of the churches' keeping abreast of such developments and the ethical issues they raise.

A concluding chapter (chapter 11) summarises the discussion, states some practical recommendations and identifies areas where further work is needed in the future.

1. Introduction

At the beginning of the book of Jeremiah, God's call comes to the prophet with the words, "Before I formed you in the womb I knew you, and before you were born I consecrated you; I appointed you a prophet to the nations" (Jer. 1:5). These words underscore the completeness of God's knowledge of Jeremiah and the destiny divinely appointed for him from his earliest beginnings. At the time when this text was written and edited, it could be taken for granted that no-one *except* God could possibly form someone in the womb or see their "unformed substance" (Ps. 139:16) before their birth. Yet in recent decades, developments in human embryology and reproductive medicine have given human beings the ability to see the "unformed substance" of human beings from the earliest stages of their development, and to exercise unprecedented levels of control over whether and how they will be "formed in the womb". It is perhaps this ability to understand and intervene in such intimate aspects of our personal origins and development that makes the ethical issues raised by reproductive medicine seem so profound, complex and, to some, disturbing.

The Community of Protestant Churches in Europe (CPCE) understands these issues to be a common challenge. For some years, the Council of the CPCE has tried to involve the CPCE as a whole in the discussion of social ethics. In 2011 it published its guide *A Time to Live and a Time to Die* on ethical questions at the end of life, which was very well received. A year later it commissioned the Expert Group on Ethics to draw up a guide, patterned on the method of *A Time to Live and a Time to Die*, to issues such as the following that arise from reproductive medicine.

- First we need to ask how the churches regard reproductive medicine as such.
- If they do not fundamentally reject many or most of its options, as does the Roman Catholic Church,[1] Protestant churches must ask with what preconditions and for what purposes they do, or do not, consider the use of IVF and other methods of reproductive medicine to be admissible.
- Further possibilities which have followed the development of IVF, including embryo research, pre-implantation genetic diagnosis, reproductive or therapeutic cloning, and the creation of human-animal hybrid embryos, also raise profound ethical issues which require attention from Protestant churches.
- Then the developments in the field of reproductive medicine must also be seen as challenges to the way Protestant churches traditionally understand marriage and the family.
- Homosexuality and homosexual ways of life cannot be ignored as part of the context of these discussions, as will be clear in later sections; however, an ethical assessment of homosexual relationships as such will not be attempted in the present guide.

In fulfilling its commission from the CPCE Council, the Expert Group on Ethics has taken account of the various positions of the member churches, discussed the questions raised and organised a consultation conference in March 2016 with CPCE member churches. This guide, presented to the member churches by the CPCE Council, is the fruit of that process of investigation, discussion and consultation. An opening chapter (ch. 2) outlines the ethical challenges in the field of reproductive medicine, and sets them in their medical, social and political context. Next, the guide comments on theological foundations for Protestant ethical discernment (ch. 3). Chapter 3 also discusses various cross-cutting ethical issues that arise in relation to many of the specific topics and problems in reproductive

1 Roman Catholic teaching is set out in Congregation for the Doctrine of the Faith, *Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation: Replies to Certain Questions of the Day* (Donum Vitae), 22 February 1987, online at http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19870222_respect-for-human-life_en.html (accessed 7 September 2015). In essence any intervention that separates sexual acts from procreation is prohibited by Catholic teaching, so that the only permissible options are such things as hormonal stimulation to promote ovulation and surgery to repair blocked or damaged fallopian tubes.

medicine. Subsequent chapters (ch. 4-10) discuss a range of specific topics: in vitro fertilisation, cryopreservation, gamete and embryo donation, surrogacy, prenatal and preimplantation genetic diagnosis, embryo research, novel therapies, and the future possibilities of reproductive cloning and reproduction using artificial gametes. A conclusion (ch. 11) summarises the discussion, makes some recommendations and identifies areas that require further work by the churches.

The guide does not presuppose that there is consensus among Protestant churches on all the questions discussed here. On some issues, definite conclusions are stated, but in general the aim has been to map out a "corridor" of authentically Protestant positions, within whose boundaries discussion, debate and moral discernment can take place. The corridor may be narrower in some places than others, and on some issues it may narrow down to a single position to which Protestants are committed by their core theological and moral convictions. But in other places it may be wider, encompassing a range of positions that may be vigorously opposed to one another, but which can all be recognised as following from authentically Protestant moral reasoning. Defining the boundaries of the "corridor" and clarifying the terms in which Protestant disagreement on these questions should be conducted may help towards a resolution of those disagreements. Given the contested nature of the issues we are addressing, both in church and society, the "corridor" approach is seen as a strength of this document.

This guide is intended to assist the member churches of CPCE, and others, in their further reflection, discussion and public engagement concerning these complex issues. Its primary audience is the membership and leaders of member churches, which have a twofold mission in this context. One aspect of this is the churches' *public* responsibility to be involved with ongoing debates about legislation, public policy and ethical practice in relation to reproductive medicine. The other is the *pastoral* task of supporting those of their members who confront these issues personally or professionally: as people experiencing unwanted childlessness, intending parents concerned that they may be carriers of serious congential diseases, children conceived by IVF or gamete donation, those born with inherited diseases or disabilities, health professionals, researchers, politicians and legislators, and others besides.

The guide is intended to resource member churches in this twofold pastoral and public mission. The Council of the Community of Protestant Churches in Europe hopes it will inform the understanding of those who speak for

the churches in public debates about policy and legislation. The Council also hopes it is helpful and informative for those offering pastoral care and support, and that those facing these issues in their personal experience will find it addresses their situations truthfully and with understanding. And the Council hopes it will resource members of our churches who have relevant public roles and responsibilities, for example as health professionals or policy-makers. Later in the guide (sections 3.7, 3.8) some remarks are made about how the churches might relate to public, political and professional arenas in connection with these issues.

In addition to CPCE member churches, the guide is offered to our ecumenical partners as a contribution to ongoing dialogue and exchange about these questions. It is offered also as a resource to those working on these issues in the public arena, for example in political, professional or academic institutions, as an expression of the CPCE's reflection on these challenging questions.

2. Framing the issues in their medical, social and policy context

2.1. Developments in the field of reproductive medicine

Since the birth of the first test-tube baby in 1978, reproductive medicine has become firmly established on the basis of in vitro fertilisation (IVF). The indications of its use have continually expanded. Since the age at which women bear their first child has risen in many countries, sterility problems have also increased. This is partly connected to the difficulty of combining children and a career. Awareness of the possibility of using IVF might, in turn, be one of the reasons why women and couples put off having children until later.

IVF was originally developed to treat undesired sterility. The statutory framework created in European countries was initially directed towards the traditional models of marriage and the family. For quite some time now, however, things have been becoming more liberal so that IVF is not only used by married couples or de facto partners but also by single or lesbian women. Recent court decisions at the European and national level point to changes in social consensus regarding accepted ways of life and family models. Hence there is now a broader discussion about allowing lesbian couples to practise IVF when both women are capable of reproduction yet reject sexual intercourse with a man and are thus considered "socially infertile".

While a very narrow assessment of IVF only allows the use of germ cells (gametes) of persons desiring to reproduce, there are extended arrangements also allowing the use of a third person's sperm or egg cells. However the

possible arrangements may be assessed ethically and legally in each individual case, they certainly raise serious questions:

1. Basically sperm and egg donations lead to a decoupling of genetic, biological and social or legal parenthood. Genetic parents are the persons from whom the germ cells originate. The biological mother is the woman who bears the child. Social parents or legal parents are those to whom parenthood is attributed under applicable law.

2. The question then arises as to whether it should only be admissible to donate egg or sperm cells available only as a donation (albeit with expense allowances), or whether a profit may be made from germ cells.

3. In the case of egg cell donations, unlike sperm donations, there is a higher health risk for the woman donor (hormone treatment, invasive intervention to retrieve the egg). There is also a risk of women being exploited economically.

2.2. Surrogate motherhood

A further step to decouple genetic, biological and legal or social parenthood is surrogate motherhood, which is already permitted in various countries.[2] In this case, a woman wanting a child allows another woman to bear it, but later the child is legally considered her child. Different constellations are conceivable: the egg cell and sperm are derived from the parents later wanting to raise the child as their own, or the egg or the sperm or both come from another person than the later legal parents. The grounds for surrogate motherhood may differ: there are cases in which a woman does not want to go through with pregnancy herself, e.g. because it will hamper her professional life. However, there are also conceivably cases in which a woman cannot bear the child herself, e.g. after a hysterectomy. In the case of cancer it is for example conceivable that ovarian tissue is taken from the patient and cryopreserved; later the attempt can be made, using these egg cells, to attain reproduction with the aid of a surrogate mother. Male homosexual couples can only fulfil their wish for a genetically related child through a surrogate mother.

2 European Parliament, Directorate General for Internal Policies, *A comparative study on the regime of surrogacy in EU Member States*, 2013.

It is quite obvious that all this raises a large number of serious ethical questions – the commercialisation of reproduction, to start with, and the risk of exploiting women who act as egg donors or surrogate mothers.

2.3. Preimplantation genetic diagnosis (PGD)

The establishment of PGD has led to an extension of the indications for IVF. In this case, embryos produced in vitro are to be examined for genetic disorders in order to preclude serious hereditary diseases. Another possibility is the selection of embryos in order to have a sibling for a living child with a serious disease and save the latter's life – e.g. through donating bone marrow (saviour siblings). A core ethical question is whether this is not a total instrumentalisation of the saviour sibling and a violation of his or her human dignity.

A special problem with IVF is the surplus embryos that are either eliminated after a certain time or made available for research (e.g. to produce human embryo stem cells). They can also be made available to couples who cannot have children naturally (embryo donation).

A basic question posed in the discussion about the different usages of IVF and preimplantation diagnostics is how far the right to reproduction goes. Is this just a defensive right, where no one can be prevented from reproducing (e.g. through forced sterilisation of people with intellectual impairment), or is it also a participatory right where the exclusion of lesbian couples or single women would contravene the principle of equality and constitute inadmissible discrimination? This leads into questions about reproductive autonomy and its limits.

2.4. Reproductive autonomy and the welfare of the child

Generally speaking, reproductive medicine is developing from a purely therapeutic medicine into a wish-fulfilling medicine. How is the wish for a child to be assessed in the individual case? Is undesired childlessness to be recognised as a disease, without further question? Is every wish for a child a natural desire, or can it even be pathological? Who may permit themselves to pronounce judgement on such questions and on what basis?

Alongside the right to reproduction and reproductive autonomy is the question of the welfare of the child. Is the child's welfare impaired by the dividing of genetic, biological and social parenthood into the different conceivable constellations? The UN Convention on the Rights of the Child enshrines the right of every child "as far as possible ... to know and be cared for by his or her parents" (art. 7). Is this right compromised by these divisions of parenthood?

We need further clarifications to be able to tackle the above questions methodically: how do the results of empirical studies relate to the welfare of the child and the development of children in one-parent families or with homosexual couples to an ethically normative approach? A child growing up with his/her biological parents can have an unhappy childhood, while one growing up with only one parent can develop well: can we conclude from that that it is of no special moral value for a child to grow up if possible with his/her biological parents? In view of the high divorce rate today, is it purely ideological to follow an ethic of marriage according to which the failure of a marriage is an ill to be avoided as far as possible? In brief: how do empirical facts relate to norms in an appropriate, contemporary ethic of marriage, family, sexuality and medicine?

2.5. Family models and constellations

Another question, however, is also that of the normativity and empirical pluralism of ways of life. Nowadays families take a variety of forms: traditional marriages, patchwork families created by divorces and new relationships, one-parent families and same-sex partnerships. Can the special statutory protection of marriage and the family continue to be legally and ethically justified? Must it be extended to analogous partnerships or largely abandoned altogether? These are questions of current concern, and are the the subject of intensive ongoing discussion in many of our member churches.

2.6. The relationship between empiricism and normativity, law and ethics

Besides the relationship between empiricism and normativity we also have to clarify the relations between law, morality and ethics. In a pluralist secular and democratic state, law cannot seek to impose a certain morality;

rather it must serve legal stability on the basis of human dignity and human rights. However, the law cannot be completely separated from morality and ethics because the law depends on morality. The moral justification of a fundamental respect for law is, of course, not to be confused with a consistent moralisation of law. There is thus a tension between law and ethics. A further question that arises at this point is what place religious standpoints should have in society's ethical debates, policymaking and legislation. This question is discussed below in section 3.7.

2.7. Further cross-cutting issues

One of the core questions in all the debates named above is that of the ontological, moral and legal status of the embryo. There is no unity on this question in current ethical debate. One position is that the merging of the egg and sperm cells creates a new person, i.e. the person exists just like a newborn baby, with human dignity and the right to life. Other positions see this moral status as only given at nidation, late in pregnancy or even at birth. As we shall see in section 3.5, some (though not usually all) of this range of opinion is also reflected in debates within the Protestant churches. The legal orders in Europe also differ on this issue. They concur that a new human person exists upon birth, with human dignity and human rights. However, the different legal orders grant different degrees of protection of life during pregnancy, as is shown by the different statutory regulations of abortion. When in vitro fertilisation is allowed, in vitro embryos do not have the same legal status as human beings after birth.

Scrutiny of the ramified philosophical, theological, legal and medical debate on the status of the human embryo shows that, while the status question is unavoidable, it is not enough. It does not provide a sufficient criterion for knowing what is ethically admissible, or not, at the beginning of life and with the use of reproductive medicine. This uncertainty also applies to embryonic research and the use of embryonic material.

The alternative is not between the assumed objective border between the merging of germ cells and other apparently arbitrary definitions of the beginning of life, as in each case empirical, scientific data have to be distinguished from an anthropological interpretation. Consequently, none of the positions taken manage without additional assumptions. What we witness is always more than mere empirical facts. Whether we only see an embryo as a heap of cells or as an evolving human being depends on our

intentions and interpretation patterns. Whether someone characterises an embryo as "a bundle of cells" or "an embryonic human being," they are adopting a form of linguistic policy resting on assumptions that the choice of language itself does not prove.

Further cross-cutting questions arise from the discussions in the individual sections of this guide; while some will be addressed up to a point, others are beyond the scope of the present document. Many of these questions would repay further reflection in the future. They include gender questions posed in connection with reproductive medicine, problems associated with globalised medicine, access to health care and distributive justice in the health service, and the relationship between human technological activity and God's creative action. Further questions relate to how we understand illness, disability and suffering, and the character of modern medicine between its healing and wish-fulfilling role. What are the interactions between individual choice and societal effects and trends – not to mention the ecumenical dimension of biomedical questions?

2.8. The European legal and policy context

In Europe the Oviedo Convention (1997) of the Council of Europe as well as a few directives of the European Union[3] have established a framework for the legislation in European countries:

> Recent European Union (EU) directives have had a significant impact on ART. In particular, the EU Tissue and Cells Directive (EUTCD; currently under revision) and the supplementing technical directives 2006/17/EC and 2006/86/EC have led to new safety and quality standards for clinical and laboratory procedures performed within *in vitro* fertilisation (IVF). Most European countries already transposed them into their respective

3 Directive 98/79/EC of the European Parliament and of the Council of 27 October 1998 on in vitro diagnostic medical devices; Directive 2004/23/EC of the European Parliament and of the Council of 31 March 2004 on setting standards of quality and safety for the donation, procurement, testing, processing, preservation, storage and distribution of human tissues and cells; Commission Directive 2006/17/EC of 8 February 2006 implementing Directive 2004/23/EC of the European Parliament and of the Council as regards certain technical requirements for the donation, procurement and testing of human tissues and cells; Commission Directive 2006/86/EC of 24 October 2006 implementing Directive 2004/23/EC of the European Parliament and of the Council as regards traceability requirements, notification of serious adverse reactions and events and certain technical requirements for the coding, processing, preservation, storage and distribution of human tissues and cells.

> national legislations, thus regulating procurement, testing, processing, storage, distribution and import/export of reproductive cells and tissues. Moreover, the EU Directive 98/79/EC on *in vitro* diagnostic medical devices, known as the 'IVD Directive' is also currently under revision and may have a significant effect on the field of genetic testing and its interface with ART.[4]

But still the diversity in legislation in Europe is huge:

> European legislation in the field of medically assisted reproduction and human embryo research is rather different in each country of the Union […], and not all European countries have specific legislation […]. These laws derive from different origins ranging from an extremely prohibitive legislation (e.g., in IT, DE, LT, and AT), versus a cautious regulatory approach in DK, SE, and FR and a liberal regulatory system in the UK, ES, GR, and NL.[5]

In each of the chapters of this guide dealing with specific issues areas of practice (chapters 4–10), we shall include a section on the legal situation pertaining to those areas and issues. Readers should be aware, however, that because of the diversity just noted, as well as the rapid rate of change in these areas, our surveys of the legal situation will be selective and illustrative rather than comprehensive. It is a task for member churches to keep abreast of the legislation pertaining to these topics in their own contexts.

4 European Society of Human Genetics and European Society of Human Reproduction and Embryology, "Current Issues in Medically Assisted Reproduction and Genetics in Europe: Research, Clinical Practice, Ethics, Legal Issues and Policy", *European Journal of Human Genetics* 21, Suppl. 2 (2013): S1-S21. Online at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3831061/ (accessed 12 January 2016).

5 F.P.Busardo et al., "The Evolution of Legislation in the Field of Medically Assisted Reproduction and Embryo Stem Cell Research in European Union Members", *Biomed Research International* (2014): 10, online at http://www.hindawi.com/journals/bmri/2014/307160/ (accessed 12 January 2016).

3. Framing the issues theologically and ethically

3.1. Reading the Bible in relation to the ethics of reproductive medicine

According to Protestant understanding, the only source and guideline of faith is Scripture, because and inasmuch as it testifies to the gospel of Jesus Christ that underlies and arouses faith. The gospel, in turn, relates to the law and at the same time differs from it. CPCE is convinced that also the problems of bioethics must be discussed against the background of law and gospel.6 Its study *Law and Gospel* argues:

> The distinction between law and gospel develops its force in orientation not at the level of discovering norms, but above all in dealing with ethical dissent in the church and reflecting on the role of the churches. [...] Ethical judgements can be formed only in personal responsibility before God, the context in which Christians see their whole lives.[7]

The study declares:

> Instructions for action in bioethics cannot be derived directly from the *gospel*. But in so far as ethics can be understood as applied anthropology, particular values and criteria follow from the understanding of the

6 Michael Bünker and Martin Friedrich, eds., *Law and Gospel: A Study, also with Reference to Decision-Making in Ethical Questions* (Leuenberg Texts 10, Frankfurt a.M.: Otto Lembeck, 2007), 281ff. See also Michael Bünker, ed., *Scripture – Confession – Church* (Leuenberg Texts 14, Leipzig: Evangelische Verlagsanstalt, 2013), 23-25.

7 *Law and Gospel*, 285.

> human being contained in the gospel. So there is no dispute in ethics that no human life may be sacrificed for another because this goes against human dignity, which is to be defined as an end in its self – theologically speaking, the fact that it is in the image of God.[8]

Yet the gospel also in a bioethical context must not be isolated from the law:

> In the secular realm boundless freedom would amount to a *gospel without law*. The temptation to claim freedom in a onesided way without heeding the right of others to live shows itself in a variety of ways in the field of human genetics: the fulfilment of the desire for children and procreation by modern reproductive medicine can detach itself from concern for the child's good…[9]

In general the study advocates "the embedding of reproduction in a culture of love and the shaping of society by an ethos of mercy"[10]. It also warns of the "temptation to preach *law without gospel*" that may "lead to the assertion of an autonomy which simply confirms what is given and declares empirical laws directly to be normative"[11].

As is said in the Barmen Declaration, "Jesus Christ, as he is attested for us in holy scripture, is the one Word of God which we have to hear and which we have to trust and obey in life and in death".[12] The Bible witnesses to the Word of God that encounters us as gospel and as law. Jesus Christ is the end of the law (Rom 10:4) as well as its fulfilment. Yet with regard to the question about the role of Scripture as norm in ethical questions, views differ more between Protestants. This is both a question about how to use and interpret the Bible and biblical texts as ethically normative, and a question about how to relate the Bible to other sources of moral insight and knowledge in a broader process of moral discernment. Most Protestants and CPCE member churches will agree that the Bible is a very important norm and guideline also for ethical questions. But what that means in practice, and how it is related to other normative sources, might create disagreement.

8 Ibid., 286.

9 Ibid., 287.

10 Ibid., 288.

11 Ibid.

12 *Theological Declaration of Barmen* (May 1934), art. 1, online at http://www.ekd.de/english/barmen_theological_declaration.html (accessed 30 September 2016).

With regard to the first question, it is warranted to say, across other differences, that the current will of God, binding in the here and now, cannot simply be read straight off any biblical text, not even the Decalogue or the Sermon on the Mount. A process of interpretation is always required in which we seek to understand the text in its own context, and to discern how it communicates the will or command of God to us in our present context.

One way of approaching this hermeneutical task is to say that when we encounter God's law or command in biblical reports this is always in the form of historical interpretations. They might be better understood as instances of what God's command or law can mean in concrete contexts than as eternally valid codifications of God's will. The ethical traditions of the Bible always presuppose morality and moral standards, some of which stem from a non-biblical context. They can be critically appropriated on the basis of faith in the God of Israel and father of Jesus Christ. This is the task of Christian faith throughout the ages, and thus today as well.

The Bible is normative for ethics to the extent that it calls on people to live from their faith. It is normative in that faith is binding on our ways of life, but often it does not provide direct, binding answers to present-day, practical questions about *how* we lead a life based on unconditional responsibility before God and humanity. Christian ethics, in the Protestant understanding, is an ethic of responsibility guided by the spirit of love and freedom. This ethic is basically oriented to the understanding of reality, the understanding of God and the anthropology conveyed by the Bible. That also applies to the ethical questions of modern reproductive medicine.

A more controversial question is the possible role of additional normative sources besides the biblical texts in the process of moral discernment. For example, when considering assisted medical reproduction, human experiences of having children, rearing a family, or infertility, as well as scientific insights into the possibilities as well as the burdens of fertility treatment and artificial reproductive technologies, are among the factors that might play into moral discernment, besides biblical texts and the moral tradition and insights they convey. Some, not least within the Reformed tradition of some CPCE member churches, might say that such factors are relevant to Christian moral discernment in the sense that they aid an appropriate application of biblical norms to the situation at hand. They enlighten us about the concrete situation and context in which moral questions occur, but carry little or no normative authority in their own right. Without the critical light that falls from the biblical testimony about

God's revelation on sinful worldly reality and its renewal in Jesus Christ, his cross and resurrection, they can not be taken as normative sources that guide moral discernment. Others, especially within a Lutheran tradition, are inclined to believe that factors such as human experiences, practical reason, scientific insights, cultural frameworks etc. can be normative sources of adequate moral knowledge. Without denying the reality of human sin as marking reality with imperfection and prohibiting any kind of absolutizing of human moral claims and projects, they also believe that there can be genuine moral understanding independent of the biblical testimony to the revelation in Christ. Theologically this is argued from the understanding of how God is present and related to created reality.

3.2. Love, justice, freedom and responsibility

The basis and fundamental criterion for Christian ethics is God's love to his creation and to all human beings that becomes manifest in the life, the words and deeds of Jesus Christ, his death and his resurrection. "God's love, which knows no bounds, precedes any human love. It is the unconditional gift of God, whose self is love."[13]

God's love relates to his justice, which differs from a human understanding of distributive justice. In the Old Testament as well as in the letters of Paul God's righteousness means his faithfulness to the community ("Gemeinschaftstreue").[14] This can be recognised in God's love for Israel, for his creation, and in the New Testament message of the justification of the sinner by faith.

This justification by faith leads to freedom. "Protestant churches agree that a Christian definition of freedom is different from the pure 'autonomy' that plays a prominent role in modern society. According to the gospel of the justification and acceptance of the human being by God's grace, liberty or freedom "can only be understood as embedded in relationship and responsibility, which both grow from the event of justification."[15]

13 "Stand up for Justice: The Ethical Discernment and Social Commitment of the Protestant Churches", in *Protestant in Europe: Social-ethical Contributions*, ed. Michael Bünker, Frank-Dieter Fischbach and Dieter Heidtmann (Leuenberg Texts 15, Leipzig: Evangelische Verlagsanstalt, 2013), 220.

14 Cf. Peter Stuhlmacher, *Gerechtigkeit Gottes bei Paulus* (FRLANT 87, 2nd ed., Göttingen 1966), 46ff., 113-141.

15 L.c. (FN 13), 238.

From this perspective, in the horizon of the gospel, Protestant ethics can be defined as an ethic of responsibility determined by the spirit of love. The Protestant view of responsibility is directly connected with belief in the justification of the sinner by faith alone. On it depends the distinction between person and works that liberates us from the pressure to justify ourselves – thus enabling the assumption of responsibility. The assumption of responsibility takes place not only in the knowledge that humans can fail, but also in the confidence that we are forgiven.

The CPCE's guide to ethical questions at the end of life, *A Time to Live and a Time to Die*, states:

> As justification by faith sets human being [sic] free from the project of realising life's ultimate meaning through moral efforts and performances, she is thereby also set free to serve the neighbour in responsible love and care. A protestant notion of freedom is therefore firstly based in a preceding and more fundamental dimension of gift, reception and dependence. Secondly, although freedom is given by God and never to be realised or manifested in moral performance, neither can it be disconnected from responsibility.[16]

The biblical gospel is at heart a message of freedom. "For freedom Christ has set us free," writes Paul in Gal 5:1 and warns against losing the ever-threatened freedom of faith due to a new set of laws. Christianity is the religion of freedom and all churches are measured by the extent to which they are an institution of freedom. It is to the lasting credit of the Reformation to have emphasised this in theory and practice.

In 1520 Luther published his "The Freedom of a Christian". It starts with a paradoxical double thesis that is really powerful. "A Christian man is the most free lord of all and subject to none; a Christian man is the most dutiful servant of all and subject to everyone."[17] Freedom in the biblical and Reformation sense is not to be confused with the boundless individualism and the supposed law of the strongest, but it is always coupled with responsibility towards God and our fellow human beings, and can only be lived in the spirit of loving God and our neighbour.

16 CPCE, *A Time to Live and a Time to Die: An Aid to Orientation of the CPCE Council on Death-hastening Decisions and Caring for the Dying* (Vienna: CPCE, 2011), 72.

17 Martin Luther, *Concerning Christian Liberty, with Letter of Martin Luther to Pope Leo X* (1520), n.p. Online at http://www.gutenberg.org/files/1911/1911-h/1911-h.htm (accessed 12 January 2016).

In this text on freedom of 1520 Luther, appealing to Paul,[18] introduced the distinction between the internal and the external person. The dialectic of freedom and bondage in Luther was long understood to mean a distinction between external heteronomy and internal autonomy. Accordingly, Christian freedom remained restricted to human inwardness and would certainly fit into a social order based on estates, an authoritarian state and authoritarian structures in daily life. Yet this was a misunderstanding,[19] as Luther's understanding of freedom can be interpreted as communicative freedom.[20] As communicative freedom, Luther's concept of the freedom of a Christian was founded in the communicative fellowship of the triune God who became a human being in Christ. In his freedom God does not want to exist for himself alone but in community with his creation. As Father, Son and Holy Spirit are free in their triune fellowship, so also human beings are free, not outside of, but within their fellowship with God. Their autonomy is a relational one because their personhood means existing in the relation to other persons and kin the basic relation to the triune God.[21]

Human beings can only come to themselves through another's love for them. Consequently, not only do freedom and love belong inseparably together, along with freedom and responsibility, so do freedom and justice. Since communicative freedom does not aim for competition but the participation and recognition of all, justice must be understood as participatory or enabling justice.[22] According to the understanding of God's righteousness as faithfulness to the community, to which human beings are also called in a spirit of a merciful law, there is also a direct connection between the doctrine of justification and social ethics.

The relation between communicative freedom, love and participatory justice is important for bioethical problems in general and specially for the ethical issues of modern reproductive medicine. Not only the desire to have children but also the child's welfare has to be discussed in general and also in every single case from the fourfold perspective of love, communicative freedom, responsibility and participatory justice.

18 Rom 7:22.

19 A more extended argument will be given in section 3.6.

20 Wolfgang Huber, *Folgen christlicher Freiheit: Ethik und Theorie der Kirche im Horizont der Barmer Theologischen Erklärung* (2nd ed., Neukirchen-Vluyn, 1985).

21 Cf. section 3.6.

22 Wolfgang Huber, *Von der Freiheit: Perspektiven für eine solidarische Welt* (München, 2012), 115ff.

Freedom and responsibility belong together with love. However, love in the broad sense transcends all moral demands, just as a culture of mercy transcends the principle of solidarity based on mutuality. Love includes the willingness of compassion. It makes us aware that suffering is a crucial dimension of human life. Hence a Protestant ethic is by no means sufficiently defined by the idea of responsibility alone.

If we understand the world as the creation of the triune God and ourselves as created in the image of this God to keep the creation and take care for it, we must assume responsibility, in a spirit of love, not only for those alive today but also for future generations. In the field of reproductive medicine, this means specifically that all those involved and the society as a whole must ask questions about the consequences for future generations of decisions taken individually and collectively today.

3.3. The moral significance of nature

A concern sometimes expressed about new reproductive technologies, genetic modifications and some forms of research on human embryos is that they are "unnatural," or "against nature," or they "interfere with nature." Yet many medical procedures, such as the use of antibiotics to fight infections or the use of analgesics to relieve pain, could also be described as "against" natural processes – to say nothing of countless other forms of human activity in the world. So the fact that a human activity opposes, redirects or transcends a natural process is apparently not always a reason to reject it. Conversely, the fact that an event or process is natural is not always seen as a reason to accept or welcome it. Moreover, since the eighteenth century, moral philosophers have usually denied that moral conclusions can be drawn solely from facts about nature. In the terms used by David Hume, an "ought" cannot be derived from an "is." In which case, is it simply a mistake to object to reproductive technologies or the manipulation of human embryos on the grounds that these activities are against nature? Or are genuine moral insights being articulated (however unclearly) in these concerns? Can Christians make any sense of the thought that "the natural" has a kind of moral significance which sets limits on the ways in which we ought to modify (human) nature?

This line of thought may lead in two distinct directions. One is the natural law tradition in ethics, which aims to discern moral norms or principles by reflecting upon nature. The other is a more recent trend in Western

culture to see "nature" and "the natural" as something valuable that needs protection. Both these ways of thinking have influenced ethical debates about reproductive medicine, and therefore require some consideration.

3.3.1. The natural law tradition

Natural law theory may be said to have some roots in biblical texts such as Rom. 1—2. In ch. 1, Paul writes that God's "eternal power and divine nature" (v. 20) may be discerned in the things he has made, and to act in ways that are "unnatural" or "against nature" is a symptom of the refusal to recognise the signs of God's nature and power in creation. In the next chapter he argues that when Gentiles "do instinctively what the law requires," they "show that what the law requires is written on their hearts" (2:14,15). Mediaeval Catholic thought combined these biblical themes with ideas from ancient philosophy, particularly the thought of Aristotle, to generate the view of natural law found in thinkers such as Thomas Aquinas.[23] One key idea of traditional natural law theory is that different kinds of being have their own distinct natures, including natural ends –purposes or goals – appropriate to those natures. The flourishing or good of a being will consist in the fulfilment of its natural ends, which will be different for different kinds of being: humans have some ends in common with elephants or oak trees, but some natural ends or goals are specifically human. Another key idea is that humans have a rational nature, which among other things makes it possible for us to discern "what the law requires."

The Reformers were critical of such forms of natural law thought for various reasons. With their *sola scriptura* emphasis, they were suspicious of the Aristotelian influence on mediaeval theology, including natural law reasoning. Also, Reformed theology in particular has emphasised the corruption of human reason by sin and has therefore tended to be less optimistic than some traditions about the power and reliability of our unaided moral reason to learn about our good. For example, Calvin's comment on Rom. 2:15 was that "[we cannot] conclude from this passage, that there is in men a full knowledge of the law, but that there are only some

23 See Thomas Aquinas, *Summa Theologica*, 1a 2ae, q. 94. Online at http://newadvent.org/summa/2094.htm (accessed 21 May 2016).

seeds of what is right implanted in their nature" – so we are without the excuse of ignorance when we fail to keep God's law.[24]

In more recent times, Protestant attitudes to natural law thinking have varied. Some theologians, both Lutheran and Reformed, have seen the attempt to gain natural knowledge of right and wrong as a dangerous form of pride. For example, in Genesis 3:5, the serpent in the garden of Eden promises the human beings that if they eat the fruit that God has forbidden them, they "will be like God, knowing good and evil." In the last century, both Dietrich Bonhoeffer and Karl Barth drew from this text a profound suspicion of human efforts to reason about ethics independently of divine revelation.[25]

Protestant ethics has also been wary of the danger of absolutising or reifying allegedly natural orders or processes, making them the origin of absolute limits of moral action. This kind of absolutising, known also from parts of early twentieth century Lutheran theology, has little merit. Not only does it tend to ignore the meaning of justification in Christ, and the provisionality it marks this reality with. It also risks misconstruing human moral responsibility as abiding by rules laid down in nature by divine decree, rather than pursuing God's purposes of love of the neighbour in the concrete situation (on the relationship between responsibility and love of the neighbour, see further section 3.4 below). And the way attempts at identifying the allegedly "natural" are easily mixed up with social structures of power and interests has long been well-known. This has not least been prevalent in the field of gender. Claims to the effect that certain roles were "natural", whereas others were "unnatural" for women, have been used to perpetuate patriarchal social patterns, keeping women locked in domestic roles of house-holding and child-rearing, and away from public roles of citizenship, civil service and leadership in church and society.

24 John Calvin, *Commentaries on the Epistle of Paul the Apostle to the Romans*, ed. and trans. John Owen (Grand Rapids, MI: Christian Classics Ethereal Library, n.d.). Online at http://www.ccel.org/ccel/calvin/calcom38.vi.iv.html (accessed 21 May 2016).

25 Dietrich Bonhoeffer, *Creation and Fall*, ed. John W. de Gruchy, Martin Rüter and Ilse Tödt, trans. Douglas Stephen Bax (Dietrich Bonhoeffer Works, vol. 3, Minneapolis, MN: Fortress, 2004); Dietrich Bonhoeffer, *Ethics*, ed. Ilse Tödt, Heinz Eduard Tödt, Ernst Feil and Clifford J. Green, trans. Reinhard Krauss, Charles C. West and Douglas W. Stott (Dietrich Bonhoeffer Works, vol. 6, Minneapolis, MN: Fortress, 2005), 299-338; Karl Barth, *Church Dogmatics* vol IV/1, trans. Geoffrey W. Bromiley (Edinburgh: T & T Clark, 1956), 448.

However, some Lutheran and Reformed thought in the past century has been more positive about the significance of natural law for practical reasoning,[26] and recent years have seen a revival of Protestant interest in natural law thinking, as well as growing ecumenical dialogue between Catholics and Protestants concerning natural law.[27] In a more general sense, some Protestants have taken a positive view of human reasoning about nature – for example arguing, like Wolfhart Pannenberg, that theology cannot operate separately from an understanding of the world informed by science.[28] Even those who are deeply suspicious of autonomous moral reasoning by no means reject all use of practical reason. For Bonhoeffer, for example, in response to the coming of Christ, ethics must be transformed into the task of "discern[ing] what is the will of God" (Romans 12:2); but he is clear that human reason will have an important part to play in this task of discernment in various ways.[29]

"Nature" and the "natural" too have been accorded moral significance even by some of those who have voiced the kinds of suspicion outlined above. Once again Bonhoeffer is a good example, since he develops a theological understanding of nature which allows him (among other things) to give an account of natural rights. The key point is that it is in the light of Jesus Christ that we can understand what is natural, and therefore what natural rights humans are entitled to.[30] And even those who have criticised ideological appeals to "the natural" have not always dismissed every use of "nature" in moral reasoning. Some feminist theological ethicists, for example, call for an appropriate naturalism, which takes our existence as embodied creatures with appropriate seriousness without replicating the patriarchal character of some forms of naturalistic and natural-law reason.[31] These concerns have a clear relevance for some of the practical questions discussed later. What is the normative significance of "natural" patterns of parenthood and family life, for instance, and what ethical implications might this have for practices

26 See *Law and Gospel*, sections 1.6.4, 2.7.

27 Ibid., para. 11.2.2 (4).

28 E.g. Wolfhart Pannenberg, *Toward a Theology of Nature: Essays on Science and Faith* (Louisville, KY: Westminster John Knox, 1993).

29 Bonhoeffer, *Ethics*, 299-338 (fragment "God's Love and the Disintegration of the World").

30 Bonhoeffer, *Ethics*, 171-218 (fragment "Natural Life").

31 Susan F. Parsons, *Feminism and Christian Ethics* (Cambridge: Cambridge University Press, 1996), esp. ch. 10.

that give rise to different forms of parental and familial relationship, such as gamete and embryo donation and surrogacy (chs. 6, 7)?

Within Catholic thought too, recent decades have seen important developments in natural law thinking, and vigorous debates about how the natural law and its significance should be understood. Some theorists have proposed an account that relies neither on religious presuppositions nor Aristotelian thought, claiming instead that the existence of certain "basic human goods" is self-evident, and seeking to infer moral norms from them without violating Hume's is/ought distinction.[32] Others have argued that the Catholic natural law tradition should be understood in a more overtly theological way, and also that it should not be thought of as a system for deriving specific moral norms from self-evident first principles.[33]

Whatever the outcome of those debates, natural law reasoning remains influential in Catholic Magisterial teaching, not least in relation to reproductive medicine. For instance, it informs the statement that artificial fertilisation is always intrinsically illicit (whatever the actual circumstances and medical indication) simply because it is against human dignity and therefore ethically unacceptable "to dissociate procreation from the integrally personal context of the conjugal act".[34] The growing interest in Protestant-Catholic dialogue about natural law, noted earlier, makes it important for Protestants also to be informed about these ways of reasoning about reproductive medicine – though the CPCE document *Law and Gospel* remains cautious, claiming that "Protestant ethics … does not see [the natural law] tradition as sufficient basis for grounding moral judgments in."[35]

32 John Finnis, *Natural Law and Natural Rights* (Oxford: Oxford University Press, 1980). The basic goods identified by Finnis and others are such things as such as life, knowledge, play, aesthetic experience, sociability, practical reasonableness and religion

33 See Jean Porter, *Nature as Reason: A Thomistic Theory of the Natural Law* (Grand Rapids, MI: Eerdmans, 2004).

34 Congregation for the Doctrine of the Faith, *Instruction Dignitas Personae on Certain Bioethical Questions* (2008), para. 16; see also para. 12. Online at http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_20081208_dignitas-personae_en.html (accessed 12 January 2016).

35 Bünker and Friedrich, *Law and Gospel*, para. 11.2.2 (4).

3.3.2. The value of the "natural"

Another more recent development, not only within Protestant ethics, but within Western culture more generally, is the growing awareness of "nature" or "the natural" as something valuable which needs to be protected against human interventions. The ecological crisis has convinced many people that the Enlightenment vision of the subjection of nature to reason is fundamentally misguided and that we need to rethink our relation both to the environment and to our own bodies. "Respect for nature" and "acting in accordance with nature" have become powerful cultural ideals, quite independent from any connection to natural law thinking.[36]

Within this discourse, the central opposition is not between nature and grace, or between reason and revelation, but between nature and technology, between that which has "grown" and that which has been "made".[37] Nature is not so much seen as the realm of immanence but as a sphere (yet) untouched by humans, a complex and delicate evolved system with its own laws and structures.[38] Sometimes, contemporary appeals to the value of nature even carry distinctly religious overtones, personifying nature and imbuing it with divine attributes such as wisdom.[39] In other cases, such as Michael Sandel's well-known critique of eugenics and genetic engineering as "one-sided triumph of willfulness over giftedness, of dominion over reverence, of molding over beholding",[40] one may wonder whether the argument does not implicitly rely on traditional Christian assumptions about the physical world as creation of God.[41]

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36 For a recent overview on how ideas about naturalness figure in public and political debates about science, technology and medicine, see Nuffield Council on Bioethics, *Ideas about Naturalness in Public and Policy Debates about Science, Technology and Medicine* (London: Nuffield Council, 2015). Online at http://nuffieldbioethics.org/wp-content/uploads/NCOB_naturalness-analysis-paper.pdf (accessed 12 January 2016).

37 Cf. Jürgen Habermas, *The Future of Human Nature*, trans. William Rehg, Max Pensky and Hella Beister (Cambridge: Polity Press, 2003).

38 The Nuffield Council's analysis draws attention to the way in which the adjective "natural" is used as a synonym for "normal, pure, real, authentic, organic, unadulterated, untouched, unprocessed"; *Ideas about Naturalness*, 17.

39 Cf. ibid., 58-77.

40 Michael Sandel: *The Case Against Perfection: Ethics in the Age of Genetic Engineering* (Cambridge, MA: Belknap Press 2007), 85.

41 Cf. Michael Banner, *Christian Ethics: A Brief History* (Chichester: Wiley-Blackwell 2009), 101; Neil Messer, *Respecting Life: Theology and Bioethics* (London: SCM Press, 2011), 91-94.

For Christians, this new sensitivity to the givenness of nature and to the limits of human power is a welcome opportunity to engage with the wider culture. They face the challenge, however, of articulating the moral significance of nature in a way consistent with basic Christian teaching: with the belief that nature as we find it is neither in itself divine nor simply identical with "God's good creation", as referred to in Gen 1:31. Nature as we find it is just as much in need of redemption as humanity itself (cf. Rom 8:20ff.). Christians can agree, then, with secular thinkers that "nature, including human nature, isn't all good",[42] and that there is no reason to idealize or romanticize it. They will insist, however, that it is God's prerogative, not humanity's task, to redeem nature and bring it to perfection, especially when it comes to human nature. They will be much more willing to discern traces of goodness and wisdom in the midst of nature's imperfections than somebody who sees nature as the product of a "morally blind, fickle, tightly shackled tinkerer".[43]

This very general account of the moral significance of nature is not sufficient to provide much guidance for the practical questions people face in the fields of science, technology and medicine. The second and much more difficult challenge for Protestant ethics is to discern between those interventions in nature which may be interpreted as part of humankind's cultural mandate (cf. Gen 1:28) and those which go beyond it, trying not only to cultivate nature but to fundamentally improve upon it. There will probably never be a fixed set of criteria for classifying different practices as falling on either side of the divide, and probably no fixed divide, either. One might argue, however, that at least if it comes to fundamental human experiences such as procreation and child-bearing, experiences which concern the very essence of what it means to be an embodied creature, natural methods should enjoy an (albeit defeasible) priority over non-natural ones. That would mean, among other things, that IVF should be used only for sound medical reasons, not as a technological fix for social problems such as the tendency to postpone parenthood because of the (presumed) incompatibility between rearing children and pursuing a career (cf. ch. 4). It would also imply a very cautious stance towards any reproductive technologies which do not just remove or compensate for impairments of natural reproductivity, but completely dissociate reproduction from natural reproductivity (cf. ch. 10).

42 Allen Buchanan, *Better than Human: The Promise and Perils of Enhancing Ourselves* (Oxford: Oxford University Press, 2011), 52.

43 Op. cit., 29.

3.4. Biblical and theological perspectives on procreation

The Bible is full of references to posterity, the desire for children, fertility and infertility. The biblical God is highly interested in them. "Be fruitful and multiply" he tells the humans he has created in Gen 1:28. This is not an order but a word of blessing. Abraham is to become the patriarch of a great people and his wife Sarah will bear a son although she is far beyond the menopause. The same thing happens to Zechariah and Elizabeth, the parents of John the Baptist. Rebecca, Isaac's wife, is infertile at first and then becomes pregnant with God's help and bears the twins Jacob and Esau. Jacob, in turn, later marries the sisters Leah and Rachel. Leah, the unloved wife, has several children, while Rachel, the love of Jacob's life, first remains childless. The biblical narrative interprets this as God's compensatory justice. Hannah and Peninnah, the wives of a certain Elkanah, suffer a similar fate. While Peninnah has children, Hannah, whom Elkanah adores, remains barren (1 Sam. 1).

In Old Testament times, undesired childlessness was not just considered a fate imposed by God but also as a social defect. The Psalms constantly repeat this refrain. Just as Hannah pours out her heart in prayer, and later, with God's assistance, bears the Prophet Samuel, many praying men and women deplore their suffering from childlessness in the Psalms (Ps 6; 17; 31). Those affected feel "languishing" (Ps 6:2a), "passed out of mind like one who is dead" and "like a broken vessel" (Ps 31:12), while according to Ps 17:14 God fills the "wombs" (ESV) of others, and "they are satisfied with children" (ESV).[44] The psalms also bemoan miscarriages.

In order to beget more children of their own, people in the Bible by no means relied only on prayer. Polygamy was an accepted institution in Old Testament times. In addition, wives had handmaids, whose children were legally regarded as the biological children of the wives. Before the elderly Sarah became pregnant after all, Abraham had a son, Ishmael, with Hagar, Sarah's slave. Rachel, also childless, also became a mother this way, when Bilhah her maid had two sons by Jacob. Rachel only became pregnant herself thanks to a special fruit called mandrake, or love-apple (Gen 30:14ff).

44 For this translation and interpretation, which is not the only one but a possible reading, represented by several Old Testament scholars, see Marianne Grohmann, *Fruchtbarkeit und Geburt in den Psalmen* (FAT 53, Tübingen, 2007), 287ff.

Hannah become pregnant after vowing that her son would be dedicated to God and brought up in the Temple. The same thing happened at the birth of Samson (Judg. 13). Widowed women were married to the brother of the deceased and, along with their children, were regarded as survivors of the dead man (Gen. 38).

Of course, these biblical reminiscences are not meant as an argument for introducing polygamy or other practices from a distant cultural age. Norms for marriage and family relationships in contemporary Christian life cannot simply be read off descriptive or narrative texts from the Old Testament. However, they may be understood as an indication of how seriously unfulfilled wishes for a child were taken in biblical tradition. "Even if the wish for a child in its present, individualised form is a recent phenomenon and the motives of Rachel and Hannah were different from those of modern women, there is a parallel in the unconditionality, urgency and totality of this wish."[45] Furthermore it becomes clear that the strict linking of biological parenthood to the natural sexual act between married couples, as is primarily demanded by the Roman Catholic magisterium, cannot be derived in a strict way from the Bible.

The theological reflection on the questions linked to modern reproductive medicine need not look only to Old Testmant tradition for guidance. Rather, these questions must be pondered on in the light of the New Testament. Marriage, family and posterity in the New Testament have an eschatological proviso. Paul writes in 1 Cor 7:31 that the "present form of this world is passing away". In view of the expected return of Christ, Paul gives preference to celibacy and thus childlessness over marriage and the family. Jesus himself was not married and had no children. It is not his natural family, his biological parents and siblings who are his brothers, sisters and mother, but those who do the will of God (Mk 3:35). His disciples are to strive for the Kingdom and its righteousness, not to keep a family and earthly descendents (Mt 6:33).

Such central statements in the New Testament may possibly be helpful for the pastoral care of couples who are involuntarily childless and suffer for that reason. Admittedly, Luke 1 refers to the childlessness of Zechariah and Elizabeth who, thanks to divine intervention, have a child in their old age – John the Baptist. Moreover, like Samuel in the Old Testament, John is to be raised as a Nazirite and will be a great prophet. But unlike the Old Testament

45 Ibid., 329.

narratives, it is not the ending of childlessness that is the focus of the story, but the preparation for the coming of the Messiah and the dawn of the eschatological kingdom of God, in which marriage and the family no longer have the same importance. The value of a person, particularly of a woman, does not depend on whether she can have children or not. A modern reader might therefore find encouragement in these texts to think that meaningful lives, including fulfilled loving relationships and marriages, are also possible without children. A person accepting that she is not going to have children can find meaning and satisfaction in other activities.

The hierarchical households described in Eph 5:22-6:9, Col 3:18-4:1 and 1 Pet 2:18-3:7 and also the deutero-Pauline pastoral letters reflect a situation in which Christians found families and have children. 1 Tim 2:15 claims that women "will be saved through childbearing, provided they continue in faith and love and holiness". This statement is related to the idea that women are not to be allowed to teach at public worship. Such statements and the underlying patriarchal relationship of the sexes must first be considered in their historical context and then subjected to theological critique in the light of the whole biblical testimony. They must therefore not be cited in a Biblicist manner in a discussion today on childlessness and reproductive medicine. What these texts do, however – despite their highly problematic features, which must be fully acknowledged – is to reflect early Christian communities and forms of life in which Christian people continue to have and raise children, and are exhorted to do so in a manner consistent with their Christian commitment. The relevance of these texts to our present discussions is not that they are a source of norms concerning reproduction and childlessness, to be read into an ethical evaluation of reproductive medicine. Their relevance may instead be that they reflect a positive Christian valuation of marriage, family life and procreation, which must be read alongside the eschatological proviso and held in tension with it. To repeat: the *forms* of family life and parenthood commended in such texts need not and should not be simplistically treated as normative for our present-day discussions. But the *fact* that parenthood and family life are commended may have an ongoing significance. While the eschatological proviso shows that family life and procreation are no longer of ultimate importance in the light of Christ, texts such as the household codes can remind us that family life and procreation have an ongoing *penultimate* value as spheres of life in which is is possible to serve God and love one's neighbour – as the Reformers understood very well.

Wishing for and having children are no longer a matter of course in western societies. There has been a steep drop in the birthrate in the heart of Europe

but also in southeast European states in the last few decades. Intentional childlessness is far from being an exception now. Family planning and birth control have become the object of individual decisions and personal life planning. Couples, and particularly women, may put off having children for years for a variety of reasons. Then, when they finally feel ready, they are particularly shocked when their wish for a child is not fulfilled. Very often the activities and facilities of churches and congregations one-sidedly address families and couples. Inadvertently childless people may have the feeling that their special needs and interests are ignored by the church.

The unfulfilled wish for children may not just be a personal trauma that burdens a relationship. It may also be felt as a social stigma. Until the 1970s, biological reproduction – to deliberately use a technocratic expression – was strongly promoted in western societies. Childless couples who did not fit the societal ideal felt discriminated against. As marriage and children have lost their automatic character since the 1980s, new forms of life together, and of being single, have become increasingly accepted. Yet family and population policy is still geared to motivating citizens to have children. In some European countries such as Germany, nightmare visions of nation states dying out have haunted the media, while compensating for the population decline through increased migration is highly controversial. Against this background, inadvertent childlessness can therefore still be a great psychological strain, because those who experience it do not correspond to an ideal of marriage and the family that remains influential. Even close relationships in the family and friends suffer when some are blessed with children, while others' wish for a child of their own remains unsatisfied. While some concentrate entirely on children and family life, others remain alone, which may be particularly hard when they have less social life and less interest in the forms of entertainment of their youth.

Therefore dealing with undesired childlessness is not only an ethical question but also a pastoral issue for churches and theologians. The pastoral considerations raised and the responses required will, of course, depend on the churches' theological and ethical evaluation of reproductive medicine. But pastoral experience may also inform the theological and ethical evaluation, and at the very least it should make a difference to the ways in which that evaluation is communicated and put into practice. Some Christians will have grave reservations about in vitro fertilization, or even reject it altogether, because it is associated with the destruction of human embryos (a stance familiar from Roman Catholic magisterial teaching, but also found within Protestant churches). Those in positions of pastoral leadership who hold

this view may be duty-bound to advise their flocks accordingly; but in view of the biblical themes and social context surveyed above, it would be hard-hearted and unfair to accuse couples hoping for the assistance of modern reproductive medicine of being selfish and lacking humility. On the other hand, in the light of the pastoral experience of undesired childlessness, many Protestants will be inclined to welcome reproductive medicine as a way to satisfy a deep longing to have children. Yet in doing so, they must also consider how to respond to concerns that reproductive technologies fail to respect the status of embryonic human life, or undermine human dignity by dissociating sex from procreation (considered further in sections 3.5 and 3.3 respectively).

3.5. The moral status of the human embryo

Many of the technologies discussed in later sections of this guide involve the destruction of human embryos. It is common practice in IVF to fertilize more eggs than are needed for implantation in the mother's womb (ch. 4). The resulting surplus embryos may be cryopreserved for months or years (ch. 5), but if they are not wanted for implantation by their biological parents, sooner or later the question of what should be done with them will arise. Should they be donated to other women or couples who wish to conceive (ch. 6), used for research (ch. 9) or simply allowed to die? Pre-implantation genetic diagnosis (PGD, ch. 8.2) often involves screening embryos generated by IVF for genetic diseases. Those found to have genetic disease markers will not be implanted in any intending mother's womb, but will either be discarded or used for research. Moreover, the development of IVF and other reproductive technologies has relied on human embryo research. In short, reproductive medicine as currently practiced is associated in various ways with the destruction of human embryos, and therefore we cannot avoid the question whether such destruction of embryonic human life is morally justified.

Since the early 1970s, the concept of "personhood" has been routinely used in bioethics to try and settle such questions.[46] A distinction is made

46 E.g. Mary Ann Warren, "On the Moral and Legal Status of Abortion", *The Monist* 57.4 (1973). Some bioethicists use alternative terms – for example, Joseph F. Fletcher talked about "indicators of humanhood" rather than "indicators of personhood" (e.g. "Four Indicators of Humanhood – The Enquiry Matures", *Hastings Center Report* 4 [December 1975]: 4-7) – but even where the terminology differs, the structure of the arguments is essentially the same.

between "human beings" and "persons." Persons are "members of the moral community," with the claim to moral regard that we normally acknowledge in (most of) our fellow-humans. A person is recognised by a checklist of criteria such as rationality, self-awareness, the capacity for relationships and the capacity to have preferences or interests. On this understanding of personhood, a non-human entity who met all or most of the criteria would be a person, whereas a human being who met few or none of them would not. This account is used to support a "gradualist" view in which human individuals gradually acquire the characteristics that lead us to recognise their personhood in the course of embryonic and foetal development. On the gradualist view, embryos are at a very early stage of this process: they meet virtually none of the criteria for personhood and do not (yet) count as persons. Therefore they are not entitled to the same moral regard as persons – though they may have some moral significance by virtue of being *potential* persons – and their destruction in the course of fertility treatment, genetic screening or research can be justified by the harms prevented or benefits gained.

This view has become received wisdom in much public debate (at least in English-speaking countries), sometimes backed up by powerful and emotive rhetoric. So those who raise moral objections to human embryo research may be presented as placing idiosyncratic, "religiously motivated" moral scruples ahead of compassion for couples longing to conceive or patients with life-threatening diseases.[47]

A very different view of personhood is found on the other side of the debate. Roman Catholic teaching documents ask, "How could a human individual not be a human person?"[48] The refusal to distinguish between "human beings" and "persons," implied by this rhetorical question, is sometimes

47 For example, during debates about the revision of the British Human Fertilisation and Embryology Act in 2008, one journalist welcomed a Parliamentary vote with this comment: "As cybrids [a form of human-nonhuman hybrid embryo, to be discussed further in ch. 8 below] are supported by all the country's leading scientific institutions, a ban would have suggested that this considered consensus matters less to Parliament than the vocal concerns of a religious minority." Mark Henderson, "Benefits Are Years Off, but it's a Victory for Scientific Freedom", *The Times* (20 May 2008), 4.

48 John Paul II, *Evangelium Vitae* (25 March 1995), para. 60, online at http://w2.vatican.va/content/john-paul-ii/en/encyclicals/documents/hf_jp-ii_enc_25031995_evangelium-vitae.html (accessed 12 January 2016), quoting Congregation for the Doctrine of the Faith, Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation Donum Vitae (22 February 1987), I, No. 1.

(though not always) informed by an Aristotelian-Thomist metaphysic: what makes a human person is the presence of a human soul, which gives the matter of the body a distinctively human form. The presence of a human soul is not something that could be established by a checklist of criteria. On this view a human embryo is *not* a non-person or even potential person, but a human person at the earliest stage of his or her development.[49]

Similar debates take place within Protestant ethics. For example, a counterpart to the first view of personhood can be found in the argument of Hartmut Kreß, that the developmental characteristics of prenidation embryos (lack of genuine individuality, lack of *Gestalt* etc.) count against granting them the same level of protection as postnidation embryos.[50] Other prominent Protestant ethicists also argue on biblical grounds that such positions are possible, and that ethical decisions (for example about the use of spare embryos for stem cell research) do not depend only on the question of the embryo's ontological and moral status.[51] By contrast, Wilfried Härle (for example) maintains that the human embryo is a human being with human dignity from fertilisation onwards,[52] and likewise the American Lutheran Gilbert Meilaender argues that "the human embryo is fully deserving of our moral respect and that such respect is incompatible with its deliberate destruction in research."[53] Documents from CPCE member churches reflect a similar range of convictions.[54]

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49 Craig Payne, *Why a Fetus is a Human Person from the Moment of Conception: A Revisionist Interpretation of Thomas Aquinas' Treatise on Human Nature* (Lewiston, NY: Edwin Mellen, 2010); Robert P. George and Alfonso Gómez-Lobo, "The Moral Status of the Human Embryo," *Perspective in Biology and Medicine* 48.2 (2005): 201-210 (though the latter does not refer explicitly to an Aristotelian-Thomist doctrine of the soul).

50 Cf. Hartmut Kreß, *Medizinische Ethik. Kulturelle Grundlagen und medizinische Wertkonflikte heutiger Medizin* (Stuttgart: Kohlhammer, 2003), 123-25.

51 See Reiner Anselm and Ulrich H.J. Körtner (eds.), *Streifall Biomedizin. Orientierung in christlicher Verantwortung, mit einer Einführung von T. Rendtorff* (Göttingen: Vandenhoeck & Ruprecht 2003); Ulrich H.J. Körtner, *„Lasset uns Menschen machen". Christliche Anthropologie im biotechnologischen Zeitalter* (München: C.H. Beck 2005).

52 Cf. Wilfried Härle, *Ethik* (Berlin/New York: De Gruyter, 2011), 253ff.

53 Gilbert C. Meilaender, "Statement of Professor Meilaender," in President's Council on Bioethics, *Human Cloning and Human Dignity: An Ethical Inquiry* (Washington, DC: President's Council on Bioethics, 2002), 288-91, at 290. Online at https://bioethicsarchive.georgetown.edu/pcbe/reports/cloningreport/ (accessed 7 September 2015).

54 E.g. Joint Public Issues Team, *Created in God's Image: An Ecumenical Report on Contemporary Challenges and Principles relating to Early Human Life* (2008), available online at http://www.methodist.org.uk/conference/conference-reports/2008-reports (accessed 7 September 2015).

It is clear that underlying these debates about the moral status of the embryo are fundamental philosophical and ethical disputes about what underwrites the moral status of *any* individual. Both of the positions outlined above depend on philosophical presuppositions. It is a misrepresentation to present one as a "religious" (and by implication, non-rational or irrational) view, and the other as the default rational position, as is sometimes done. In fact, examination of these disputes suggests that arguments about personhood are ill-adapted to settle the questions, because concepts of the person are themselves disputed and different definitions will give radically different results. Maureen Junker-Kenny, for example, has observed that arguments about personhood are often caught in a 'hermeneutical circle': disputants on all sides of the debate tend to select the definitions of 'person' that will give the results they desire about the status of the embryo.[55] This problem may be attributable to the complex intellectual history of the concept of person: in its origins in Trinitarian and Christological argument, it was not designed to do the kind of ethical work it is made to do in modern bioethical debate. It was only after John Locke's quite radical re-invention of the concept in the seventeenth century that it could serve as a criterion by which to set the boundaries of the moral community.

In any event, Christians may have significant concerns about such a use of the concept of "person." One is that it privileges abilities and qualities such as rationality and self-awareness as criteria for identifying those of our fellow-humans who are worthy of moral regard. Similar criteria have in the past been used to marginalize women and people of colour, and today they are used similarly in relation to severely disabled people (especially those with cognitive impairments), older people with dementia, and others. This of course is not a knock-down argument against using such criteria in bioethical argument, but it should give Christians pause, committed as they are to care for the vulnerable and marginalised.

A second concern might be with the very *attempt* to find boundary-setting criteria for membership of the moral community. Various commentators on Jesus' exchange with the lawyer in Luke 10:25-37 argue that the lawyer's question, "Who is my neighbour?" functions in just this way: he seeks a criterion for discriminating between those he is, and those he is not, obliged to love. On this reading of the text, Jesus' response with the parable of the

55 Maureen Junker-Kenny, "Embryos in vitro, Personhood, and Rights", in *Designing Life? Genetics, Procreation and Ethics*, ed. Maureen Junker-Kenny (Aldershot: Ashgate, 1999), 130-58.

Good Samaritan subverts the lawyer's boundary-setting project by refusing to answer his question and instead re-framing it. The question is no longer, "Who is my neighbour?" but, "How am I called to *be* a neighbour to those whom I encounter?" By analogy (the argument goes), Christians should also refuse the boundary-setting aim implicit in the modern bioethicist's question, "Who is a person?"[56]

There might be different views, though, on how far this criticism can and should be taken. A more moderate version of the criticism would be concerned, first and foremost, with the danger of excluding certain human beings from the sphere of moral concern, or of according them a lower moral status than others. This approach would insist that commitment to the equal dignity of each and every human being (or at least of every human being after birth), grounded in God's creative and redemptive love for him or her, must stand at the beginning of any reflection on the problem of moral status. For those who take this approach, the main question would be how far, and in what way, the moral concern that we owe to our fellow-humans can be extended to other creatures without running the risk of becoming incoherent. To put the question in terms of the passage from Luke quoted above: Can we really be neighbours to all of God's creatures, including animals, plants and stones, or does the concept of 'neighbour' lose its point if we use it that way? There might well be different answers to this question, and different arguments to support these answers, both with regard to non-human beings (an issue which we are not going to dwell upon any further here) and to human beings before birth. For example, one might argue that, given the potential of the embryo to become a fully developed human being, there is no reason to treat human embryos differently from human beings after birth. Alternatively, one might hold that the early embryo is too abstract and impersonal an entity to care for in the same way that we care for human beings after birth, or during later stages of pregnancy. As these two possible lines of argument show, this more moderate version of the approach in question does not completely refrain from drawing comparisons between different kinds of beings, and from postulating morally relevant distinctions.[57] Its

56 E.g. Richard B. Hays, *The Moral Vision of the New Testament: Community, Cross and New Creation* (New York, NY: HarperCollins, 1996), 451; Ian A. McFarland, "'Who Is My Neighbor?' The Good Samaritan as a Source for Theological Anthropology", *Modern Theology* 17.1 (2001): 57-66.

57 These distinctions need not be made in terms of the inherent properties of the beings in question, but may just as well refer to different ways in which these beings are related to us, or we to them.

main impetus is to expand the sphere of moral concern, but in the face of conflict between different kinds of beings and their interests, it is prepared to say that some might have a stronger claim to protection than others.

A more radical approach would argue that *any* attempt to define the boundaries of the moral community, or to draw a distinction between beings with stronger and weaker claims to protection, is misguided. The challenge, then, would be to find some way of thinking about our obligations in respect of embryos that does not depend on such an attempt. Those who want to take such a position might, for example, begin by recognising that life is the good gift of God the Creator – a gift which comes with a call to celebrate, respect and protect it wherever we find it.[58] If this is our starting point, the central question in relation to the moral claims of the human embryo becomes: What does it mean to celebrate, respect and protect God's good gift of life in the painful and sometimes tragic situations that reproductive medicine or human embryo research are intended to address? What makes this question difficult to answer is that some of these situations – though not all of them – seem to involve conflicting claims on the part of different human lives. The longing of intending parents to receive the gift of new life, in the form of a child of their own, might only be satisfied by using IVF and inviting the possibility that surplus embryos will result. More sharply, research on human embryos or embryonic stem cells might offer the best prospect of therapies for severe conditions such as Parkinson's disease.

If one uses personhood to define the boundaries of the moral community and adopts a "checklist" approach to identifying persons, these questions are relatively easy to resolve. One is likely to say that human embryos are not (yet) human persons; their destruction might not be entirely morally insignificant, but it is easy to see it as outweighed by the benefit of a wanted pregnancy or a therapy for a severe disease. If, on the other hand, there are biblically- and theologically-grounded reasons why Christians should be unhappy with this approach, can we find more satisfactory ways of discerning between these conflicting claims?

If the category of "person" fails to supply satisfactory criteria for this exercise of discernment, a more biblically and theologically satisfactory category might be "neighbour" – provided it is not used as a device for limiting the bounds of our moral concern, in the way implicitly criticised by

58 Cf. Karl Barth, *Church Dogmatics*, vol III.4, trans. A. T. MacKay et al. (Edinburgh: T & T Clark, 1961), §55.1.

Jesus in Luke 10:25-37. So the question is no longer, "Is the embryo a person?" but, "How are we called to act as neighbours towards those whom God has given us to love?"[59] If the aim in using this question is to avoid covertly or overtly using a "checklist" approach to identify those worthy of our moral concern, then it will be important to remember that those to whom God has called us to be neighbours could include human embryos as well as couples longing for a child of their own, infants at the centre of surrogacy disputes, children with genetic disorders or adults with conditions like Parkinson's disease. This is an unfamiliar line of thought to many modern minds, and it may seem counter-intuitive to think that we might be called to love embryos. But if it does seem counter-intuitive to think in this way, perhaps we should ask ourselves whether this reflects particular limitations or biases in the ways we understand what it means be a neighbour to another. It is also worth remembering, as noted above, that there have been times in the history of Western societies when those with power and privilege have found it counter-intuitive to regard others (such as slaves, women or foreigners) as neighbours to be loved or subjects worthy of equal moral regard.

The main purpose of this discussion has been to raise critical questions about the dominant approach to ethical reasoning about human embryos in current debates, and demonstrate that there is a wider range of possible approaches that should be taken seriously by Protestants. It has not offered much specific guidance on how embryos should be treated. Indeed, this could be an important consequence of using the Good Samaritan story as a starting point for such ethical reflections. In his exchange with Jesus, the lawyer is not given much specific guidance on what it will entail to love his neighbours: he rightly recognises that it will mean showing them "mercy" or "compassion," and is simply told: "Go, and do likewise" (Luke 10:37). Perhaps one of the lessons to learn from this story is that we shall not discover everything we need to know about our obligations to fellow human beings by placing them in the correct category and determining how members of that category (in general) are to be treated.[60] Many of our obligations to particular fellow

59 For uses of this approach which draw contrasting practical conclusions, see Brent Waters, "Does the Human Embryo Have a Moral Status?", in *God and the Embryo: Religious Voices on Stem Cells and Cloning*, ed. Brent Waters and Ronald Cole-Turner (Washington, DC: Georgetown University Press, 2003), 67-76, and Messer, *Respecting Life*, ch. 4.

60 McFarland, "Who Is My Neighbor?", 63-64. Note: the point is that we shall not learn *everything* we need to know about our obligations in this way. There may be some things that correct categories *can* teach us: for example, that fellow human beings, as human beings, have a universal right to life.

human beings are context-dependent and shaped by the specific human relationships we have with them.[61] Again, it might seem counter-intuitive to extend a line of thought about human relationships to embryos generated by IVF, because the technical language of "embryo," their obvious differences from more developed human individuals, their location in Petri dishes or freezers, and the fact that they have come into being by means of scientific technique all conspire to distance us from any sense of relationship with them. But we were all embryos once, and a good many of us were embryos *in vitro*. We have at least that much in common with them.[62]

We have not stated one single position as *the* Protestant ethical position on the status of the human embryo. As we stated in the Introduction, our general aim is to map out a "corridor" of Protestant positions on the questions we are addressing, which will in some places be narrower, and in others wider. How wide should it be at the point when we consider the status of human embryos? It is probably too early to say. In one sense we have tried to widen it by articulating positions often forgotten or ignored in these debates; but these positions remain contested within Protestant ethics.[63] It will require further careful discussion and deliberation to learn how wide or narrow the Protestant "corridor" ought to be – or to put it another way, what are the legitimate limits of communicative freedom in a Protestant perspective – when the status of human embryos is under discussion. The practical consequences of these debates for the treatment of human embryos will come into view in several of the chapters later in the Guide (especially chs. 4, 5, 6, 8 and 9).

61 This is not to say, of course, that there are no general or universal moral rules. For example, we are familiar with the principle that it is always wrong to kill an innocent human being; one of the vexed questions in present debates, of course, is whether that principle extends to human lives at the earliest stages of their development. It would be a mistake, therefore, to use this insight as a reason to deny the validity of universal human rights.

62 That other summary of the Law quoted by Jesus, "Do to others as you would have them do to you" (Luke 6:31), might also be mentioned in this context.

63 Indeed, there was ongoing debate on these questions among the members of the Expert Group on Ethics.

3.6. Contemporary concepts of reproductive autonomy and the best interests of the child

As already stated (section 3.1), having biological offspring enjoys high status in the Old Testament. Children are seen as a blessing from God and undesired childlessness is considered not only a divinely imposed destiny, under which the women concerned suffer most, but also a societal stigma. Hannah is one biblical character who laments this bitterly, but she later has a child when God hears her prayer (1 Sam. 1). The importance attached to biological offspring is significantly qualified in the New Testament, however, by the eschatological proviso noted earlier.

In modern law the right to marry and found a family is recognised in human rights instruments.[64] According to prevailing legal doctrine, the right to reproductive or procreative autonomy must first be understood as a right calling for state protection. Accordingly, no one has the right to prevent anyone from having their own children. In this connection the dark chapter of forced sterilisations comes to mind. Eugenically founded forced sterilisations took place in the twentieth century not just in Germany during the Nazi period but also in the USA and Canada, in Scandinavia into the 1970s and in Switzerland even into the 1980s. In China and India forced sterilisation was undertaken as a means of birth control for reasons of population policy. Wherever interference with reproductive autonomy took place with church approval (for example in diaconal institutions) the churches and their social service organisations violated the dignity of people with disabilities.

However, some modern interpreters – though by no means all – understand the right to reproductive or procreative autonomy not just as a right to be protected by the state but also as a participatory right.[65] According to this view, people have a right of access to the currently available facilities for reproductive medicine. This principle applies at least with respect to undesired childlessness. If one adopted this view, then providing the same access for couples who wish to have their own children, independently of

64 *Universal Declaration of Human Rights*, art. 16 (1); *European Convention on Human Rights*, art. 12.

65 One legal scholar who challenges this view is Ruth Deech, former Chair of the UK Human Fertilisation and Embryology Authority: "Human Rights and Welfare" (lecture delivered at Gresham College, London, 11 May 2009), online at http://www.gresham.ac.uk/lectures-and-events/human-rights-and-welfare (accessed 7 September 2015).

their social status and economic potential, would be a matter of justice. This would also raise the question whether equal access to reproductive medicine required support on theological as well as legal or moral-philosophical grounds.

However, the question is how far the right to reproduction goes, how far reproductive autonomy extends and to what extent people wanting children can claim assistance from the whole of society and the health system? Do reproductive rights also include the right to certain children? The right to define the child's sex, or hair colour, or cognitive and physical qualities? Is there a right to a healthy child? And in order to implement this supposed right, can embryos be selected in a test-tube or foetuses aborted if they bear a disease, disability or only a genetic predisposition for a possible disease in later years?

These questions bring us back to concerns about eugenics. The principle of respect for reproductive autonomy arose (at least partly) in reaction against coercive forms of state eugenics, and it is seen as a safeguard against them. Yet it may actually encourage the drive towards a different form of eugenics, referred to as "liberal eugenics". By this is meant parental choices to use genetic and reproductive technologies in the attempt to ensure that their children have physical and mental characteristics deemed desirable.[66] This form of eugenics is *liberal* in that it is chosen by individual parents, in pursuit of goals that they have identified as good, rather than being coercively imposed by a state or other authority. Supporters argue that this fact makes all the difference, freeing liberal eugenics from the moral opprobrium rightly attached to state eugenics. While some argue merely that parents should have the *liberty* to choose eugenic interventions, others go further and claim that some such interventions are morally obligatory – though they stop short of advocating coercion. Critics of liberal eugenics, however, raise various kinds of concern. One is that the practice of liberal eugenics could collude with, and reinforce, discriminatory social attitudes and practices, such as discrimination against people with disabilities. Another is that it could have unintended harmful consequences. A third is that it is expressive

66 These could include freedom from diseases, but also desirable characteristics not associated with disease such as the child's sex, or particular abilities or physical features. Many such parental hopes and aspirations may be a long way from being technically achievable at the present time – though some, such as sex selection, are present realities.

of a "drive to mastery" over human lives, which could undermine important features of the moral character of communities and societies.[67]

An ethic guided by biblical testimony will judge cautiously about these matters. The wish for a healthy child is understandable and justified, as long as it does not lead to discrimination against people with disabilities and a questioning of the right to life of children with physical or cognitive impairments. For example, the fact that in Europe today around 90 percent of all children with Down's syndrome are aborted is deplorable from the standpoint of a biblically founded ethic and should be criticised.[68]

As the CPCE's *A Time to Live and a Time to Die* noted, the idea of autonomy plays a major role in present-day medical ethics. This is a complex concept, however, and its various meanings cannot be easily distinguished. The CPCE document states:

> Within secular, philosophical medical ethics, two somewhat different meanings of autonomy prevail. … A Kantian conception understands autonomy as self-legislation and the ability to act according to a rational law of universal principles, rather than according to contingent impulses or external pressure. Moreover, it is the capacity for this kind of autonomous action that defines an end in itself, and which therefore commands that a human being is always also treated as an end in itself, and never only as a means to an end. Another conception of autonomy sees it is as the ability to act from one's inner preferences, interests and projects. Autonomy thus understood allows the human being to express and realise inner potential and act according to individual aspirations and values. Autonomy as it features in secular medical ethics is certainly not irrelevant to protestant ethics, but another notion is more fundamental, namely the notion of freedom.[69]

67 For a survey of arguments about liberal eugenics, see Sara Goering, "Eugenics", in Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2014 Edition), online at http://plato.stanford.edu/archives/fall2014/entries/eugenics/ (accessed 30 September 2016).

68 For termination rates, see (e.g.) Caroline Mansfield, Suellen Hopfer and Theresa M. Marteau, "Termination rates after prenatal diagnosis of Down syndrome, spina bifida, anencephaly, and Turner and Klinefelter syndromes: a systematic literature review", *Prenatal Diagnosis*, 19.9 (1999), 808-12; J. K. Morris and A. Springett, *The National Down Syndrome Cytogenetic Register for England and Wales 2012 Annual Report* (London: Queen Mary University of London, Barts and The London School of Medicine and Dentistry, 2014).

69 *A Time to Live and a Time to Die*, 72.

The concept of freedom is meant in the sense described above, however: seeing people as defined in relation to God, and understanding freedom always in connection with love, justice and responsibility. In the context of reproductive medicine, this will mean (among other things) that the reproductive autonomy of intending parents meets its boundaries where the welfare of their future children is at stake, as will be discussed in sections 4.5 and 6.5. Fundamentally the autonomy of the parents is limited by the autonomy of the child. The parents do not simply have a right to a child, or to have a child: children also have rights, with respect to their vulnerability, their best interests and welfare – all the more so if the technical surroundings could have consequences for their whole life. Moreover, autonomy can only develop in a society that recognises and enables this autonomy. That means, of course, that this autonomy also includes an obligation to respect others and society.

The concept of relational autonomy, as developed in feminist ethics, opposes the abstraction of an individualist understanding of autonomy.[70] The basic idea behind this concept is that "persons are socially embedded and that agents' identities are formed within the context of social relationships and shaped by a complex of intersecting social determinants" – a thought that can be traced back through philosophical traditions such as the dialogical personalism of Rosenzweig, Buber and Ebner (which, in turn, influenced important twentieth century theologians such as Gogarten, Brunner and Barth) to the Old Testament. According to this tradition, human beings are relational beings; an "I" cannot exist without a "you". Modern developmental psychology and psychoanalysis also point out that the human self in its individuality is always a social self as well. The concept of relational autonomy says that the self, even when self-regulating, always depends on other selves. That also applies to medicine and care, and thus to modern reproductive medicine.

Autonomy can be a difficult freedom. It may be far from easy to combine two rights, the autonomy of parents and the autonomy of the child, taking into account Christian freedom. Hence it is necessary and helpful for the mother or the parents to be accompanied by a doctor and nursing staff, but

70 C. Mackenzie and N. Stoljar, eds., *Relational Autonomy: Feminist Perspectives on Autonomy, Agency, and the Social Self* (Oxford: Oxford University Press, 2000). According to Mackenzie and Stoljar, the concept of relational autonomy was first formulated from the feminist angle by Jennifer Nedelsky: C. Mackenzie and N.Stoljar, "Introduction: Autonomy Refigured", in Mackenzie and Stoljar, *Relational Autonomy*, 3-34, at 26, note 1.

also by society as a whole – and as desired, by the church. Certainly, the church sees its mission as witnessing to the will of God and giving guidance and support. But it also has the responsibility to accompany mothers and parents in individual cases and, in their unique situation, to stand by their decision and not to judge, let alone condemn them.

3.7. The Church and the public realm

CPCE member churches exist in a wide variety of contexts, with great differences in their history, culture, political and constitutional arrangements, the churches' relationship to the state and civil society, etc. Yet nearly all are located in democratic states which are to a greater or lesser extent religiously and culturally plural. In any such situation, questions arise about the relationship between the church's faith and practice, on the one hand, and the state's law and public policy, on the other. These questions can be asked from different points of view. From the perspective of the political system (so to say), the question might be: What part should religious institutions, people and beliefs play in shaping law and public policy? From the perspective of the church, we might ask: Whom should the church be addressing on ethical questions: only its own members, or also legislators and policymakers, members of professional groups, or all members of society? What forms of language and argument should it use in addressing these various audiences, and to what end – what should it be aiming for in its interventions in ethical debates?

3.7.1. The perspective of the political system

In recent years, much of the discussion about the first question has focused on the role of religious or theological reasoning in public and political debate. The predominant view, influenced by theorists like Jürgen Habermas and John Rawls, has denied that religious arguments should influence legislation or policymaking in a liberal democracy.[71] Religious *people* might have a welcome contribution to make to these debates, but if they wish to contribute they must be ready to "translate" their religious reasoning into secular arguments (Habermas), or engage in a form of "public reason" whose arguments do not depend on particular "comprehensive doctrines" such as

71 Habermas, *The Future of Human Nature*, 109; John Rawls, *Political Liberalism* (expanded ed., New York, NY: Columbia University Press, 2005).

religious belief systems (Rawls).[72] (To illustrate the point: according to this view a Christian cannot expect to have any influence on public bioethical debates if she uses the argument – for example – that all humans have inviolable dignity because they are made in God's image. If she wants others to pay attention to her arguments she must base them on secular principles like the requirement to respect all persons as ends in themselves.) Such a view would also be suspicious of religious *institutions*, as such, having influence in the legislative and policy process.

The various forms of this view have received considerable challenge. The requirement to avoid religious reasoning in relation to law and policymaking has been criticized as unjustly coercive, because some religiously-based reasons might be translatable into secular terms but others might not. If the latter are excluded from the public arena in principle, then people whose convictions are profoundly shaped by such reasons are in effect held back from participating fully in democratic processes. It has been argued that instead, respectful debate about law and policy is better served when the participants in that debate are able to be open about the reasons for the positions they hold.[73] In response, both Habermas and Rawls have modified their positions somewhat – though how much is a matter of dispute among their readers. Others (including, but not only, theologians) have argued that some religious and theological argument should be recognised as forms of "public reasonableness" (as Nigel Biggar puts it), entitled to be heard and considered in public debates about law and policy.[74] To refer back to the earlier illustration, this view would suggest that a Christian arguing for human dignity on the basis of the *imago dei* should be entitled to a hearing from others in public debate, provided she can give a reasonable account of the argument and its implications, and is prepared to bring it into a genuine dialogue with other arguments and perspectives.

72 For a statement of a similar position, welcoming the contribution of religious people but rejecting the use of religious reasons, see Mary Warnock, "Public Policy in Bioethics and Inviolable Principles," *Studies in Christian Ethics* 18.1 (2005): 33-41.

73 E.g. Nicholas Wolterstorff, "The Paradoxical Role of Coercion in the Theory of Political Liberalism." *Journal of Law, Philosophy and Culture*, 1 (2007): 101-25; Jeffrey Stout, *Democracy and Tradition* (Princeton, NJ: Princeton University Press, 2004).

74 See Jonathan Chaplin, *Talking God: The Legitimacy of Religious Public Reasoning* (London: Theos, 2008), online at http://www.theosthinktank.co.uk/files/files/Reports/TalkingGod1.pdf ; Nigel Biggar, *Behaving in Public: How to Do Christian Ethics* (Grand Rapids, MI: Eerdmans, 2011), ch. 3.

3.7.2. The perspective of the church

The second set of questions identified above is asked from the church's perspective: who are its audiences; how should it address them; what should it be aiming to achieve?[75]

In relation to reproductive medicine, CPCE member churches are likely to find themselves addressing various *overlapping* audiences, which may include:

- their own members (including those seeking moral and pastoral guidance about their own use of reproductive medicine);
- health care professionals and biomedical researchers;
- legislators, policymakers and regulators;
- citizens and voters, who participate in public discussions concerning policy and law, and who may have various personal connections with reproductive medicine, for example as successful or unsuccessful users of reproductive technologies, or as children born as a result of those technologies.

It is appropriate that they should seek to address such diverse audiences, since the church is called to assume responsibility in a spirit of love not only for its own members, but also for the societies and communities in which it is set (see above, section 3.4). Even the most radically counter-cultural views of public engagement described below envisage an audience beyond the faithful: for Stanley Hauerwas, for example, the church offers its best service *to the world* when it most faithfully fulfils its calling to be the (distinctive, counter-cultural) church.

The church's relationships to these diverse audiences will of course be different, even when those audiences include the same individuals. A church member might have one set of questions for her church when deciding whether and how she as a Christian should make use of fertility treatments. The same person may have different questions when acting in her public office as a Member of Parliament, deciding how to vote on legislation about reproductive medicine. When ethical questions about reproductive medicine

75 Some earlier reflections on related questions in the context of CPCE can be found in *Law and Gospel*, ch. 10.

are being discussed among the church's members, presumably it should not be afraid to use theological concepts and language, and to reason about these questions in the light of its deepest commitments of faith and practice. But when it is participating in public discussions that extend beyond its own membership, what kinds of language, argument and mode of engagement are appropriate for it to use?

Some Christians are ready to accept the liberal requirement, described earlier, to "translate" their religious reasons into secular ones, or confine themselves to non-theological arguments in public debate. For some this may be a purely pragmatic decision, because they perceive that it is the only way they will get a hearing in a secular democracy. It may also, however, be seen as a sign of respect for others who do not share one's basic commitments; and for some Protestants as well as many Catholics it may reflect the more positive views among the various evaluations of natural human reason described above (section 3.3).

At the other end of the scale are Christians who are sceptical about the value of the church's participating in law and policy debates at all. They argue that its proper (or at any rate, most important) mode of public engagement is to *be the church*, living and witnessing to a distinctive, counter-cultural way of life. This Christian way of life will have its own moral character, shaped by the Christian story and distinct from the prevailing norms of liberal democracies; it should serve as a provocative witness, in the face of those societies, to the possibility of a different way of living together.[76] According to this view, for example, if the church is unhappy with the dominant view of personhood and the moral status of the embryo discussed above (section 3.5), its most important response will not be to try and persuade policy-makers or the general public by argument, but to live out its life as a Christian community in a way that is truly informed by the Good Samaritan story and the call to "go and do likewise". If this leads the community to show radical care for all human lives, including those in the earliest stages of life, that form of lived witness may be a more authentic public contribution than any argument.

More recently, some authors have attempted to nuance and broaden this emphasis on the church's life as *the* chief form of Christian political engagement. They have argued that Christians who take the distinctiveness

76 See Stanley Hauerwas, *The Peaceable Kingdom: A Primer in Christian Ethics* (Notre Dame, IN: University of Notre Dame Press, 1984) and many other works.

of the church's identity with full seriousness may still be led to live out that identity through a wide range of different forms of political engagement and practice. These may for example include forms of grassroots activism involving broad coalitions in pursuit of shared goals, using tactics and modes of engagement that are subversive of those with power and influence in the political establishment.[77]

Still others hold that the church should involve itself in public debates and the processes of legislation and policy-making, but should be ready to be explicit about its own distinctive theological and ethical commitments when it does so. Those who take this view are likely to reject the restrictions imposed by Rawls' version of "public reason," and claim a place for theological reasoning as "publicly reasonable" argument.[78] Some will also argue that the church should not simply accept the ways in which public ethical arguments and debates are commonly framed, because that framing may be significantly distorted or may exclude much-needed perspectives and insights.[79] The church should instead be ready to challenge the terms of these debates and re-frame them. For example, Christians might have good reasons to be critical of a public debate in which the ethics of IVF are analysed chiefly in terms of reproductive autonomy, understood as it often is in contemporary secular discourse (as suggested in section 3.6). They might argue that this view of reproductive autonomy has certain in-built assumptions about human life and the good, which Christians would wish to contest. They might also argue that framing the analysis in terms of reproductive autonomy tends to omit or marginalise certain perspectives (such as the good of the children born by IVF). Or again, current debates about the moral status of the human embryo tend to assume a particular set of claims about what gives human beings their distinctive value and makes them members of the moral community (section 3.5). Christians and churches might find those assumptions problematic, as suggested earlier, and might think it appropriate to draw attention to their problematic character in public debates. As well as being critical of prevailing norms in these areas, this view of public engagement suggests the church should not be afraid to express positively its own theologically-informed vision and convictions –

77 For example Luke Bretherton, *Christianity and Contemporary Politics: The Conditions and Possibilites of Faithful Witness* (Chichester: Wiley-Blackwell, 2010).

78 E.g. Nigel Biggar, *Behaving in Public*, 59-60.

79 See Messer, *Respecting Life*, ch. 2.

though it should of course do so in ways that are appropriate and sensitive to those it is addressing.

What should the church be aiming to achieve by any of these forms of public engagement? It is widely agreed among Protestants that the church should not simply expect to see Christian ethical norms enshrined in their entirety in the law of the land. This is not only because we cannot assume that governments and parliaments in secular democracies will be responsive to such norms, but also because that expectation would reflect an incomplete understanding of the relationship between law and gospel.[80] Sometimes the church will be led by its own theological commitments to support quite widely shared goals such as just and equal treatment for all, or the care and protection of the vulnerable. It may find that it can make common cause with many other partners in society to pursue such goals – though it might also find that it needs to speak out critically in support of justice or the care of the vulnerable when these are at risk of being sidelined by other aims such as economic or organisational efficiency (see section 3.8 below). At other times, though, the exercise of responsibility in the spirit of love might lead the church to take a more distinctive stance, perhaps even opposing common practices or policies in reproductive medicine that (it believes) express distorted understandings of autonomy, the value of human life or parental relationships.

3.8. Responsibility and professional ethics

3.8.1. Reproductive technologies: evoking questions of ethics of the professions

Reproductive technologies also raise questions concerning professionals within the health care system, such as medical doctors and specialists involved in fertility treatment. Doctors have to discern in concrete situations for which patients fertility treatment is indicated, for instance with regard to age, medical condition, social situation etc. Not all of these decisions will be purely medical decisions. They might also involve considerations of an ethical kind, regarding how to best promote vital moral concerns, such as the health-related and social welfare of the woman during pregnancy and birth, of the potentially future child, as well as the family.

80 Cf. *Law and Gospel*, sections 10 and 11.

Professional ethics combine an institutional and an personal perspective. In her enactment of the professional role, the professional is confronted with obligations, expectations and institutional values. And as an individual moral person she also has to exercise individual responsibility and discernment. How the two sides should be balanced in cases where they conflict, can not be answered once and for all. One of the sides does not automically takes precedence over the other. For example, religious convictions do not automatically "trump" institutional obligations. But neither can one say that they should always be set aside, when they contradict institutional duties. Rather, this is something which needs to be decided in the specific situation.

3.8.2. The ambivalence of modern health care professions

Health care professions, like other professions, are surrounded by a certain ambivalence in contemporary Western societies. On one hand they wield considerable power and authority, not at least in terms of their expertise and skills. They have not only been essential in developing modern states and their welfare services. They have also been considered as protecting and promoting the good of citizens, as society's "benevolent helpers". They are viewed as functions having the best interests and welfare of citizens at their heart.

At the same time, their position and function are also contested. For one thing, the power they wield in terms of their expertise and knowledge is not innocent. Although it is considered as oriented towards the best interests of people, it can also be misused. Not only by the individual professional, as also seen among health care professionals. Professional expert power might also lend itself to state or public interests in forms of disciplining or coercing citizens into certain ways or styles of life. Furthermore, professional expertise and directedness towards the interests of citizens are challenged by various forces. Marketization and commercial interests subject professionals and their discernment to an economic rationality which might conflict with their expertise and their ethical standards and codes, also in the health care sector, for example in terms of private ART clinics. Public organisational reforms subject them to regimes of management that on one hand might lead to a more efficient use of resources and services more sensitive to the interests and wishes of citizens. On the other these regimes of management might also be difficult to reconcile with the autonomous expertise and moral responsibility of the professional.

3.8.3. Protestant tradition and ethics of the professions

The Protestant tradition offers a perspective which might explicate this ambivalence of professions further, in terms of Martin Luther's concept of *vocation*, or its German *Beruf*. Although there are obviously no direct overlaps between this notion and our contemporary "profession", the former and the way it is conceived within a Lutheran legacy provides a valuable resource for framing professions in a Protestant perspective.

Luther's concept of vocation must be understood against his understanding of creation and how God acts in the world as creator, in particular how he identifies God's creative act in the concrete and specific features of ordinary human life. God's creative act is an act of love, and is therefore also directed towards protecting and caring for human life. One of the ways God's creative love is operative in the world, is in the offices of human worldly, social life. God creates not only through the reproductive powers of nature, but also through the ways even the most mundane works and tasks of ordinary life serve the neighbour with what he or she needs for a thriving life. God channels his love, protects and cares for the human person, through the concrete works and efforts of the craftsman, the civil servant, the merchant or the judge, but also of the parent and the spouse. Through the power exerted by the soldier or the judge, God resists and combats evil and protects human beings from harm, and through the serving and nurturing acts of the farmer, the baker or the parent, God's love is passed on to human beings.

Therefore, inhabiting these offices and enacting their functions of protection and service, is a way of enacting God's will and purpose for the fellow human being, it is a way of serving him or her in neighbourly love. It is the ordinary, mundane life of pursuing a craft, farming the land, or parenting a child, rather than the monastic life, which accords with God's will and fulfils God's purposes by serving other human beings. Living in accordance with the offices in which one has been placed, as a parent, a civil servant, or a citizen, is the vocation of human being.

Yet there is also an important distinction between the office and the person. It is the office, as the work of God, which combats evil through power or forwards love and goodness through serving actions, not the person who inhabits the office, according to Luther. In that respect, at least in the renowned Swedish theologian Gustaf Wingren's exposition, the office has a form of ethical subjectivity of its own. So when the parent is neglectful of the child, the soldier uses excessive force and violence, or the civil servant abuses

the privileges of the office, this is because the human person has perverted the meaning of the office, not because the office itself is ambiguous. The office is solely, by God's creative act, for the purpose of protecting and serving human being.

Clearly, this notion of vocation cannot be directly transported into our historical and social context and applied to the professions as we now them today. Not only are professions in contemporary society embedded in an entirely different societal and economic structure, where it is not possible (if it ever were) to see a direct link between their functions and tasks, and the Christian idea of neighbourly love. In industrialised societies and capitalist economies labour and occupational roles are frequently geared towards other purposes than the welfare of the neighbour, such as profit for owners and shareholders.

Furthermore, the doctrine of justification teaches us that no worldly actions or functions can attain or fulfil an absolute or perfect state of the good, but always remain provisional goods, open to critique and revision. This perspective on professions, advanced especially within a reformed tradition, rightly warns against absolutizing any kind of worldly orders or offices, including professional occupations, as unequivocally good. Professions will, like the entire existing world as we know it, also carry the mark of sin, and thus of imperfection, self-interest and injustice. Also within the context of professions does the renewing act of Christ through his death and resurrection illuminates existing reality and identifies disordered preferences and desires. One example is the way professions and professional groups and associations might prove to be self-interested in promoting their position and advantages in society, rather than seeing themselves as the beneficent servants of fellow citizens in need of their services, skills and commitment. Or the way they might lend themselves to the commercial interests of owners and stockholders, for example of private clinics.

Yet a valid point still to be derived from the classic, Lutheran notion of vocation, is that even entirely worldly roles and tasks, such as professions in a public institution, provide an opportunity to serve the other in neighbourly love, and therefore to participate in God's creative and sustaining work. The goodness of discharging professional responsibilities does not entirely derive from or depend on the person inhabiting the professional role.

3.8.4. Ethics of the professions and assisted reproductive technologies

Health care professions within assisted reproductive technologies (ARTs) clearly embody the ambivalence and dilemmas depicted above.

For one thing, ARTs are among the health care technologies that are to a large extent offered through a private market of health care services in the countries of our member churches. Although ARTs are certainly offered through public health care systems on certain medically-related (and sometimes also social and familial) conditions, private clinics are key providers of these health care services. And although public health care too is increasingly dominated by concerns of economic efficiency, private clinics clearly have economic efficiency and the profit of their owners as a key objective. Commercial interests, marketing and advertisements seem to permeate this sector of health care services to a considerable extent. A critical question here is to what extent health care professionals and their professional judgement also become embedded in this kind of commercialization and marketization. One dimension of this problem is how professional judgment is balanced against the preferences and interests of customers, promoted through marketing and advertisements. Do professionals working in private sector clinics become compelled or tempted to fulfil the requests of patients, even where they believe that it is not medically indicated, perhaps not even defensible?

The concern for the preferences and needs of customers might collide with what is advisable according to professional expertise and standards. In other words, the setting of ART within private health care facilities might compel health care personnel to modify their assessments regarding what is medically and ethically advisable, against the economic incentive to serve the interests of the clients. Couples or single women might request ART in cases where medical conditions speak against it. In some cases there might be certain risks involved for the woman in carrying through a pregnancy, for example because she is past the fertile age and is therefore at a higher risk for suffering health problems during pregnancy, or because she has a health-related condition which exposes her to greater risk.

Furthermore, there might be health-related conditions which reduce the mother's/parents' ability to care properly for the child, or the doctor might see social reasons which speak against the woman/couple being suited to raise a child. Another situation of potential conflict between clients' interests

and professional judgment, is the question of implanting more than one fertilised egg in order to increase the chance of pregnancy, but with the risk of twins or triplets, associated with a higher health risk for the babies. In addition to the increased force of market mechanisms, this dynamic of patients requiring specific treatments might also be exacerbated by the much more ready availability of specialist knowledge of medical conditions, types of treatments, and especially of other patients' experiences online and through social media. Such knowledge is no longer the exclusive possession of the professional. Patients more readily challenge and question the recommendations and decisions of the professional expert. In sum, health care personnel might find themselves increasingly exposed to pressure from patients to offer types of treatment they (the professionals) might consider either futile or potentially harmful.

In these situations the health care professional, to the extent that they are not regulated by law, is compelled to exercise professional and ethical judgement and discernment in order to reach a decision. The professional has a primary responsibility for the patient's interests and well-being, which can be concretised into an obligation to heed widely recognised principles such as the patient's autonomy, avoiding harm, benefitting the patient, and acting justly. As an ethical principle of biomedicine autonomy has usually been considered to imply the right to resist treatment and not be exposed to treatment against one's will, institutionalised in the requirement of informed consent, but not to imply a right to demand certain kinds of treatment. From a normative perspective of biomedical ethics that distinction might still make good sense.

A prominent concern of the health care professional is to have the best interests of the patient at heart and to care for the patient. Moreover, important developments in professional ethics, in particular for the health care sector, have taught us to be sensitive to and critical of doctors' paternalistic tendencies towards patients. That said, neither the duty of respect for autonomy, nor the responsibility to care for the patient's best interests, can be adequately discharged simply by accommodating the patient's wishes, even well-considered, informed and enduring wishes.

Furthermore, as mentioned above, physicians and other health care professionals also have other responsibilities in addition to those directly related to the patient. There is also a responsibility to society, and its interests. This involves considerations of justice concerning other patients and patient groups, as well as the allocation of resources.

3.8.5. Professions and conscientious objection for health care personnel

A much discussed issue regarding professions and their perception of ethical responsibility in the health care sector in general, and not at least with regard to assisted reproductive technologies, is the question about conscientious objection. Should health care professionals be permitted to refuse to give treatment otherwise indicated when it conflicts with their deep-seated moral convictions and beliefs, in ways they perceive as going against their conscience? These questions have arisen not least in relation to assisted reproductive technologies, for example in terms of GPs who do not want to refer patients to clinics for abortion, prescribe early pregnancy contraception, or refer lesbian couples for fertility treatment. In public health care systems, should health care professionals be permitted to refuse to participate in treatments like these to which they have objections for religious reasons? On what grounds? And should objections for reasons with no specific link to religion also be granted? These dilemmas might be particularly pressing in societies with a strong public health care sector and institutions, where there might be fewer possibilities for doctors to work within institutions identifying with beliefs similar to their own, for example faith based institutions.

There is no way of defining a list of absolute rules according to which these questions can be decided. As mentioned above, the professional responsibility is exercised at the interface between institutional obligations, regulations, expectations, norms and values, on one hand, and personal ideals, beliefs and values on the other. And in cases of conflict, for example where religious beliefs require a professional to do or omit something which run against the requirements of her professional role, there can be no general rule that automatically give one side priority over the other. Instead, it needs to be decided through situational discernment. Several concerns might be relevant in this discernment. For one thing the import of the conscientious belief that the professional feels is being violated is relevant. It seems fair to expect that the professional is able to justify reasonably also for outsiders how it is that this belief or obligation carry the weight she believes it does in relation to the larger patterns of religious beliefs and patterns she identify with, and justifies suspension of the professional duty. Furthermore, those who advocate that religious beliefs might warrant objections against professional duties, ought to be prepared to grant similar conscientious exemptions from professional duties also for other beliefs. One example could be deep-seated

beliefs about the values that ought to guide a professional practice, such as serving a patient's best interest, also in cases where that might go against the requirements of a managerial system focusing on other types of objectives.

Finally, it is also relevant whether or not the patient will realistically be able to obtain elsewhere the health care service to which the professional objects.

4. In-vitro Fertilisation (IVF)

4.1. Introduction

Modern reproductive medicine has a broad range of measures at its disposal to assist couples with limited fertility to have a child. With respect to the act of fertilisation we can distinguish between insemination, when the man's sperm is introduced into the vagina or womb of the woman, and in-vitro fertilisation (IVF), whereby the fertilisation takes place outside the female body. Besides the classical IVF, which shifts the act of fertilisation to the test-tube yet does not intervene further, intracytoplasmatic sperm injection (ICSI) has established itself since the 1990s. Here an individual sperm is injected straight into an ovum. All three procedures may again be practised both in a homologous system (genetic and social parents are identical) and also in a heterologous system (at least one parent does not combine genetic and social parenthood), where the use of eggs from another woman is naturally only possible in the context of an extracorporeal fertilization, i.e. a classical IVF or ICSI.

Even if the development of artificial insemination with its separation of sexuality and reproduction possibly marks a more important new departure anthropologically speaking, the critical discussions in modern reproductive medicine generally centre around IVF. This is justified to the extent that extracorporeal fertilisation created the preconditions for far-ranging interventions in the fertilising act, or the embryonic development and also for the use of embryos for other purposes. Cryopreservation of embryos, egg and embryo donations, surrogate motherhood and pre-implantation diagnosis would not be possible without IVF. These techniques, summarised in the international literature with IVF itself as "assisted reproductive technologies" (ART), form a focus of the present statement (chapters 5-8).

Moreover, (surplus) IVF embryos are the main source of "material" for research on embryos and gaining embryonic stem cells, as referred to in chapter 9. If IVF itself had to be classed as ethically inadmissible, as is the case in the Roman Catholic view, the discussions in the following sections would be largely superfluous. But even independently of the further reaching medical-technical opportunities that this opens up, IVF (in its two variants as classical IVF and as ICSI) deserves attention. Although it is long been accepted by society it still raises serious questions. It therefore appears to make sense, before grappling with more specific technologies, to start with an assessment of IVF in its own right. Since sperm and egg donation and the related extended options for founding a family will be thoroughly discussed in chapter 6, we will here first focus on homologous IVF.

4.2. Facts and figures

Since the birth of Louise Brown in 1978 over 5,000,000 children worldwide have been born by means of IVF.[81] Most of the IVF treatments take place in Europe. In 2011 alone (the last year for which there are figures), 609,973 treatment cycles and 134,106 births were recorded in the European IVF register, with an upward trend.[82] In individual European countries a significant share of all births are due to the use of IVF: in Denmark the percentage of IVF births in 2011 was over 5%; in Belgium, the Czech Republic, Estonia, Iceland, Norway and Slovenia it was still over 3%.[83]

The classical indications include tube pathologies (for classical IVF) and reduced sperm quality or azoospermia (for ICSI). Both procedures are, however, also used with other fertility disorders. This expansion of the range of indications is medically not undisputed, because the probability of becoming pregnant by means of an IVF treatment is, with couples with slight fertility disorders, sometimes hardly higher than the probability

81 European Society of Human Reproduction and Embryology (ESHRE), "ART Fact Sheet" (July 2014). Online at http://www.eshre.eu/sitecore/content/Home/Guidelines%20and%20Legal/ART%20fact%20sheet (accessed 12 January 2016).

82 M.S. Kupka et al., "Assisted reproductive technique in Europe, 2011: Results generated from European Registers by ESHRE", *Human Reproduction* 31/2 (2016): 233-48, at 236ff. DOI:10.1093/humrep/dev319.

83 Ibid., 239.

of becoming pregnant by natural means.[84] Generally speaking, very few couples are infertile in the strict sense, whereas most of them only have reduced fertility. So it might happen that a couple spontaneously experiences pregnancy (i.e. not as a result of the medical treatment they receive) during or after reproductive treatment.

The chances of success of an IVF treatment basically depend on the age of the woman (more exactly, the age of the woman whose eggs are used), the individual medical pre-history of the couple and the procedure chosen. In 2011 in Europe, with classical IVF, on average 21.1% of treatment cycles led to a live birth, with ICSI it was 19.2% and using cryopreserved embryos it was 14.4%.[85]

Even if IVF has meanwhile become routine, it is not without risks for those concerned.[86] Apart from the possible complications of hormonal stimulation (ovarian hyperstimulation syndrome, OHSS) and oocyte retrieval, the first thing to mention is the trend toward multiple pregnancies. These are caused by the still-widespread practice of transferring more than one embryo to the woman's womb. Multiple pregnancies are linked to an increased rate of premature births, lower birth weight of the children and increased perinatal morbidity and mortality. But even with single pregnancies after IVF, children are on average smaller and lighter, and are born earlier. Also, complications during pregnancy, such as preeclampsia, placenta praevia (low-lying placenta) and placental dissolution, occur more frequently. In addition, the chance of birth defects is raised by a factor of 1.3 for children conceived through IVF.[87] However, the underlying mechanisms of the

84 See E. I. Kamphuis et al., "Are we overusing IVF?" *British Medical Journal* 348(2014): g252. DOI: 10.1136/bmj.g252; F. A. M. Kersten et al.: "Overtreatment in couples with unexplained infertility", *Human Reproduction* 30 (2015): 71-80. DOI: 10.1093/humrep/deu262.

85 Kupka et al., "Assisted reproductive technique in Europe, 2011", Supplementary Tables SV-SVII (available online at http://humrep.oxfordjournals.org/content/31/2/233/suppl/DC1.

86 See K. Diedrich et al., "Schwangerschaftsrisiken und Outcome der Kinder nach ART", *Journal für Reproduktionsmedizin und Endokrinologie* 8 (2011): 108-111. for an overview and Jiabi Qin et al., "Assisted Reproductive Technology and the Risk of Pregnancy-Related Complications and Adverse Pregnancy Outcomes in Singleton Pregnancies. A Meta-Analysis of Cohort Studies", *Fertility & Sterility* 105 (2016): 73-85 for a recent metaanalysis.

87 K. Diedrich et al., "Schwangerschaftsrisiken und Outcome der Kinder nach ART", *Journal für Reproduktionsmedizin und Endokrinologie* 8 (2011): 109; cf. Jiabi Qin et al., "Assisted Reproductive Technology and the Risk of Pregnancy-Related Complications and Adverse Pregnancy Outcomes in Singleton Pregnancies. A Meta-Analysis of Cohort Studies", *Fertility & Sterility* 105 (2016): 73.

correlation between ART and obstetric risks are still unclear. While some studies have shown that factors associated with ART procedures themselves may increase the risk of adverse pregnancy outcomes, others suggest that the cause might be sought in the reduced fertility of the parents rather than in the technical interventions.[88]

4.3. Legal situation

No country in Europe totally prohibits IVF. However, the admissibility of IVF is bound to certain preconditions in most countries.[89] Some countries only permit IVF on the grounds of a medical indication (whether or not the treatment is publicly funded). For example, in Austria, Germany and Italy it may only be used in cases of diagnosed infertility, while in others such as France, the Netherlands, Portugal and Sweden it may also be used to prevent the transmission of serious diseases. In some countries (e.g. France, Portugal and Italy) only heterosexual couples may have recourse to IVF; in Sweden only couples, but no single women. Other countries (e.g. Denmark, Finland, Belgium, Greece, Spain and the UK) have more liberal policies whereby a medical indication is not required, and same-sex couples and single women are not excluded.[90] A number of countries (e.g. Belgium, Denmark, Greece

88 See M. J. Davies et al., "Reproductive technologies and the risk of birth defects", *New England Journal of Medicine* 366 (2012): 1803-1813; Qin et al., "Assisted Reproductive Technology and the Risk of Pregnancy-Related Complications and Adverse Pregnancy Outcomes in Singleton Pregnancies", 83.

89 See the survey by K. Berg Brigham et al., "The diversity of regulation and public financing of IVF in Europe and its impact on utilization," *Human Reproduction* 28 (2013), 666-675 (at 669). However, this survey only covers selected European countries (none from Eastern Europe); also the data relate to 2009 and so some may be out of date.

90 A more recent study summarizes different countries' requirements concerning relationship status and sexuality in this way: "[…] marriage is a requirement for ART treatment in most countries. Only six out of 22 European countries […] report that marriage is not a requirement for ART access (FI, FR, EL, IE, SI, CH). However, apart from Turkey (and Japan), all European countries (assessed) […] will also provide treatment to couples who live in stable relationships. […] When it comes to unpartnered women who want to undergo ART treatment, countries are somewhat more restrictive. Only ten of the 22 European countries […] permit singles to utilize ART services (BE, BG, DK, FI, EL, HU, LV, RU, ES, UK) . When it comes to lesbian women, the situation is even less liberal: Only seven European countries and the US grant them access to ART (BE, BG, DK, FI, LV, ES, UK)." P. Präg and M. C. Mills, "Assisted reproductive technology in Europe: Usage and regulation in the context of cross-border reproductive care", *Families and Societies Working Papers* 43 (2015), 11f, online at http://www.familiesandsocieties.eu/wp-content/uploads/2015/09/WP43PragMills2015.pdf (accessed 17 December 2015).

and the Netherlands) also provide for age limits. Since IVF treatments are very cost-intensive, the form of financing also plays a role in terms of de facto access. Here there are considerable differences between the different European countries.[91] In order to be able to benefit from financial support from public funds those concerned must generally meet additional criteria (e.g. a medical indication).

4.4. Church statements

With regard to the ethical assessment of IVF, there are striking differences between the Roman Catholic Church, on the one hand, and (most) Protestant churches, on the other hand. For this reason, we do not restrict ourselves to Protestant statements in this section, but start with a summary of the Roman Catholic position.

4.4.1. The Roman Catholic position

On reproductive medicine the Roman Catholic Church takes a similarly uncompromising position to its position on contraception. The most important document is the Instruction of the Congregation for the Doctrine of the Faith, *Donum Vitae,* of 1987, of which decisive passages are based on the encyclical *Humanae Vitae* of 1968. According to the instruction, medically assisted reproduction (which it calls "artificial") affects two fundamental values: "the life of the human being called into existence and the special nature of the transmission of human life in marriage."[92] The Congregation argues that human life begins with fertilisation and therefore urges that each human being be respected and treated as a person from the moment of their conception, i.e. they be accorded all rights of the person, above all the

91 According to the recent study by Präg and Mills, "Only Belarus, Ireland, and Switzerland do not provide their citizens with some form of coverage. Whereas most countries provide coverage via national health plans, some work via mandates for private insurances or combinations. Six countries—Denmark, France, Hungary, Russia, Slovenia, and Spain—have complete coverage via national health plans. ... Whereas in Austria two thirds are covered by the national health system, in Finland this is in some cases only forty per cent. Furthermore, insurance coverage usually depends on patient characteristics. Coverage in Spain is for instance only available for women up to age 40. Slovenia covers six cycles for the first child and four cycles after a first live birth, but only for women up to age 42. In some parts of the United Kingdom, women who are obese are being denied coverage." Ibid., 10f.

92 *Donum Vitae*, Introduction, section 4.

right to life.[93] Since the establishment of IVF as a medical intervention was preceded by numerous experiments with embryos and, if it is used regularly, normally more viable embryos arise than can be transferred to the woman ("surplus embryos"), the Congregation comes to a negative judgement on IVF with respect to the embryo and the respect due to it.[94] At the same time, it refers to the dialectic of technological progress, when it sees in IVF a "dynamic of violence and domination [which] may remain unnoticed by those very individuals who, in wishing to utilize this procedure, become subject to it themselves."[95] But even regarded in itself, i.e. apart from the fact that IVF is related to the destruction of embryos, IVF is inadmissible from the perspective of the Congregation.[96] Underlying this is the belief that the two meanings of marital sexuality – loving union and reproduction – cannot be separated from one another, which the Roman Catholic magisterium also asserts in connection with contraception.[97] According to the Congregation, not only heterologous IVF, which involves a third person and thereby questions the unity and exclusiveness of marriage, but also homologous IVF deprives human reproduction of its dignity and perfection, and is therefore regarded as a morally inadmissible technique.[98] The Roman Catholic Church did not revise this judgement in later texts, so it still stands.[99]

4.4.2. Protestant voices

In view of the fundamental anthropological and ethical questions raised by medically assisted reproduction, it is no surprise that also many Protestant churches and church families have spoken up on the issue. Above all the later half of the 1980s and the early 1990s saw the appearance of a number of detailed position papers, some of which differ greatly. The range of positions and arguments can be illustrated by glancing at two texts by CPCE member churches from Germany and the Netherlands. These are the guide *Von der Würde werdenden Lebens. Extrakorporale Befruchtung, Fremdschwangerschaft und genetische Beratung* (*On the dignity of life*

93 *Donum Vitae*, I.1.

94 *Donum Vitae*, II.

95 *Donum Vitae*, II.

96 *Donum Vitae*, II.5.

97 *Donum Vitae*, II.4.

98 *Donum Vitae*, II.5.

99 See the recent Instruction *Dignitas Personae*.

before birth. Extracorporeal fertilization, surrogate pregnancy and genetic counselling) of the Evangelical Church in Germany (EKD) of 1985[100] and the report *Mensing in Worden. Theologische, ethische en pastorale overwegingen bij nieuwe voortplantingstechnieken en prenataal onderzoek* by the three predecessor churches of the Protestant Church in the Netherlands (PKN) of 1991[101]. We should, of course, note that these are historical documents that might no longer reflect the current positions of the EKD or PKN.

The EKD paper starts from the statement that human life is a gift of God and has a special dignity. Like the Roman Catholic Church, the EKD argues that conception and birth belong in the context of love and marriage, and that IVF removes this connection. However, it does not see the dignity of reproduction as being thereby infringed but instead points to consequences unforeseeable from our present position. All in all, the text is characterised by strong reservations about IVF; it points to the risk of multiple pregnancies, hitherto unexplored long-term somatic and psychological consequences of the test-tube culture and to the absorption of financial resources by IVF, which cannot be used for other purposes. The problem of surplus embryos is also mentioned. The EKD stresses that human life, and a future person, is evolving from the very moment in which sperm and ovum unite; even at the stage of the first cell division the embryo already has the same ethical quality as a foetus in an advanced pregnancy. The annihilation of surplus embryos is in indissoluble contradiction to the protection of developing human life; IVF thus gives rise to an ethical conflict calling for a high sense of responsibility. [102] Although the EKD paper never categorically condemns IVF or depicts it

100 EKD Church Office (ed.), *Von der Würde werdenden Lebens: Extrakorporale Befruchtung, Fremdschwangerschaft und genetische Beratung. Eine Handreichung der Evangelischen Kirche in Deutschland zur ethischen Urteilsbildung* (EKD-Texte 11, Hannover, 1985).

101 *Mensen in Wording: Theologische, ethische en pastorale overwegingen bij nieuwe voortplantingstechnieken en prenataal onderzoek. Rapport van de commissie „Biomedische Ethiek" van het Deputaatschap en de Raad voor de Zaken van Kerk en Theologie van de Nederlandse Hervormde Kerk en de Gereformeerde Kerken in Nederland* (Utrecht, 1991).The three predecessor churches of the PKN were the Nederlandse Hervormde Kerk, Gereformeerde Kerken in Nederland and Evangelisch-Lutherse Kerk in het Koninkrijk der Nederlanden.

102 The same point, namely that the method itself as well as its development, produces and destroys surplus embryos, is also the central concern in several statements issued by Church of Norway, which has, however, drawn the conclusion that the prospects of helping infertile couples to conceive, outweigh the moral problems of destroying embryos: Church of Norway National Synod, *Vern om livet. Uttalelser om miljøvern, abortlovgivning og bioteknologi [Protection of life. Statements on environment, legislation abortion, and biotechnology*] (1989); Church of Norway National Council, *Consultative statement on Amended bill on biotechnology* (2006), 4, 8.

as incompatible with Christian faith, it becomes sufficiently clear that the authors reject it and want to consider it at most as a last resort, *ultima ratio*. This critical position was once again endorsed by the EKD Synod two years later with the declaration *Achtung vor dem Leben* (Respect for life) (1987), that even explicitly states that the synod advised against using extracorporeal fertilisation.[103]

A completely different conclusion is reached by the Commission for Biomedical Ethics of the PKN predecessor churches. In their report *Mensing in Worden*, authorised by the united synod of the three churches (albeit only as a contribution to the discussion and not as an official church statement), the Commission first looks at the position of humans in creation and the moral status of the embryo, ultimately grappling with a number of objections to IVF. Humanity has the mission to till and keep creation; children are a gift of God but that does not mean that human beings cannot intervene in the relevant processes. In the classical doctrine of providence, God's action and human action must not be played out against each other; indeed, God's action presupposes human (co-)operation. Modern reproductive technologies cannot therefore simply be dismissed with the objection that humans are playing God. With respect to the moral status of the embryo, the Commission comes to a gradualist view that the early embryo is worthy of protection but not to the same extent as a person once born. The emergence of surplus embryos is not regarded as a compelling argument against the use of IVF. By contrast with the Roman Catholic view that sexuality and procreation are inseparably united, the Commission asserts that the main thing for the child is to grow up in the context of a stable loving relationship – and that is quite compatible with the use of reproductive techniques. The only objection to IVF, which the Commission classes as "very significant", relates to the possible consequences for the stakeholders themselves: the woman's contribution to human reproduction might recede into the background; the relation between the partners might be impoverished because the wish for a child becomes an obsession. Hence, in the concluding part, IVF is termed a "blessing for childless couples", but there are also warnings against exaggerated expectations.

103 See Church Office of the Evangelical Church in Germany, ed., *Declaration of the 7th Synod of the EKD at its 4th session on respect for life* (EKD-Texte 20, Hannover, 1987), 5 (only available in German).

4.5. Discussion

The arguments used in the EKD and Dutch churches can still be applied (with some modifications) to the theological-ethical formation of opinion in the Protestant churches today. Regarding the prospects of success, risks and burdens, but also the long-term social consequences of IVF, more recent data (such as those presented in section 4.2) should be adduced.

IVF offers couples who cannot succeed with a pregnancy the prospect of a child of their own. If one considers how seriously the desire for a child is taken in some parts of the Bible (see 3.1), medical interventions that meet this wish are in principle to be welcomed from the theological angle. Hence, when trying for an ethical assessment of IVF, there are reasons to look first at the positive aspects: where it is successfully used, IVF can indeed be experienced as a blessing. In the framework of a Protestant ethic, which knows no authoritatively discerned objective moral order comparable to Catholic magisterial discernment of natural law, but is avowedly guided solely by Scripture, there are no categorical objections which could render these patent advantages irrelevant. To be sure, natural conception deserves to be given preference anthropologically, because the connection of love, sexuality and reproduction can be directly experienced here. Without the idea of "laws written into the actual nature of man and of woman",[104] the integrity of this connection can, however, only be formulated as an ideal and not as a norm to which all people or even all Christians need to conform, notwithstanding the particular features of any individual situation. Where this ideal is unattainable because the attempt to bring about conception by natural means remains unsuccessful, IVF fundamentally seems a legitimate alternative.

Nor can the technical character of IVF be understood as a fundamental objection to the procedure. As the Bioethics Commission of the Dutch churches rightly underlines, Protestants believe that it is part of the cultural mission of human beings laid down in Gen 2:15 to help to shape nature, which also means intervening in human nature. This of course implies that discernment is required between those human activities that fulfil this mission and those which contradict it. Tools for such discernment may be found in the basic ethical framework set out in chapter 3 of this guide. This

104 Paul VI, *Humanae Vitae* (25 July 1968), para. 12. Online at http://w2.vatican.va/content/paul-vi/en/encyclicals/documents/hf_p-vi_enc_25071968_humanae-vitae.html (accessed 12 January 2016).

requirement for discernment means we cannot claim that IVF has crossed a red line merely on the grounds that it is a matter of human reproduction and on the transmission of human life. Rather we would have to justify this claim on the basis of particular features or consequences of IVF.

One aspect that here doubtless plays an important role is the emergence of surplus embryos, which is raised by both the Protestant and the Catholic churches. It is true that the number can be somewhat reduced by calculating the probability that the attempt by a particular couple to achieve fertilisation will lead to a viable embryo. However, the problem cannot be completely abolished with the present state of the art, because there is an indissoluble tension between the three concerns – to achieve a satisfactory rate of pregnancy, avoid multiple pregnancies and prevent surplus embryos. Since there are only limited possibilities of offering surplus embryos a chance of survival by passing them on to other couples, IVF will for the foreseeable future be accompanied by the destruction of embryos (or at least by letting them die).[105] Whether that is seen as a compelling argument against IVF will basically depend on how people answer the disputed question about the moral status of the embryo. While the Roman Catholic Church takes a clear position here, too, most Protestant churches only agree on the fact that human life is fundamentally worthy of protection and respect at all its stages. There is disagreement on the implications of this for the treatment of human life in its earliest stages, and specifically embryos before nidation. This question was discussed in general terms in section 3.5, where we surveyed a range of ways in which Protestants might address it.

The fact that Protestant ethics are more open and receptive to IVF than Catholic magisterial teaching does not, of course, mean that from the Protestant viewpoint its use is always to be recommended without restriction. Generally speaking, when it comes to ethical discussion of reproductive medicine, more attention must be given to the question of

105 This is a consequence of the tension mentioned in section 4.2 between maximising success rates and avoiding multiple pregnancies. If more than one embryo is transferred at a time, there is always the risk of a multiple pregnancy. So, with regard to the aim of avoiding multiple pregnancies, single embryo transfer (SET) is the method of choice, but with only one arbitrarily chosen embryo, the chances of achieving a pregnancy are disappointingly low. So in many European countries, elective single embryo transfer (eSET) has become the standard procedure: from a number of embryos, only the one with the highest potential of successful implantation and development is transferred. This inevitably results in surplus embryos.

the child's welfare than has been in the past.[106] The health of the pregnant woman as well as that of the children may be harmed if the risk of multiple pregnancies is taken through the simultaneous implantation of several embryos in order to increase the chances of successful IVF. It is medically and ethically questionable if the wish for a child has to be fulfilled at the expense of miscarriages or premature births, linked with the risk that the children delivered alive will suffer lasting damage. The welfare of the child is also relevant when women want to become pregnant shortly before the menopause or even after the menopause – which may also require the use of donated gametes or embryos, discussed further in chapter 6. It is important to point out the health risks of a late pregnancy for both mother and child. (On the other hand, the objection that an older mother could possibly not look after her child until the age of adulthood is of limited relevance because it also applies to men becoming fathers at an advanced age.)

Sometimes it is stated that IVF children are psychologically more disturbed than children conceived naturally.[107] However, these statements are questionable. If children have psychological problems then it is hardly as a consequence of reproductive medicine. It is more likely that such problems arise when there are traumatising factors in the parent-child relationship due to the long unfulfilled wish for a child. Naturally conceived children desired by their parents can also suffer from the latter's possibly over-high expectations and find this harmful. That is not a medical question but one of upbringing and the basic attitude to life.

106 Cf. H. Kreß, *Medizinische Ethik: Gesundheitsschutz – Selbstbestimmungsrechte – heutige Wertkonflikte* (2nd ed., Stuttgart, 2009), 188.

107 Assumptions about possible damage to the psychosocial development of IVF children are still voiced from time to time, with the caveat that there are as yet too few valid studies. Cf. Carola Bindt, in Karl Heinz Brisch and Theodor Hellbrügge (eds.), *Die Anfänge der Eltern-Kind-Bindung: Schwangerschaft, Geburt und Psychotherapie* (2nd ed., Stuttgart, 2008), 51-80, at 52ff. A longitudinal study in Denmark led by Allan Jensen concluded in 2014 that IVF children are more vulnerable to psychiatric disorders in childhood and young adulthood: see the news release at http://www.eurekalert.org/pub_releases/2014-06/esoh-cbt062614.php (accessed 28 October 2016). However, the majority of publications in the literature assume that – at least with "singletons" – there is no major difference compared to children of spontaneous pregnancies, provided no identifiable medical problem exists. See on this point Tewes Wischmann, „Psychosoziale Entwicklung von IVF-Kindern und ihren Eltern", *Journal für Reproduktionsmedizin und Endokrinologie* 6 (2008): 329-34; and in older literature, Margarete Berger, „Zur Entwicklung von Kindern nach reproduktionsmedizinischer Behandlung ihrer Eltern", *Praxis der Kinderpsychologie und Kinderpsychiatrie* 42.10 (1993): 368-73.

In addition to the risks and burdens for the child, the psychological stress for the intending parents should be taken into account. As the figures in section 4.2 make clear, one or two treatment cycles are not enough for most couples; the swings between hopes and fears and the disappointment after a failure (possible repeated) can be extremely strenuous. Here we see that the theme of subjugation to the dominance of technology in connection with IVF is not completely fanciful.[108] IVF is a way of actively countering the suffering at not having a wished-for child; yet the treatment intervenes deeply into the private sphere of the partners and may entail feelings of alienation and expropriation. It gets particularly difficult when, after several attempts, the desired success does not materialise. In view of the apparently unlimited possibilities of modern reproductive medicine it is very hard for many couples to find a way out of treatment and to accept a new prospect of life without a child.[109] Psychosocial counselling and pastoral care are therefore extremely important in the field of reproductive medicine. Here the churches are called upon to offer assistance in taking these decisions in their counselling centres and local congregations and standing by couples during the difficult period of treatment.

Pastoral care alone, however, is not enough. The churches also have to address the social and cultural context of the problems mentioned above. One question arising at the level of society is about the extent to which the increasing recourse to IVF is connected to the tendency to postpone founding a family to a later time in life. Not only the cryopreservation of eggs for non-medical reasons ("social freezing," discussed in section 5), but also IVF itself, must be seen in terms of more fundamental sociodemographic developments and their possible causes. The oft-discussed grounds for

108 This is vividly expressed in one woman's report of her experience after a failed IVF cycle: "After acknowledging that it was the worst experience of my life, I decided to do it again." Reported in Gay Becker, *The Elusive Embryo: How Women and Men Approach New Reproductive Technologies* (Berkeley, CA: University of California Press, 2000), quoted by Michael Banner, *The Ethics of Everyday Life: Moral Theology, Social Anthropology, and the Imagination of the Human* (Oxford: Oxford University Press, 2014), 50. Whether (as Banner suggests) this is a sign that the powerful desire for genetically-related children is to a significant extent a cultural construct, which should be criticised by a theological ethic, is an open question on which there were a range of views in the Expert Group.

109 Cf. O. Rauprich, E. Berns and J. Vollmann, "Information provision and decision-making in assisted reproduction treatment: results from a survey in Germany", *Human Reproduction* 26/9 (2011): 2382-91. The authors recommend that "[a] strategy for stopping ART and embarking on alternative ways of coping with infertility should be installed from the outset of every treatment" (ibid., 2382).

postponing the founding of a family include long periods of vocational training, precarious employment and the (perceived) incompatibility of a family and a career. Since women's natural fertility slowly declines from the age of 25 and very quickly from 35, a rise in undesired childlessness is therefore preprogrammed. That not only has consequences for those concerned but also impacts on the demographic profile of the whole society. The attempt to compensate for this by using IVF and other ARTs[110] poses a typical example of the medicalisation of social problems and also contradicts the time-honoured maxim in health care that prevention is better than cure. Even if IVF is a great help to the couples concerned in individual cases and its availability can therefore be welcomed by theologians and church people, there should be a consensus that natural means of founding a family should take normative priority. So, with respect to dealing with IVF and other ART methods, it is up to the churches to critically question the spreading of IVF and its promotion as a way of solving demographic problems. They should also encourage people to found a family and live with children at a young age, and work to improve the relevant societal conditions, such as family-friendly working-hours and availability of childcare.

110 For examples of such proposals see S. Ziebe and P. Devorey, "Assisted reproductive technologies are an integrated part of national strategies addressing demographic and reproductive challenges", *Human Reproduction Update* 14 (2008): 583-92. DOI: 10.1093/humupd/dmp039.

5. Cryopreservation

5.1. Introduction

Cryopreservation is the deep-freezing of living tissue, specifically living human tissue or human germ cells, so that it can be kept and, when thawed, fulfill its biological functions. It is mainly used in the field of reproductive medicine with the goal of inducing pregnancy (in association with IVF), particularly if a transfer or implantation of fertilized embryos is to be delayed for some reason (for example if there are complications in the treatment cycle of the woman or other probelms like cancer or chemotherapy). It is also possible to preserve male and female gametes to keep them "in reserve" for later fertilisation and transfer, or with the goal of optimising assisted reproduction techniques (ART), although considerable legal constraints and ethical objections may be expected here.

5.2. Facts and figures

The preservation and re-use – both freezing and thawing – are achieved by a complex procedure,[111] so that life processes come to a standstill and damage is prevented as far as possible during the process of freezing and thawing.

Various scenarios of cryopreservation can be identified, which may be differently assessed legally and ethically, even though the technology

111 Temperature range between -135–196°C; additives for protection against freezing; liquid nitrogen, equipment computer-controlled in medium, different freezing or thawing processes with different types of cell, etc.

(freezing) is the same.[112] Four in particular can be identified: the preservation of (1) male or female *germ cells* (*sperm and egg cells*), (2) *impregnated egg cells*, (3) *human embryos* and (4) *whole ovarian tissue*.

(1) Sperm and egg cells differ in their susceptibility to cellular damage during freezing and thawing and thus in the ease with which they can be preserved. While human sperm cells have already been successfully frozen, thawed and re-used in the early days of assisted reproduction, oocyte cryopreservation has posed considerably more challenges. It has only been with the advent of new freezing techniques such as vitrification (ultrarapid cooling) that egg freezing has become a viable option in the context of assisted reproduction.

In general, human germ cells may be frozen and stored either for research purposes, as part of a sperm or egg donation programme (see ch. 6) or for later use by the individuals they were taken from. The latter option is of particular interest for men and women facing loss or impairment of fertility. Cancer patients who need to undergo gonadotoxic treatment such as radiation or chemotherapy, for example, may choose to collect and freeze some of their gametes prior to treatment. Sperm and egg freezing as a means of fertility preservation is not limited to medical contexts, however. Oocyte cryopreservation, in particular, is increasingly discussed as a preventive measure to counter age-related fertility decline in women.[113] Given that the number of oocytes in a woman's ovary as well as their quality are progressively decreasing, rendering conception increasingly difficult from about age 35 onwards, healthy women who do not have the possibility to found a family in earlier life, may try to protect their reproductive potential against the threat of time by freezing and storing their eggs. Since a medical intervention (hormonal stimulation and egg retrieval) is performed for social reasons (lack of a suitable partner to found a family, difficulties in reconciling parenthood with a career), this method is frequently referred to as "social freezing".

(2) In the case of preservation of impregnated oocytes, the freezing takes place when the sperm has already penetrated them but fertilization or the

112 Julia Kopeika, Alan Thornhill and Yacoub Khalaf, "The effect of cryopreservation on the genome of gametes and embryos: principles of cryobiology and critical appraisal of the evidence", *Human Reproduction Update* 21 (2015): 209–227.

113 Cf. Wybo Dondorp et al., "Oocyte cryopreservation for age-related fertility loss", *Human Reproduction* 27/5 (2012): 1231-1237.

merging of germ cells has not yet been accomplished. The method makes it possible to resort again to the impregnated germ cells in the event of a failure of the first embryo transfer or treatment attempt, without having to start the whole procedure (tests, possible prior treatments and harvesting the oocyte and sperm cells) all over again. This method has the advantage of avoiding the production of surplus embryos; furthermore, the chances of success when implanting embryos created from impregnated oocytes after preservation are much greater than with those of embryos created from unfertilized oocytes after preservation.

(3) The preservation of human embryos produced *in vitro* usually, in a sense, serves the interest of their life. The procedure may be used to preserve surplus embryos, or when a woman has declared her readiness for an embryo transfer, but then withdraws her consent before implantation. In this case cryopreservation offers the only way of preserving the fertilised embryos rather than doing away with them. The expectation here is that they may be used for later transfer to another woman or for research purposes (though the latter option will of course result in their destruction).

(4) The preservation of ovarian tissue is sometimes done to preserve the fertility of women with cancer after radiation or chemotherapy. Ovarian rissue is removed from patients before treatment and retransplanted afterwards. There is a risk that malignant cells could be reintroduced with the transplanted tissue; studies suggest that for many cancers this risk is low, but it is regarded as a reason for treating the procedure with some caution.[114] In other cases, such as early menopause or endometriosis, the procedure is intended to restore fertility. This is a relatively new technique, still being developed and refined, and to date has had modest results: the first live birth from reintroduced cryopreserved ovarian tissue was reported in 2004, since when (at the time of writing) between 30-40 healthy babies have been born worldwide using this technique.[115]

Despite high costs, there are worldwide tens and hundreds of thousands of preserved tissues and embryos. In Australia alone the figure in 2002 was 70,000 embryos. Very few surplus embryos are preserved in countries with strict statutory regulations: for example, in Germany between 1998 and 2001

114 See, e.g., Marie-Madeleine Dolmans et al., "Risk of Transferring Malignant Cells with Transplanted Frozen-Thawed Ovarian Tissue," *Fertility and Sterility* 99.6 (2013): 1514-22.

115 Dominic Stoop, Ana Cobo and Sherman Silber, "Fertility Preservation for Age-Related Fertility Decline", *The Lancet* 384 (2014): 1311-19.

only 90 embryos were cryopreserved and not thawed again (in Germany impregnated oocytes are frozen before the sperm and egg nuclei fuse).[116] The introduction of the elective single embryo transfer (eSET) procedure in many contries is likely to have increased the number of surplus embryos, since the idea of that procedure is to select and transfer only the embryo with the best chance of implantation and development.[117] (For this reason, in countries like Germany with its strict *Embryonenschutzgesetz*, eSET is prohibited.)

5.3. Legal situation

The legal evaluation of cryopreservation differs according to whether it is a matter of preserving human germ cells (egg and sperm cells), impregnated egg cells or embryos. While egg and sperm cells are somatic and need not be treated any differently from blood samples (for example),[118] fertilised and frozen embyos raise further problems that must be considered from an ethical and legal standpoint. In most European countries there is no general prohibition on preserving human embryos, but since it concerns human life, the statutory bases for arrangements and statements about it may be national constitutions (for example in Germany and Hungary), laws on research into human embryonic stem cells or laws on human reproduction – in which there is constant reference to open questions and the need to regulate.[119] Where the freezing of human embryos is permitted, some countries place upper limits on the time for which they may be stored, ranging from two to ten years.[120] In Italy, some restrictions on cryopreserved embryos have been relaxed, but it is still the case that cryopreserved embryos may not be

116 Deutsches IVF-Register, Jahrbuch 2001, 26. In Germany at least, it is difficult to obtain more recent reliable data, because there is no duty to report the existence of surplus embryos.

117 For a brief overview see American Society for Reproductive Medicine, "Why Would I Choose to Have Elective Single Embryo Transfer?" Online at http://www.reproductivefacts.org/FACTSHEET_Elective_Single_Embryo_Transfer/ (accessed 12 January 2016). In 2010, the combined rate of SETs for IVF and ICSI was 73.3% in Sweden, 67.5% in Finland, and 50.4% in Belgium, according to Kupka et al., "Assisted reproductive technology in Europe, 2010"; see table III, p. 2105.

118 Ernst Siebzehnrübl and Hans-Ludwig Günther, "Kryopreservation", in *Lexikon der Bioethik* (2000), 497–500, at 499.

119 Hartmut Kreß, "Humane embryonale Stammzellenforschung in der Sicht protestantischer Ethik und die Reform des Stammzellengesetzes in Deutschland am 11. April 2008", in: *Stammzellenforschung: Ethische und rechtliche Aspekte*, ed. U. H. J. Körtner and Chr. Kopetzki (Wien/New York: Springer, 2008), 193–210, at 202-210.

120 Bursado et al., "The Evolution of Legislation", 10.

donated or destroyed.[121] The fertilisation and freezing of egg cells in reserve is prohibited in some countries, so that surplus embryos may only arise when embryonic transfer does not take place for some reason (for example, because the woman has withdrawn her consent or for other health reasons).[122] In some countries, however, legislation has loopholes and its application has not been consistently thought through. For example, in Hungary reproductive technologies are legally permitted, promoted and practised (so that surplus embryos are inevitably created, which must then either be preserved or die), and yet the new constitution is meant to grant more scope to the protection of unborn human life. In most European countries people argue for the admissibility of precautionary cryopreservation of reproductive tissue, particularly of mature egg cells, and point out that the statutory framework is no longer up to date, and even contradictory in terms of constitutional law.[123] In countries such as Austria, the dynamic development of reproductive medicine, demographic changes in society, and the maximum age of women, along with the compatibility of pregnancy and a career, are all considered to indicate the need to revise the law.[124]

121 Ibid.

122 The Opinion on the ethical aspects of human stem cell research and use of 14 November 2000 of the European Group on Ethics (EGE), set up by the European Commission, leaves the regulation of embryonic research in the competence of the member states (see http://www.drze.de/in-focus/stem-cell-research/laws-and-regulations?set_language=en). Hungary for instance only permits freezing of egg and sperm cells for personal therapeutic use with the intention of a later transfer, preservation of embryos (also surplus embryos) until the moment of implantation, in the case of a PID (preimplantation diagnostic) until the result of the examination and a potential frozen embryo replacement, in the case of donation until the actual use of the germ cells – all of this with a view to a later pregnancy. Confer 30/1998. (VI. 24.) NM rendelet az emberi reprodukcióra irányuló különleges eljárások végzésére vonatkozó, valamint az ivarsejtekkel és embriókkal való rendelkezésre és azok fagyasztva tárolására vonatkozó részletes szabályokról, §.3–4 (Ministerial decree concerning specific use in the area of human reproduction referring to the directive on human germ cells and embryos and the regulation on cryptopreserved cells. § 3-4). Germany also prohibits the fertilization and freezing of egg cells in reserve: *Embryonenschutzgesetz* 1.1.5.

123 See e.g. Martin Heyer and Hans-Georg Dederer, eds., *Präimplantationsdiagnostik, Embryonenforschung, Klonen: Ein vergleichender Überblick zur Rechtslage in ausgewählten Ländern* (Freiburg: Verlag Karl Alber 2007).

124 Heinrich Husslein, "Cryopreservation von reproduktivem Gewebe – Was ist in Österreich erlaubt und was nicht?" *Speculum* 31 (2013): 16–21, at 21.

5.4. Church statements

The memorandum of the Evangelical Church in Austria considers the prolongation of the preservation deadline or the abolition of all deadlines for cryopreserved sperm and egg cells to be primarily a legal and not an ethical issue.[125] However, it regards the preservation of surplus embryos as a separate problem and recommends that "[i]n this case it is ethically tenable to … weigh up the discarding of the embryo versus the gaining of stem cells, as long as their use serves delimited, ethically acceptable goals."[126]

5.5. Discussion

From an ethical point of view, the cryopreservation of reproductive materials is usually not considered to be a major issue. Still, there are some points to take into account. In the case of embryo cryopreservation, this is due to the fact – already touched upon in section 5.3 – that the "material" in question is early human life. In the case of oocyte cryopreservation for age-related fertility loss, concerns are raised not so much about the procedure as such but about the very idea of trying to prolong a woman's fertile period by technical means. Since these are very different problems, we discuss them in turn.

When surplus embryos are generated in fertility treatment or parents withdraw their consent part way through a treatment cycle, cryopreservation may be the only alternative to the destruction of the embryos. In this sense it serves the life of the embryos themselves. However, a crucial question is how the embryos will be used after their storage. If they are used by their genetic parents for future cycles of fertility treatment, this raises no particular ethical issues beyond those raised by IVF itself (see section 4.5), apart from questions about risks, harms or costs that may be generated by the cryopreservation procedure itself. If they are donated to other women or couples for fertility treatment, this is an instance of the fact that fertility treatments make it possible to decouple genetic, biological and social parenthood in unprecedented ways. Some of the ethical issues raised by this are discussed further in chapters 6 and 7. If they are used in research, this will result in their destruction for the sake of the benefit that the research might bring to others. In this case, cryopreservation can no longer be said

125 *Verantwortung für das Leben*, 24.

126 A.a.O. 33.

to be serving the lives of the embryos themselves. In chapter 9 we discuss further whether such uses of human embryos can be morally justified. A related issue is that cryopreservation may lead to a demand for the import and export of cryopreserved "material" between countries with different legislation governing preservation and research. Even if ways of legally regulating such import and export are agreed, the ethical dilemmas remain, because it remains the case that embryos fertilised eggs or other cells with the potential to generate a new human life are being commercialised and treated as merchandise.

A further question, raised by cryopreservation as such, is whether any time limit should be placed on the storage of embryos. Christians might wonder whether the indefinite preservation of embryos is an imitation (or parody?) of a Christian understanding of everlasting life.[127] More pragmatically, there may be concerns that frozen embryos would deteriorate over time, becoming less viable and at increased risk of birth defects or disabilities. However, there is no clear evidence for deterioration during storage, and in the United Kingdom (for example) the statutory time limit for storage was raised from 5 to 10 years when the legislation was revised in 2008.[128] Further questions then arise: what should be done with embryos if they are not wanted for implantation, or have exceeded any time limit prescribed by law or considered safe for fertility treatment? Should they be thawed out and allowed to perish "naturally"? Or should they be used for research on the grounds that their life will then benefit others rather than being wasted? At this point, familiar questions about whether anyone has the *right* to have a child (section 3.6), the moral status and value of embryonic human life (section 3.5), and the ethics of embryo research, recur. In relation to the last of these, it might be asked whether the classical principle *in dubio pro vita* should be called into question in the case of the countless germ cells and embryos in storage around the world. May the fundamental protection of life be relativized in the case of these preserved embryos, for example to permit research that will promote health and healing, exceptionally and subject to careful regulation? This question will be taken up in ch. 9, below.

Last but not least, embryo cryopreservation offers the opportunity to counter infertility through treatment. On the other hand, there is the

127 Cf. postmodern ideas about having an effect even after death: Dominik Groß, Brigitte Tag and Christoph Schweikardt, *Who wants to live forever? Postmoderne Formen des Weiterwirkens nach dem Tod* (Todesbilder 5, Frankfurt a.M.: Campus, 2011).

128 *Human Fertilisation and Embryology Act* (2008), section 15 (3).

question of whether the potentiality of human life at its origins can be reconciled with the idea of "development in stages" (through freezing in the initial phase) or not. The interruption of development through preservation with unclear prospects of implantation may sometimes have an impact on the (limited) legal capacity in inheritance law – a field in which there are challenges in store for the legal development of the respective countries.

Oocyte cryopreservation for age-related fertility loss ("social freezing") raises very different questions. In theory, freezing and storing one's own eggs may sound like an ideal solution for women who are torn between the different and seemingly irreconcilable aims of founding a family and pursuing a career, or who want to become mothers, but do not yet have a partner with whom to raise the child. The costs (both financial[129] and physical), however, are high, and the prospects of success uncertain. Since the live birth rate per frozen oocyte is rather low (< 10%), numerous oocytes are necessary in order to achieve reasonable success rates.[130] This means that several stimulation cycles (with the attendant risks) might be necessary – and even with 20 or 30 cryopreserved oocytes, there is no guarantee that the wish for a child in later life will be fulfilled. Hence, even the European Society for Human Reproduction and Embryology's Task Force on Ethics and Law, which is in general rather open to new technologies, cautions that "fertility specialists should be careful not to raise false hopes. Women interested in oocyte cryopreservation for age-related fertility loss should be told that their best chances of having a child are through natural reproduction at a relative early age."[131]

Apart from these pragmatic considerations, there is also the question whether social freezing is really the appropriate answer to the problems women face in the "rush hour" of life, and, more generally, whether the attempt to circumvent age-related fertility-loss is right, or desirable, or wise at all. With regard to the first question, feminist scholars have pointed out

129 Costs differ from clinic to clinic, but as a first approximation one might calculate with 3000-4000 € per cycle (ovarian stimulation, egg retrieval and vitrification) plus storage fees.

130 Cf. Frank Nawroth, *Social Freezing: Kryokonservierung unbefruchteter Eizellen aus nicht-medizinischen Indikationen* (Wiesbaden: Springer, 2015), 17ff. – Further complications follow from the fact that the majority of women who opt for social freezing are already in their middle or late thirties, and thus clearly beyond the biologically optimal age. On the other hand, women who freeze and store their eggs at age 25 are quite unlikely to really need them in order to get pregnant (unless they consciously delay pregnancy for 15 or 20 years).

131 Wybo Dondorp et al., "Oocyte cryopreservation for age-related fertility loss", *Human Reproduction* 27/5 (2012): 1231-37 (1236).

that "normalizing oocyte cryopreservation does nothing to correct the fundamental social injustice experienced by young women in the workplace who are effectively forced to choose between having a career and raising children."[132] As long as the spheres of professional and private life are organised according to the capitalist logic of maximal productivity, and as long as reproduction is regarded as first and foremost a female responsibility, women will continue to suffer from the tension between the demands of motherhood and the demands of a career.[133] The second question is more fundamental. By countering the effects of ovarian aging, social freezing can be seen as a form of anti-aging medicine, and, ultimately, as a form of enhancement – especially if the frozen-and-thawed eggs are fertilized and transferred at a time when the woman's natural fertility has already declined to zero or almost-zero. As such, social freezing might seem to evoke familiar questions about the wisdom of staying within the bounds of nature. Does it not make good sense, one might ask, that the age difference between a woman and her child does not, in general, exceed 45 years? Is it really desirable if women become mothers at an age when they could already be grandmothers? Before jumping to quick conclusions, however, one should remember that men becoming fathers in their fifties, sixties or seventies is an accepted social reality. With parental obligations becoming more equal, and parental roles less clearly distinguishable, there is little ground left for claiming that what is all right in the case of fatherhood poses a problem in the case of motherhood.[134] This is not to say that there might not be reasons, as a matter of public policy, to place an age limit on the re-transfer of a woman's eggs,[135] and even more reasons for intending parents of older

132 Françoise Baylis, "Left Out in the Cold: Arguments Against Non-Medical Oocyte Cryopreservation", *Journal of Obstetrics and Gynaecology Canada* 37 (2015): 64-67 (66); cf. also Hille Haker, "Kryokonservierung von Eizellen – Neue Optionen der Familienplanung? Eine ethische Bewertung," *Zeitschrift für medizinische Ethik* 62/2 (2016), 121-32.

133 It should be noted, however, that the majority of women who choose to freeze their eggs do not cite difficulties in combining family with a career, but lack of a suitable partner as main reason for their decision (cf. Brooke Hodes-Wertz et al., "What do reproductive-age women who undergo oocyte cryopreservation think about the process as a means to preserve fertility?", *Fertility and Sterility* 100/5 (2013), 1343-49 (1346); Ana Cobo et al., "Oocyte vitrification as an efficient option for elective fertility preservation", *Fertility and Sterility* 105/3 (2016): 755-64 (760).

134 Cf. Imogen Goold and Julian Savulescu, "In Favor of Freezing Eggs for Non-Medical Reasons", *Bioethics* 23/1 (2009): 47-58; Stephanie Bernstein and Claudia Wiesemann, *Laws* 3 (2014): 282-300.

135 Such an age limit, however, would have to be carefully argued for, and it would have to be consistent with other age limits – not least with possible age limits for men making use of

age (both men and women!) to consider seriously whether they really have the physical and emotional ressources to care for a child up to the age of maturity. But given the fundamental (and sometimes inevitable) ways in which the sphere of reproduction is shaped by gender inequalities, and the lasting impact of gender stereotypes, Christians who hold to the promise of Gal 3:28 should be wary of simply denouncing women's attempts to make good for these inequalities by technical means.

ART.

6. Insemination, gamete and embryo donation, and the use of eggs from different women

6.1. Introduction

Fundamentally, gamete (egg or sperm) donation leads to a decoupling of genetic, biological and social or statutory parenthood. *Genetic* parents are the persons from whom the germ cells originate. The *biological* mother is the woman who bears the child. *Social* or *statutory* parents are those who are attributed the parenthood under applicable law. The circumstances of descent become additionally complicated when the egg cells of different women are used. In the case of genetic damage to the mitochondria of an egg cell it is possible to transfer the nucleus of the egg cell into the cell plasma of a genetically undamaged, enucleated egg cell. Since not just the cell nucleus but also the mitochondria contain DNA, we should, strictly speaking, refer to two genetic mothers (see, further, chapter 9). The child could have four, or in the case of surrogate motherhood, five parents. A decoupling of genetic, biological and social or statutory parenthood also takes place in the event of embryo donation. Here the question of similarities and differences arises compared to the adoption of children who have already been born.

The questions arising through gamete and embryo donations can be subdivided into medical, legal and ethical issues.

The *medical* questions concentrate on the possible indications in favour of a gamete or embryo donation. An additional point to clarify is the possible risks to the health of both the recipients and also the donors. The medical questions also include whether gamete and embryo donations should be

exclusively admissible for medical reasons. Could they be considered in the context of a wish-fulfilling medicine - as a way of fulfilling the wish for a child that could possibly be fulfilled by other means?

The *legal* questions concern liability arrangements, then the legal regulation of parenthood, family membership and maintenance claims. Furthermore, the question arises whether it should only be permitted to donate gametes *gratis* (with reimbursement of expenses), or whether it is permissible to sell them for profit.

The *ethical* questions are not restricted to the possible health risks for donors and recipients, but also include questions about the child's welfare. Here we must distinguish between physical and mental health and the social welfare of the children. Is the child's welfare impaired through the separation of genetic, biological and social parenthood and the various possible configurations of them? What about the right of a child "to know and be cared for by his or her parents," as set out in the UN Convention on the Rights of the Child? What is the relationship of the right to reproductive (procreative) empowerment to the child's welfare?

We must distinguish between empirical and normative positions regarding the child's welfare. While an empirically argued position can refer to psychological studies according to which children born with the aid of reproductive medicine are not disadvantaged more than other children, some normatively argued positions regard the identity of genetic, biological and social parenthood as a moral good that is to be preferred to other configurations of descent and family.

Behind contradictory ethical assessments of gamete and embryo donations are differing attitudes to the normativity and empirical plurality of current ways of life and forms of family. In fact there are the most varied family patterns today: traditional marriages, patchwork families after divorce and new relationships, one-parent families, same-sex life partnerships. In view of the social realities, is it possible to justify the special statutory protection of marriage and the family in legal and ethical terms? Should this protection be extended to analogous life partnerships or largely given up altogether?

For the Christian churches the special question arises as to the guidance given by biblical testimony and the extent to which the Bible is a source of normative statements about marriage, family and procreation that can be directly applied to the questions of egg, sperm and embryo donation. The potential for conflict existing particularly within the German Protestant

churches is shown by the controversy sparked in 2013 when the Evangelical Church in Germany (EKD) published its reference paper *Zwischen Autonomie und Angewiesenheit. Familie als verlässliche Gemeinschaft stärken* (*Between Autonomy and Dependence: Strengthening the Family as a Reliable Community*).

6.2. Facts and figures

There can be various reasons for donating egg cells.[136] It could be that the egg cells of a woman desiring to have a child are, for medical reasons, unsuitable to bring about a pregnancy or are of such bad quality, that even with IVF the chances to become pregnant remain minimal. This is mainly the case for older women. Another reason might be the wish to become pregnant after the menopause. Also, some women are born without ovaries or they have had to be removed through surgery – e.g. following tubal pregnancy or because of cancer. Another indication is severe endometriosis.

By contrast with sperm donations, donating an egg cell is linked with an invasive intervention. In the case of women whose follicles do not mature in the usual monthly cycle, the ovaries first need to be stimulated by hormones. If necessary, ovulation must be induced artificially. Often several follicles mature on the basis of hormonal stimulation. The yield may even be in the two-digit range. In order to ascertain whether it comes about, the individual steps are surveyed by ultrasound and chemically in the laboratory. The ovaries are punctured in order to "harvest" the matured follicles.

1984 saw the world's first pregnancy following egg cell donation. In the USA the rate of pregnancies following egg cell donation is around 10 per cent. In Europe the number of cycles with donated egg cells increased from 4441 in 1998 to 15028 in 2007 according to the European IVF Monitoring Consortium.[137] Pregnancy rates per transfer are between 30 % (Great Britain) and 48% (USA). The higher success rate in the USA can probably be explained by the higher number of embryo transfers.

136 Cf. Klaus Diedrich, Michael Ludwig and Georg Griesinger, eds. *Reproduktionsmedizin* (Berlin/Heidelberg 2013), 288. For details of egg donation and medical procedures see 288ff and references therein.

137 Cf. Guido Pennings, "The Rights and Wrongs of Egg Donation", *Focus on Reproduction* (May 2011); 32–35.

The whole procedure is connected to health risks for the donors. It may lead to a hyperstimulation syndrome with, in serious cases, fluid accumulation in the abdomen and the lungs. Kidney failure and strokes are also possible. Occasionally even death results. Risks such as bleeding and organ injuries also exist during the removal of follicles. Women who donate egg cells frequently can even suffer scarring of their ovaries leading to infertility.

Donors may be known or unknown to the woman or couple wishing for a child. In the USA special agencies exist for donating egg cells. In the case of an anonymous donation the law (see section 6.3.) allows the child to learn about the donor's identity at a later stage. In France and Sweden there is the practise of cross donation. If a couple brings along a donor they will receive the cells of another, anonymous woman, while the egg cells of the known woman will be given to another unknown woman.

In Britain there are "egg-sharing" programmes. Women willing to pass on surplus egg cells to other women are offered IVF at lower cost or free of charge. Consequently the recipient does not need to undergo hormone stimulation and thereby avoids the health risks associated with egg donation for the donor. The recipient may also be a woman who cannot for medical reasons be stimulated hormonally, so that her own egg cells cannot be used for IVF. However, health risks exist not only for the donors but also for the recipients and the foetuses, as described earlier (section 4.2),[138] although long-term data about children and the resulting families are unavailable.

The higher age profile of women whose pregnancies follow egg donations, and the increased rate of multiple pregnancies, may increase the risk of hypertension during pregnancy. In addition the embryo resulting from egg cell donation has a totally different set of chromosomes than the woman bearing the child. Despite an increasing number of pregnancies worldwide following egg cell donation, little is known so far about biochemical and immunological interactions and their potential negative long term effects. Nevertheless, it seems that pregnancies following egg cell donations bear a slightly higher risk of a pathology of the placenta.[139]

138 Ulrich Pecks, Nicolai Maas and Joseph Neulen, "Eizellspende – ein Risiko für Schwangerschaftshochdruck: Metaanalyse und Fallserie", *Dt. Ärzteblatt* 108.3 (2011): 23-31.

139 Cf. MLP Van der Hoorn, E Lashley and D.W. Bianchi, "Clinical and immunologic aspects of egg donation pregnancies: a systematic review", *Human Reproduction Update* 16.6, (2010): 704–712.

6.3. Legal situation

Egg donation, sperm donation and embryo donation are subject to different rules in Europe – they are sometimes prohibited and sometimes permitted. As a detailed example, consider the situation in Austria. Sperm donation, which was allowed for artificial insemination before it was permitted for IVF, has since 2015 been permitted for the latter as well,[140] although only when the sperm of the male partner is not capable of reproduction. Another case that is now permitted is that of two women forming a registered partnership or de facto partners and requiring medical support for reproduction. Egg donations have been permitted since 2015 when the egg cells of the woman for whom the pregnancy is to be induced are not capable of reproduction and she has not reached the age of 45 when the treatment starts. This provision also applies to lesbian couples. Egg and sperm donations are not permitted for single women. Donating embryos continues to be prohibited. Like the couples wishing to have children, women who are willing to donate eggs must be instructed about the methods of the intervention and possible side-effects and consequences. Medically supported reproduction with the sperm or eggs of third persons may only take place in a licensed hospital. Sperm or eggs of third parties may be used for medically assisted reproduction in a maximum of three marriages, registered partnerships or cohabitations. Sperm from different men and eggs from different women must not be combined in medically assisted reproduction. Furthermore there is a ban on marketing and dealing. Egg and sperm cells must therefore not be sold but only made available gratis, though donors may receive an expense allowance. As with every commercial supply of egg and sperm cells, advertising to obtain or supply them is also prohibited.

Most European states permit sperm donation: only Italy and Lithuania prohibit it altogether, while in a few states (including Ireland, Luxembourg and Poland) it is not covered by legislation. There is variation, however, on the question of anonymity: some states (e.g. Sweden, the Netherlands and the UK) prohibit anonymous donation, some (e.g. Bulgaria, the Czech Republic, France and Spain) prohibit non-anonymous donation but permit anonymous donation, and a few (Belgium, Latvia, Romania) allow both.[141]

140 Cf. Gesamte Rechtsvorschrift für Reproductive medicinegesetz, https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10003046 (accessed 20 June 2015)

141 European Society of Human Reproduction and Embryology (ESHRE), "Comparative Analysis of Medically Assisted Reproduction in the EU: Regulation and Technologies

Donating egg cells is permitted in most European states; it is, however, still prohibited in Germany, Italy, Norway and Switzerland. As with sperm donation, rules about anonymity vary, with some countries prohibiting anonymous egg donation, some prohibiting non-anonymous donation, and some permitting both.[142] In Greece and the Netherlands it is permitted to donate embryos free of charge for research purposes. In Britain and Belgium it is basically permitted; in France, only in exceptional cases.[143]

In legal proceedings against Austria the European Court of Human Rights (ECtHR) had to decide whether banning egg donation was unequal treatment and therefore inadmissible if a state fundamentally allows artificial insemination. In 2010 the Court of First Instance ruled that both the absolute prohibition of egg donation and the ban on IVF with sperm donated by a third party violates Article 14 (Prohibition of Discrimination) in connection with Article 8 (Right to Respect for Private and Family Life) of the European Convention on Human Rights (ECHR). In 2011, however, the Grand Chamber of the ECtHR, which had been called upon by the Republic of Austria following the Chamber judgement, did not confirm the judgement, but suggested that the decision could differ, if the case and the judgement of the Austrian Constitutional Court from 1999 were re-examined today, because society's assumptions about family life and the private sphere have changed.[144]

In some countries egg cell donation is only allowed free of charge, because legislators want to prevent the economic exploitation of women. On the contrary in other countries egg cell donation for payment is permitted arguing that without financial incentives the number of women willing to donate would be too small, and that the decision to make the donation lies entirely with the woman. Laws about financial reimbursement for sperm and embryo donation also vary. Probably the most restrictive is Romania, which prohibits every kind of reimbursement and financial compensation for assisted reproductive treatments.[145]

(SANCO/2008/C6/051), Final Report", 28. Online at http://ec.europa.eu/health/blood_tissues_organs/docs/study_eshre_en.pdf (accessed 17.12.2015).

142 Ibid., 29-31.

143 For a survey of other states, see ibid., 27.

144 ECtHR (GCh), 3.11.2011, S.H. vs. Austria, Nr 57.813/00 , http://hudoc.echr.coe.int/eng#{%22appno%22:[%2257813/00%22],%22itemid%22:[%22001-107325%22]}

145 ESHRE, "Comparative Analysis of Medically Assisted Reproduction in the EU", 27.

6.4. Church statements

There are only a few church positions available in the area covered by the CPCE regarding gamete and embryo donations. The Evangelical Church of the Augsburg and Helvetic Confession in Austria, in its 2001 memorandum *Verantwortung für das Leben* (*Responsibility for Life*), rejected the possibility of donating embryos, which it discussed under the heading "adoption of embryos".[146] Transferring the right of adoption to embryos was not only questionable on grounds of family law, it was argued, but also becuase – unlike with new-born children – one could not speak of an unconditional right to live and the duty to make surplus embryos available to third parties. At the same time, the Evangelical Church in Austria also came out against donating egg cells. However, in 2014 the church administration (Evangelische Oberkirchenrat A.u.H.B.) welcomed the new law amending legislation on reproductive medicine, with its new provisions on egg and sperm donation; it argued only in terms of legal policy and not theologically.

In Britain, the Church of England and the Church of Scotland rejected egg cell donations in statements back in the 1980s. They did not however declare that they were against medically assisted reproduction in principle, unlike the Roman Catholic Church, which made the latter clear while also rejecting egg donation.[147]

The Church of Norway has taken a similar position, rejecting egg cell and embryo donations. The point was not a principled resistance towards medically assisted reproduction as such, but rather that donation would contradict an indissoluble biological and bodily connection between a woman and the egg cell, respectively the embryo. Allowing egg cell or embryo donation (or surrogacy) would "open up for an intended and purposefully dissolution of the intimate connection between being a biological, genetic and social parent of a child. In other words one goes a long way in ascribing inherent value to processes of natural procreation, as opposed to technological or assisted ones.[148] However, the church has not

146 *Verantwortung für das Leben*, 25f.

147 Agneta Sutton, "Three Christian Views on Assisted Conception and Marriage - The Roman Catholic Church, Church of England and Presbyterian Church of Scotland", *Eubios Journal of Asian and International Bioethics* 6 (1996): 105-107.

148 Church of Norway, National Council Working Group, *Mer enn gener [More than genes]* (1989),103–104

drawn the conclusion of complete rejection or opposition against assisted medical reproduction.

The British Methodist, Baptist and United Reformed Church report *Created in God's Image* (2008) refers to the fact of egg cell, sperm and embryo donations, the usual practice and its problems, but does not draw a final conclusion. The moral issues and qualms were already framed in the 1990 report *The Status of the Unborn Human*. Ethically, the document sees no basic difference between egg, sperm and embryo donation and urges that the child's welfare be placed at the centre of ethical consideration.

In 1990 the World Council of Churches called for a statutory ban on commercial surrogate motherhood and trading with sperm and egg cells, as well as with embryos, foetuses or parts thereof.

In 1987 the Evangelical Church in Germany (EKD) published a declaration entitled *Zur Achtung vor dem Leben*, to which the guide *Von der Würde werdenden Lebens (The Dignity of Life in its Origins)*, produced in 1985, was appended (EKD-Texte 20). The EKD strongly rejects heterologous insemination plus egg and sperm donation for IVF. It justifies its rejection with the fact that the said options led to tensions between the parents and towards the child, and consequently could threaten the child's feeling of security in the family. Furthermore the EKD assumes a "right of the child to uniform parenthood", which is infringed by any form of surrogate motherhood – whether for remuneration or not. Heterologous insemination is an "invasion of marriage", it says, and violates the exclusiveness of marital relations according to the Christian understanding of marriage. In its aid to arguments for current medical and bioethical questions entitled *Im Geist der Liebe mit dem Leben umgehen (Dealing with Life in a Spirit of Love*, EKD-Texte 71, 2002) the EKD did consider the option of making surplus embryos available for adoption, albeit with ethical scruples because of the consequent division in parenthood.

The Estonian Council of Churches in 2006 compiled the standpoints of its member churches on different bioethical questions. By contrast with the Roman Catholic Church, for example, the Estonian Union of Gospel Christian Baptists regard heterologous fertilisation as admissible and justifies this by reference to relevant passages in the Old Testament, but also in the New Testament, provided that the supply of egg or sperm cells does not become commercial.

6.5. Discussion

6.5.1. Ethical considerations on egg and sperm donation

In view of the social change of family forms and ways of life, which are often in interplay with the development of modern reproductive medicine, the Christian decision in favour of monogamy and the related family ideal cannot be motivated solely by a "natural theology" or supposedly timeless biblical norms. Rather its crucial ground is, in the words of Helmut Thielicke, "in the Christian redefinition of partnership – thus also marital communication – through agape".[149] In a pluralist society the gospel, from which there is a call to monogamy with corresponding consequences for reproductive medicine, cannot be claimed to be a general natural moral code that then has to be implemented in state law. Christian faith and the churches can and should advertise the attractiveness of their picture of marriage and the family, but can no longer make it the only measure of secular law.

The ban on egg donation in some European countries can no longer be ethically and legally justified with reference to the stability of a former Christian family model and its continuing role as orientation for modern society. That is also seen in the recent judgment of the European Court of Human Rights. The different treatment of egg and sperm donation, and the different treatment of sperm donation in artificial insemination and *in vitro* fertilisation, are also ethically and legally questionable. Bans or restrictions infringe on the principle of equality. But even theologically they are hard to justify, taking account of the biblical and theological points made in section 3.2.

However, the question of the child's welfare must enter into the ethical discussion and assessment of the individual case more fully than it often does. That is a limit of the reproductive autonomy of potential parents. As well as the medical and psychological aspects discussed in chapter 4, the child's welfare also includes the right to know his or her genetic origins: according to Article 7 of the UN's Convention on the Rights of the Child, children have the right to know their parents and be cared for by them "as far as possible." This first presupposes that personal information about the sperm or egg donor must be carefully documented and preserved. Children conceived with the aid of third-party gametes must be granted the right to

149 Helmut Thielicke, *Theologische Ethik*, Bd. III (2nd ed., Tübingen, 1968), 584.

inspect the notes and impart their contents, when they reach an appropriate age as laid down by law. The genetic father will, however, only be known if a mixture of sperm from several men has not been used. Using such a mixture should be ruled out by law. The child's welfare and the protection of the family will also be assisted if the gametes of third parties are only used in a very restricted number of marriages or *de facto* partnerships.

Egg donation or sperm donation may also have a negative emotional effect on recipient couples, with an indirect impact on their children. For example, one marriage partner may have a sense of adultery when conceiving a child with the involvement of a man or woman outside the couple. The child growing up may develop characteristics of a third person (the genetic mother or father), which could cause some psycho-social disturbance.[150] The sterile father may feel a failure. Reduced to the role of the social father, he may be afraid to explain his child's true biological origin to him or her.[151] The conspiracy of silence may damage the welfare of the child and the integrity of the family as a whole.[152]

A controversial question is whether the child's welfare is infringed when single women without stable partners want to become pregnant by means of reproductive medicine, and whether this also applies to children of lesbian or male homosexual couples,[153] and for those born by surrogate mothers. We have already referred to the difference between an empirical and a normative approach (section 2.6). Empirically speaking, we can quote studies comparing children of heterosexual couples with children of same-sex partners, one-parent families or after the divorce of their parents. These studies show no

150 Arthur Kemalvezen, *Ganz der Papa! Samenspender unbekannt* (Düsseldorf: Patmos 2009). There are support groups like "Spenderkinder" in Germany. See http://www.spenderkinder.de/infos/psychologisches/ (accessed 29 August 2016).

151 Tewes Wischmann and Petra Thorn, "Der Mann in der Kinderwunschbehandlung (unter besonderer Berücksichtigung der donogenen Insemination)", *Journal für Urologie und Urogynäkologie* 22.2 (2015): 9-17.

152 Helen Riley, "Confronting the conspiracy of silence and denial of difference for late discovery adoptive persons and donor conceived people", *Australian Journal of Adoption* 7.2 (2013).

153 In addition to questions of the child's welfare, the question of whether gamete donation should be available to same-sex couples relates to wider questions about homosexuality, homosexual partnerships with and without children, including the question of the right of homosexual couples to adopt children; as noted earlier (chapter 1), these are matters of lively current discussion for some member churches of CPCE.

significant difference in their mental and other development.[154] However, we should not play down the trauma for the children when their parents separate. It also makes a difference whether the reasons why a child grows up without the biological father or mother was caused by unforeseen circumstances – e.g. the death of a parent or breakdown of the marriage – or was deliberately planned.

It may be countered that the most elementary right of each child is the right to life. Being born at all is to be rated more highly than the disadvantage of possibly not being brought up by one's biological parents. This argument could be put forward in favour of reproductive cloning too. Whether one should bear a child if this can only happen by means that violate the child's fundamental rights or even human dignity is an ethical question. And it must be answered, independently of how restrictive or liberal a legal order is.

A further question concerns payment to those who make their gametes available. Fundamentally it should be admissible to make gametes available only as a donation. From a biblical perspective life is a gift of God. It may be an expression of loving one's neighbour to donate a part of one's own body, e.g. blood, bone marrow or organs. In this way also egg and sperm donation may be a form of helping another person or a couple, which is in need. But because children never may be an object of purchase, also the gametes, by which the children are procreated, should not be sold or bought. The respect for the human being as created in God's image includes the reverence for sources of new human life.

A special question is the ethical assessment of "egg sharing". The general question is, however, that of how the financing of IVF in a country is regulated: for example, whether the cost of a certain number of attempts is fully or partly met by health insurance or public funding, or must be exclusively borne by the persons concerned. It would be ethically questionable to have a financing system that strengthened incentives for egg-sharing or was systematically based on it. That is all the more true in that the donors could be exposed

154 See N. Anderssen, C. Amlie and E. Ytterøy, "Outcomes for children with lesbian or gay parents: A review of studies from 1978 to 2000", *Scandinavian Journal of Psychology* 43.4 (2002): 335-351; American Psychological Association, "Sexual Orientation, Parents & Children", Adopted by the APA Council of Representatives (July 28 & 30, 2004), online at http://www.apa.org/about/policy/parenting.aspx (accessed 29 September 2015); M. Rupp, Die *Lebenssituation von Kindern in gleichgeschlechtlichen Lebenspartnerschaften* (Köln, 2009); N. Gartrell and H. Bos, "US National Longitudinal Lesbian Family Study: Psychological Adjustment of 17-Year-Old Adolescents", *Pediatrics* 126.1 (2010): 28-36.

to the risk of hormonal hyperstimulation, if the initial aim was for them to produce enough egg cells for two women. The hormonal treatment may lead to a threat to health, and even to life, through a hyperstimulation syndrome.

Compared to sperm donation, the risk of egg donation for women willing to donate generally involves higher health risks. Besides the prior hormonal treatment, retrieving the egg is an invasive intervention. There is also a risk that women may be economically exploited. These risks must be effectively countered through appropriate measures. That is not only a question for national legislation, but also requires international efforts. Yet the existing dangers are not an adequate ground for justifying a general ban on donating egg cells. However, the general principles of medical ethics regarding information from the doctor and informed consent must be observed – this must be guaranteed. The prohibition of commercial interests must also be enshrined in law Europe-wide.

6.5.2. Embryo donation

IVF should basically not fertilise more egg cells, or produce more embryos than are necessary within a cycle of an attempted pregnancy. In fact, however, it often happens that there are embryos over and that these are no longer used by the couples concerned for their own attempts to become pregnant. In general, the methods of IVF should be improved so that the number of surplus embryos is kept as low as possible. If their existence simply cannot be avoided the question is what must, or may, happen to them.

Instead of being immediately destroyed, surplus embryos are normally kept for a while in a frozen state (cryopreserved). Legislation in many countries provides that these embryos must be destroyed after a certain period of time. Another possibility is that surplus embryos are made available to other couples for purposes of reproduction. A further possibility is to use the surplus embryos for research, for example to gain embryonic stem cells, once informed consent has been obtained from the parents or the woman from whom the fertilised egg cell originates.[155]

155 The question of whose consent is required, and why, is a complex one that is answered differently in different jurisdictions: should it be the woman, or both genetic parents? If the embryo has been created from donated gametes the situation is even more complicated, because up to four people could be involved: the two genetic parents of the embryo, and a person or a couple for whom it has been conceived.

Basically two ethical arguments are often adduced in favour of embryo donation. Firstly, one can argue that it is in the interest of the embryo. That applies, in particular, if the fertilized egg cell or the embryo is already regarded in its early *in vitro* state as a nascent human being and a person with a right to life and human dignity, which corresponds to one widespread Christian position (see, further, section 3.5). The second argument starts more from the reproductive autonomy of women or couples desiring to have children. If egg and sperm donation is not fundamentally excluded or ethically rejected, then according to the principle of equality (so this argument goes) there is no reason why there should be a fundamental difference between donating a gamete and donating an embryo. On the other hand, a critic might reply that this appeal to the principle of equality presupposes that there is no fundamental difference of ontological and moral status between gametes and embryos, an assumption that many Christians would reject (again, see section 3.5). A further concern that might be raised about this line of argument is that it opens the door to ethically problematic practices of surrogacy, discussed further in chapter 7.

Should embryo donation be allowed, the regulation should orientate itself on the regulations for adoption.[156] However this question is judged ethically, there is a fundamental difference between embryo donation and giving a child up to adoption. The legal possibility of adoption is basically only applicable to persons after birth. Embryos cannot simply be equated with persons after birth, as shown by the debate on the status of embryos, when the formation of several embryos is not ruled out. The fact that embryos in vitro do not have an unconditional right to live is shown from that fact that the biological mothers cannot be legally forced to bear a child from each and every one of her embryos. That shows the asymmetry of the comparison with adoption law. Born children enjoy comprehensive protection from the state. That is, they must either be brought up by their parents or the mother offers them for adoption. On no account may they be killed. An ethically difficult case of conflict could arise with "adopted" embryos if the mother uses her freedom of decision to have an abortion, which she can do with impunity in most European states within a legally determined period. Further, no advocate of the adoption solution for embryos will want to go to the lengths of obliging anyone to put the surplus embryos up for adoption.

156 For the discussion in Austria see *Reform of the Reproductive Medicine Act. Opinion of the Austrian Bioethics Commission* (Vienna 2012), 92f, 109, 128.

The arguments compiled so far lead to the conclusion that embryo donation for fertility treatment can be accepted under certain conditions, particularly when, from the theological standpoint, there are no compelling grounds to prohibit all egg cell or sperm donation. However, as long as the ontological, moral and legal status of the human embryo is contested theologically (see section 3.5), different views will be possible as to whether embryo donation is a moral duty. If the embryo is held to be a person with the human right to life, it might follow that embryo donation is a moral duty.[157] If, on the other hand, one considers that the embryo is not (yet) a person, there may be stronger grounds for saying that donation should remain the free decision of the embryo's genetic parents.[158]

A further problem arises when we remember that generally several embryos are used in the attempt to achieve a pregnancy with the aid of IVF. Theoretically it would be conceivable to use several embryos from different women. By analogy with the ban on mixing sperm, this possibility should be ruled out.

The ethical arguments raised by the donation of embryos for research will be considered further in chapter 9. In the present discussion one further problem must be noted: embryo donation is similar to surrogate motherhood in terms of procedure. While in the case of embryo donation the gestational mother is identical with the social and legal mother, in surrogacy the intention is to hand the child over after the birth to another woman, who will then assume the maternal role. The ethical and legal arguments about surrogacy must be discussed separately from those about embryo donation, and will be explored in chapter 7. As long as the latter is considered ethically and legally inadmissible, statutory regulations for embryo donations must be framed so that the simultaneous prohibition of surrogate motherhood is in harmony with the principle of equality.

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157 A further question arises at this point: if embryo donation is a moral duty, should it also be a legal duty? Not all advocates of the first position argue publicly for the second; are they being inconsistent if they do not? The answer depends in part on the view one takes of the relationship between law and ethics, and the role that the law should play in enforcing moral norms (see section 3.7). Christians who reflect on this issue generally agree that the law is not an appropriate instrument for enforcing every moral norm, in which case it might be possible to argue consistently that embryo donation is a moral duty but in some political contexts it would be inappropriate to try and make it a legal duty.

158 "Genetic parents", because there is at least an argument for saying the genetic father must also consent. Cf. the legal position in the UK, where the 2008 Human Fertilisation and Embryology Act stipulates that "each relevant person" must consent to the use of an embryo.

7. Surrogacy

7.1. Introduction

In the public media debate, the issue of surrogacy is probably the one among assisted reproductive technologies which has drawn the largest attention and generated most controversies. This seems to no small degree to be spurred by the numerous personal narratives surfacing in several countries. Some of course are about happy couples or individuals which are able to fulfill a deep wish for a family with children through this procedure, including gay male couples. Others are about the surrogate mothers, telling about their motivations for carrying a baby to be handed over to live in another family. And then there is the, apparently growing, number of stories about babies born within surrogacy arrangement, but for some reason are not united with their intended parent(s), but are also not kept by the surrogate mother.

The ethical questions and dilemmas evoked by surrogacy are not primarily related to the medical technologies used, and potential new ethical issues raised as result. Surrogacy typically involves the traditional, well established and widely accepted reproductive technologies of sperm donation and insemination, or IVF, possibly combined with donation. Instead, the ethical challenges surrounding this form of ART stem from the way agents are related to each other in forming a family, in particular how it implies that a child is brought into a family with the explicit intent of having no relation with the birth mother.

7.2. Definitions[159]

Schematically, the following concepts are relevant to map the landscape of surrogacy:

Surrogacy	A practice whereby a woman will become pregnant with the intention of giving the child to someone else upon birth
Surrogate mother	The woman who carries and gives birth to the child.
Intended parent	The person who intends to raise the child
Traditional surrogacy arrangement	Surrogacy where the surrogate mother's eggs are used and she is the genetic mother of the child. Pregnancy comes about through insemination procedure with the sperm of the intended father or a donor, or through sexual intercourse with the intended father or another man
Gestational surrogacy	Surrogacy in which the surrogate mother's eggs are not used and someone else is the genetic mother of the child. The pregnancy comes about through an IVF procedure using either the intended mother's eggs or donated eggs.
Altruistic surrogacy	Surrogacy arrangement where the surrogate mother is paid nothing, or only remunerated for her expenses associated with the surrogacy. Usually the intended parents cover such expenses
Commercial surrogacy	Surrogacy arrangement where the surrogate mother is remunerated beyond expenses associated with the surrogacy. This may be termed a 'fee' or 'compensation' for pain and suffering. Usually the intended parents cover such a payment

159 The following definitions and overview of legal situation are largely based on Brunet et al: *A comparative study on the regime of surrogacy in EU Member States*, 2013. This report was requested by European Parliament's Committee on Legal Affairs.

Legal parenthood	The attribution of legal status to someone as the parent of the child. Legal parenthood can be attributed on a number of grounds other than bio-genetic affinity.
Cross-border surrogacy arrangements	A surrogacy arrangement involving a surrogate mother and an intended parent or parents from different countries.

7.3. Legal situation

Legal approaches vary in the European countries. There is a general prohibition against surrogacy in (for example) France, Germany, Italy, Portugal and Spain. Some countries have more detailed prohibitions: Austria prohibits egg donation and therefore by implication also gestational surrogacy; Finland prohibits surrogacy which involves fertility treatment, whereas it is illegal for fertility clinics in Sweden to make surrogacy arrangements. Norway only permits implantation of fertilized eggs in the genetic mother, which by implication precludes gestational surrogacy. Other countries prohibit commercial surrogacy only, for example Denmark, Greece, Hungary, Ireland, Latvia, Netherlands and UK. And some countries have no specific law on surrogacy at all, such as for example Cyprus, Czech Republic, Lithuania, Poland, Romania, Slovakia and Slovenia. Others lack regulation of specific cases of surrogacy, such as altruistic surrogacy or traditional surrogacy. The procedure for transferal of parenthood in such cases varies, but typically it happens through adoption whereas contracts are not enforceable.[160]

A European Parliament report of 2015

> condemns the practice of surrogacy, which undermines the human dignity of the woman since her body and its reproductive functions are used as a commodity; considers that the practice of gestational surrogacy which involves reproductive exploitation and use of the human body for financial or other gain, in particular in the case of vulnerable women

160 See further Präg and Mills, *Assisted reproductive technology in Europe*, 13.

in developing countries, shall be prohibited and treated as a matter of urgency in human rights instruments; […][161]

7.4. Church statements

In February 2015 the Working Group on Ethics in Research and Medicine of COMECE (the Commission of [Catholic] Bishops' Conferences of the EU) issued an opinion rejecting gestational surrogacy in all its forms, on the grounds that it instrumentalizes surrogate mothers, frequently involves the exploitation of poor and vulnerable women, and commodifies the children born through surrogacy.[162]

In publications by CPCE member churches less attention is given to surrogacy than to many of the other issues addressed in this guide. Some church statements highlight the juridical questions of social and inner-family relationship which are linked to surrogacy, like probable questions about legal liability, but underline especially the far-reaching consequences for the child, whose origin is divided between genetic, corporal and social mothers.[163] They assume a children's right to a homogenous parenthood and a legitimate right to know its origin and identity. The EKD's 1985 guide *Von der Würde werdenden Lebens* emphasises that procreation and pregnancy establish a corporal and mental/emotional relationship which is significant for the child, growing up in the womb.[164] The 1987 document *Zur Achtung vor dem Leben* calls for both altruistic and commercial surrogacy to be legally prohibited.[165] A 1990 document of the Federation of Swiss Protestant Churches draws a parallel between moral objections to surrogacy

161 European Parliament, *REPORT on the Annual Report on Human Rights and Democracy in the World 2014 and the European Union's policy on the matter (2015/2229(INI))* (adopted 17 December 2015), pt 114, p. 29.

162 COMECE, *Opinion of the Reflection Group on Bioethics on Gestational Surrogacy: The Question of European and International Rules* (Brussels: COMECE, 2015). Online at http://www.comece.eu/dl/nLpuJKJnmLLJqx4KJK/Surrogacy_EN_WEB.pdf (accessed 11 January 2016).

163 Körtner, *Verantwortung für das Leben*, 25; EKD, *Von der Würde werdenden Lebens*, 13; EKD, Zur Achtung vor dem Leben, 5.

164 EKD, *Von der Würde werdenden Lebens*, 13.

165 EKD, *Zur Achtung vor dem Leben*, 5.

and heterologous artificial insemination, and also calls for a legal ban on commercial surrogacy, along with trade in gametes, embryos, etc.[166]

7.5. Discussion

7.5.1. The main ethical questions raised by surrogacy

Surrogacy raises a number of ethical questions and concerns. One fundamental question concerns whether it can at all be considered morally acceptable for two parties to set up an agreement that one will become pregnant, with the explicit intention to give up the child at birth to the other party. Some objects that this entails unacceptable instrumentalising or "renting/lending"out of the body or bodily parts. Others claim that based on the principle of respect for autonomy and the fact that people's view about what constitute instrumentalisation of the human body might well differ, these arrangements should not be interfered with, provided the surrogate mother has made the decision voluntarily.

Some feel that it makes a difference whether it is commercial or altruistic surrogacy, and that it is particularly in commercial surrogacy arrangements that the surrogate mother might be at risk of being exploited and forced. But in cases of altruistic surrogacy arrangements, for instance between sisters or close friends, and where no financial incentives are offered and no pressure are involved, the surrogate mother's motivation to help another woman become a parent should be respected, maybe even applauded.

Another question concerns the child born as a result of surrogacy. Some have raised concerns regarding the potential and yet largely unknown effects this origin might have on a person's identity and self-perception. Others argue that legal unclarities, especially regarding attribution of legal parenthood, in particular with respect to cross-border surrogacy, put surrogate children at risk of being "left in a legal limbo", without recognized parents and even without citizenship of a state.

166 Roland J. Campiche, Hans Ulrich Germann and Hans-Balz Peter, eds., *Fortpflanzungsmedizin und Humangenetik. Ein Beitrag zur Diskussion über die Beobachterinitiative* (Studien und Berichte 40 aus dem Institut für Sozialethik des Schweizer Evangelischen Kirchenbunds, 1990), 41, 49.

7.5.2. Surrogacy and Protestant ethics

Surrogacy evokes several ethical concerns that are central to Protestant ethical thinking. At a basic level it raises the question about the meaning and image of parenthood and starting a family. Furthermore it raises questions about potential instrumentalisation and exploitation of surrogate mothers. Finally there is the concern for surrogate children, and how surrogacy parenthood might expose them to various risks of harms.

Surrogacy, meaning of relations, and marriage

Surrogacy implies that giving birth is disconnected from raising the child as the social mother, and has thus been asserted to impact the meaning and image of motherhood. What distinguishes surrogacy from traditional adoption, or from other commonplace cases of children being raised by someone not their biological parent, is that this disconnection is not only anticipated, but intended, right from the planning of the pregnancy. In the other cases, such as traditional adoption or forms of foster care, the bonds between birth mother and social parent or social context of growing up, are broken for a child already born, and where the birth mother is for various reasons unable to raise the child. With respect to surrogacy, these bonds are never intended in the first place.

At a general ethical level, this could be seen as a quite consequential change to the cultural meaning of motherhood. Intending right from the time of conception that social motherhood is dissociated from pregnancy and birth, seems to change the way motherhood is broadly considered to be established, not only in its biological, but also in its social, emotional and cultural sense during pregnancy. To disconnect pregnancy and birth intentionally from the meaning of motherhood seems to disrupt fundamental images of what it is to be a mother, and how motherhood evolves and continues. Motherhood to a larger degree becomes something which, even before the child is conceived, can be willfully established as well as discontinued, quite independently of biological bonds.

As noted earlier (section 3.3), Protestant ethics will be critical of any moral resoning that reifies allegedly natural orders or processes. Such reasoning risks neglecting the significance of justification in Christ and misconstruing human responsibility. It can also serve the ideological purpose of reinforcing prevailing power structures. When some opponents of surrogacy, including some in the churches, put a lot of moral weight on the alleged naturalness

of biological bonds between mother and child, yet in practice comfortably deny that the biological bonds between father and child have any moral significance for other ART issues, one wonders whether this is a result of such an ideologically-driven argumentative dynamic.

However, this reluctance against morally absolutising worldly or natural orders on the other hand does not imply that existence and the world is simply a morally neutral place, until categories of value and goodness is imposed on it through an act of power. Protestant theology typically sees relationality as a fundamental feature of human life. This is not simply a matter of what a human person normally needs or craves in order to live a thriving and fulfilling life. At a much deeper level it points to a constitutive feature of the human condition, basically rooted in the most fundamental relation to God as creator and redeemer, yet embodied in the multiple relations in which human persons are deeply embedded in worldly life. This basic feature might manifest and express itself in many different ways, but one very central one obviously is the relation of marriage between the two partners, potentially involving the closest relation of physical, emotional and personal intimacy. In many cases it also comes to involve the further relation constituted by raising children. Although relations, including the intimate relations in family life, can clearly be destructive and oppressive, places of selfishness and distrust, relationality and its place in human life is a fundamental good and not simply morally neutral. Although familial and marital relations have taken different historical forms, thus pointing the impossibility of absolutising any one particular form as "the natural", the relations enabled by this feature of human life must still be recognised as good independently of particular individuals' ability to live up to this goodness. They have their own moral quality: they are not simply morally neutral unless human preferences or desires define them as "good".

What surrogacy seems to do, is to deny this fundamental moral quality of certain relations. Surrogacy seems to change the meaning, not only of motherhood, but of the involved relations. The goodness and value of these relations become matter of decision. The biological relation between the birth mother and the child carries no moral value or quality in and of itself, advocates of surrogacy must imply. The decision by the surrogate mother and the intended can suspend the inherent value or meaning of this relation, not emotionally, but ethically. Surrogacy implies the claim that there is no particular moral weight to the initial biological bond between birth mother and child, with regard to the surrogate mother, but also with regard to the intended parent(s). Clearly, in many cases these bonds will be cut for

various circumstances. But what surrogacy does is to insist that it makes no difference that they are intentionally cut from the very start. In other words, these relations become morally neutral or indifferent, and valuable only to the extent they are desired or willed by the surrogate and/or the intended parent. But Protestant ethics, for all its varieties, tends to reject this claim that relationality and its various potential forms are good only to the extent that they respond to human preferences or wishes. In this way, it makes sense to ask whether surrogacy implies a change of meaning of the most fundamental relations human life is embedded in, in ways that is alien or at odds with a Protestant moral outlook.

Surrogacy and concerns related to the surrogate mother

A second moral concern frequently referred to with regard to surrogacy, is that of exploitation of the surrogate mothers. This concern is typically referred to in the case of commercial surrogacy, and the argument is made with particular force, when the surrogate belongs to the underprivileged and deprived classes, often in countries with a large proportion of its inhabitants living in poverty, such as India. Anthropological studies seem to reveal that the surrogates are considering this an option to improve on the family economy, redescribing it an act of dutiful, selfless serving the good of their immediate family. Although there is a formal volunteering and consenting to acting as surrogate, this free choice is heavily coloured by the sense of duty to the family, in a social context with few or no other opportunities of income. Furthermore, studies have also made it clear how acting in this role as a surrogate, carrying a baby with another man than the husband, is heavily stigmatized. The women apply different strategies to free and distance themselves from this stigma, which on one hand testify to their powers to resist the position of the subordinate. For example, emphasizing how surrogacy is chosen freely might be a way of maintaining subjectivity and control of one's situation. In other words, the defending arguments offered by surrogates to justify or explain their course of action, might be a way of resisting the subordinate position which the practice otherwise seems to impose on them.[167]

What about surrogacy where the surrogate does not receive money or other forms of payment, other than possibly remuneration of actual expenses? Cases where family members (such as sisters) or close friends are

167 Amrita Pande, *Wombs in Labor* (Columbia University Press, 2014)

to be the surrogate can not be ruled out to imply pressure on the potential surrogate, this time not with finances and the obligations towards family, but with the potentially tight emotionally bonds within a family. Pressure and manipulation do not go away from this area only because financial payment is removed from the equation. Also, there is the risk of future conflicts as well as problems around secrecy, openness or deceit as the child grows up, with the social as well as the birth mother possibly close by. Thus these cases of surrogacy agreed between parties already tightly connected can hardly be a solution, and probably also deserves closer inspection.

This still leaves the cases of altruistic surrogacy, where a woman decides to carry a child for another couple or person, whom she does not know ahead of the pregnancy, and from whom she receives no payment other than remuneration of expenses. In these cases, although exploitation might not be the key issue, the argument regarding the meaning of familial relations remains, and so does another consideration, namely the concern for the child born through surrogacy.

Surrogacy and the child

An argument which has been advanced against surrogacy, is the impact on the child's identity of not knowing the birth mother and thus being forced to live in ignorance about a decisive element in its biographical history. Although the causal nexuses between sense of personal identity, and knowing one's biological origin, might not be entirely certain, it can not be ignored how other ART practices, such as egg or sperm donation, being conceived through IVF, as well as traditional adoption, places increasing weight on the right of the child to know its origin. Keeping information regarding biological origin from the child as it grows old enough to understand, is increasingly seen as potentially conflicting with the UN Convention on the Rights of the Child.

Yet two other considerations are perhaps even more important. First, the handing over of the surrogate baby from its birth mother to the intended parent(s) might not only be a potentially heavy emotional burden on the surrogate mother. It might also be a considerable physical and emotional burden on the baby, deprived of being nourished by its mother through breastfeeding, but also of the continued emotional closeness with her. How the baby is affected, and potentially harmed, by being deprived of these physiological and emotional bonds with its birth mother, should be a

weighty concern. Again, this is a situation which occasionally occurs in the relation between babies and mothers, but with surrogacy this deprivation is anticipated and even intended before the baby is conceived.

The other consideration has to do with the risk that the surrogate baby, due to a change of mind or circumstances on the part of the intended parent(s), ends up in a legal limbo, without parents or caretakers willing and able to take on the task of caring for, raising and providing a home for the baby. A case might illustrate the point. In 2012 an Indian surrogate mother gave birth to twins for an Australian couple. The couple, however, asserted that they could only afford financially to take home, care for and raise one of the twins. They took home the baby girl, to complete their family which already counted a son, but left the baby boy behind in India. The destiny of the boy Dev still remains uncertain, with claims both that he was adopted to an Indian couple, and that he has been traded for money.[168] Unless adopted, he would remain without legal status as citizen, but was also not considered an Australian citizen, as the parents did not apply for citizenship for him. Other similar stories abound in the media, all having in common how surrogate children which for various reason are not "picked up" by their intended parent, are left in a legal limbo, but are also heavily at risk because they have no-one to care for them, raise them and provide them with a safe home and family. In some cases, such as the one above, they are separated from siblings, also normally considered a serious violation of the best interests of the child. This lack of watertight legal institutions to ensure satisfying protection of the surrogate children from these grave violations of their basic welfare, might itself be reason enough to resist surrogacy.

168 *Politiken* (3 July, 2015), 10.

8. Prenatal Diagnosis (PND) and Preimplantation Genetic Diagnosis (PGD)

Prenatal diagnosis, like other interventions that might be applied during pregnancy, is only indirectly connected with the topics discussed in this guide. Moreover in the case of PND an intimate relation between mother and foetus (child) is in place. But the newer (and rapidly developing) technique of preimplantation genetic diagnosis frequently raises the same questions as prenatal diagnosis, and in some respects even takes its place. That is why we consider it proper to introduce briefly the problems of prenatal diagnosis before we focus on preimplantation genetic diagnosis, although a full discussion of the ethics of prenatal diagnosis and abortion is beyond the scope of this document.

8.1. Prenatal Diagnosis (PND)

8.1.1. Introduction

Prenatal diagnosis enables, among other things, the detection of morphological defects (for example brain or heart defects), genetic diseases, monogenetic disorders or chromosomal aberrations during pregnancy. There is no effective therapy for most of the diagnosed diseases or defects. Only a small proportion of the problems detected by PND can be solved by an early therapy or surgery (in utero or after delivery). For the majority, no therapies are available, which is why PND usually leads to discussions about the possibility of abortion.

8.1.2. Facts and figures

Various methods of PND are more or less widely used:

a) Ultrasound detection. This is the most widespread non-invasive method which enables to observe the image of the foetus its growth and its morphological development and its possible defects.

b) Maternal serum screening. This technique looks for biochemical markers in maternal blood which are statistically correlated with fetal chromosomal abnormalities. This technique can only indicate the risk that an abnormality is present; if it indicates a high risk of an abnormality, confirmation of the diagnosis will require an invasive technique such as chorionic villus sampling (CVS) or amniocentesis.

c) There is also a newer technique, non-invasive prenatal testing (NIPT), which also uses maternal blood, but in a quite different way. NIPT makes use of fragments of fetal DNA from the placenta, circulating in the mother's bloodstream, to analyse the fetal genome directly.[169]

d) Amniocentesis. This is the most commonly used invasive method indicated for pregnancies with higher risk of genetic disorders. It is usually applied when the non-invasive methods show an increased risk of genetic disorder, especially chromosomal disorders (for example trisomies such as Down's syndrome and Edwards' syndrome). In common with other invasive methods such as CVS and fetal blood sampling (percutaneous umbilical cord blood screening or PUBS), it involves some risk of miscarriage in consequence of the procedure. Older studies and information sources stated that the risk was around 1.0%, but recent studies have corrected this figure to show that the added procedure-related risk of miscarriage is 0.1 to 0.2%.170 The number of pregnancies judged at risk appears to be growing as the methods develop – as diagnostic techniques improve, more high-risk pregnancies are revealed. (There are, however, differing definitions of "high risk" ranging from 1:2 to 1:200 that the baby will have a disorder.) More than one in 100 pregnancies is found to be "at risk," in most cases at risk of a

169 See W. Dondorp et al., "Non-invasive prenatal testing for aneuploidy and beyond: challenges of responsible innovation in prenatal screening", *European Journal of Human Genetics, advance online publication* (2015), doi:10.1038/ejhg.2015.57.

170 R. Akolekar, J. Beta, C. Picciarelli, C. Ogilvie, F. d'Antonios. "Procedure-related risk of miscarriage following amniocentesis and chorionic villus sampling: a systematic review and meta-analysis", *Ultrasound Obstet Gynecol* 45 (2015): 16-26.

condition for which no therapy is available. And as no diagnostic procedure is perfectly accurate, a certain proportion of the predictions made by PND will be false. This is one thing that makes the promise of PND disputable. On the other hand an early diagnosis, showing that a possible problem is not present, can give considerable relief to some parents.

8.1.3. Legal Situation

In some European countries there is no special legislation concerning prenatal diagnosis in Europe, although the use of PND is closely connected with legislation on abortion. In German law, however, there is an explicit stipulation that PND may only be used for medical purposes.[171] In addition, the use of these methods is regulated by guidelines or instructions from competent bodies (such as physicians' professional associations).

One particular, and very controversial, aspect of the legal situation concerns so-called "wrongful birth" and "wrongful life" claims, which can arise not only in the context of PND, but also PGD and other reproductive medicine procedures. These are legal claims for damages against medical practitioners. A wrongful birth claim is brought by the parents of a child for damages suffered as a result of the birth of a child that they argue should have been prevented – for example, if a congenital disease or disability was not diagnosed in pregnancy and the parents argue that they would have chosen to terminate the pregnancy had the condition been diagnosed.[172] A wrongful life claim is brought by a disabled child him- or herself (though it may be made through his or her representatives, such as the parents), in respect of the harm of having to live a life filled with suffering.[173]

171 *Gendiagnostikgesetz* (2010), §15.

172 See, e.g., Nicolette M. Priaulx, "Damages for the 'Unwanted' Child: Time for a Rethink?", *Medico-Legal Journal* 73.4 (2005): 152-63, available online at https://www.medico-legalsociety.org.uk/articles/unwanted_child.pdf (accessed 17 January 2016); Rosalind English, "IVF Doctor not liable for failing to warn parents of genetic disorder in child – Australian Supreme Court", UK Human Rights Blog (21 May 2013), online at http://ukhumanrightsblog.com/2013/05/21/ivf-doctor-not-liable-for-failing-to-warn-parents-of-genetic-disorder-in-child-australian-supreme-court/ (accessed 17 January 2016).

173 See Ivo Giesen, "The Use and Influence of Comparative Law in 'Wrongful Life' Cases", *Utrecht Law Review* 8.2 (2012): 35-54, doi: 10.18352/ulr.194

8.1.4. Church Statements

Church statements are concerned about the fact that PND frequently leads to considering abortion, on which there are diverse Protestant positions ranging from "conservative" to "liberal". The ethics of abortion as such is beyond the remit of this Guide, although it is often emphasised in church statements that a commitment to life requires Christians to affirm the value of every human life and to deny that disability or disease diminishes the value of a human life.[174]

8.1.5. Discussion

Over recent decades a lengthy and wide-ranging discussion on the use of PND has developed in different countries. In cases where lives can be saved or helped due to early diagnosis of their defects or diseases, the use of PND is seen as positive and uncontroversial. However, as indicated above, the central problem discussed in connection with PND is abortion. When most of the genetic or other disorders that can be diagnosed by PND have no therapy, abortion is a possibility that is open and sometimes even recommended, and parents may feel some social pressure to accept it.

A proportion of the abortions that take place in European countries are performed to evade the birth of (severely) disabled children.[175] It is a widely agreed Christian point of view that human life should be protected, especially the life of the weak and vulnerable. One of the reasons abortion is problematic for Christians is that it means preventing or putting to death exactly such weak, vulnerable human lives. Some Christians reject this possibility absolutely. Others point to the fact that an abortion can be the lesser evil in case of a severe disability that would lead to prolonged suffering of both the child and the family. Neither position can evade dramatic and possibly tragic consequences, and perhaps full consensus as to which lives must be protected and which may be ended is impossible. Because PND

174 e.g. EKD, *Im Geist der Liebe mit dem Leben umgehen*.

175 The proportions vary in different European countries, but in some (such as Germany and the UK), only a small percentage of abortions are performed for this reason. In England and Wales in 2013, for example, only 1% of abortions were carried out on the grounds of 'substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be seriously handicapped.' Department of Health, Abortion Statistics: England and Wales, 2013, pp. 7, 12, online at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/319460/Abortion_Statistics__England_and_Wales_2013.pdf

raises these questions regularly and frequently, changing the experience of pregnancy and creating a different kind of relationship between parents (especially mother) and foetus, some ethicists conclude that it is really "a poor preparation for becoming a mother or father."[176] Legal arguments about wrongful birth and wrongful life claims, noted in section 8.1.3., raise these questions about the value of children's lives and the relationship between parents and children in a particularly sharp way. This is an area that calls for further consideration by our churches.

Another complex area of ethical debate concerns the proper handling of information about individuals' genotypes: who should have access to it, what privacy rights should exist and what should be the limits of privacy? For example, acquiring genetic information about harmful conditions might itself be harmful to those who will, or may, develop those conditions: is there a right not to know?[177] These issues also need further work by the churches.

8.2. Preimplantation Genetic Diagnosis (PGD)

8.2.1. Introduction

Preimplantation genetic diagnosis (PGD) is a method used in the process of assisted reproductive technology (IVF) to screen for genetic aberrations (monogenic disorders or chromosomal abnormalities). Monogenic disorders are conditions like Huntington's disease, polycystic kidney disease and cystic fibrosis, each of which is caused by an inherited defective gene. Chromosomal abnormalities, in which entire chromosomes or large parts of them are altered by deletion, duplication, insertion or otherwise, cause a number of syndromes, the best known of which are Down's syndrome and Edwards' syndrome. PGD helps to find out if any of these disorders are present in the genetic information of an embryo. It helps to select embryos that appear to offer the best chance of a successful pregnancy, and to prevent highly problematic pregnancies which might end in miscarriage or medically induced abortion. The PGD method came into use around 1990 and became widely used after 2000.

176 Gilbert Meilaender, *Bioethics: A Primer for Christians* (Grand Rapids, MI: Eerdmans, 1996), 54.

177 For discussions of a variety of these issues, see *Virtual Mentor: American Medical Association Journal of Ethics*, 11.9 (2009).

8.2.2. Facts and figures

The method uses genetic material from early embryos to perform a diagnosis (PGD) or a screening (PGS) of the genetic information of the embryo. PGD refers to the use of the technique to search for the presence of a specific monogenic disease or chromosomal disorder, while PGS refers to a more general screening process to check that embryos intended for use in fertility treatments are chromosomally normal. The technique is usually performed in one of two ways:

a) One cell can be taken from the embryo at the cleavage-stage (typically consisting of 8 cells at this time) on the third day and tested for the relevant genetic information. This method faces the problem of possible genetic mosaicism: different cells in the embryo may have genetic differences, so the genetic information of the diagnosed cell may be different from that of the embryo in the end.

b) At a later stage of development (day 5 post-fertilization) several cells are taken from the trophectoderm (part of the blastocyst that will later develop into placenta). This method does not touch the embryo and it reduces the influence of mosaicism (though it does not entirely exclude it). Its weak point is that it reduces the time for diagnosis (making difficult or impossible to repeat the diagnosis for confirmation) before the embryo is transferred to the woman.

Any surplus unaffected embryos can be cryopreserved and transferred in a later cycle.

A different application, preimplantation tissue typing (PTT), appeared with the case of so-called "saviour siblings." The parents of a child with a life-threatening disease (especially some types of leukaemia) might request IVF in order to conceive another genetically compatible child who can later be a tissue donor to the fatally ill sibling. In such cases embryos are sought which have a type of immune system (specifically, human leukocyte antigen or HLA) that match the HLA type of the ill older sibling. Stem cells of the younger "saviour sibling" will be obtained from umbilical cord blood or later from the child's bone marrow, and transplanted into the older ill sibling's bone marrow in an attempt to cure his or her disease. After initial rejection of this possibility on the grounds that it would mean instrumentalizing human life, it was gradually conceded in the UK and in some other European countries.

The PGD technique can also be used for sex discernment. This is widely accepted for medically indicated reasons, where genetic diseases are sex-linked and the possibility of having an affected child can be avoided by selecting embryos of the unaffected sex. Using PGD to select sex for non-medical reasons (sometimes advertised as "family balancing" by IVF clinics) is more controversial and is illegal in some jurisdictions.

8.2.3. Legal Situation

The possibilities for using PGD have developed only in recent years and the legislation is new. Overall, a small number of European states prohibit it, while a large majority (23 out of 27 EU member states in 2009) permit it.[178] An example of more conservative legislation is the German *Präimplantationsdiagnostikgesetz* (2011) which defines PGD as a criminal offence except where the genetic constitution of one or both parents indicates a high risk of a serious hereditary disease, or the test is done in order to detect serious damage to the embryo that would be likely to result in stillbirth or miscarriage.[179] On the other hand, the United Kingdom's Human Fertilization and Embryology Act (2008) serves as an example of a liberal approach. PGD is permitted in the UK for the purposes of testing for risk factors for genetic disease or disability, selecting "savior siblings", and sex selection for medical but not non-medical ("family balancing") reasons.[180]

Both British and German legislators are aware of the ambiguity of these technologies and include an obligatory genetic counseling at the beginning of each such process. Future parents should know the possibilities and limits of this method in order to be able to decide and accept responsibility for any future consequences of their decision.

A number of countries, particularly in Eastern Europe, do not yet have legal regulation of PGD.[181] In Norway, legislation introduced in 2006 permits

178 ESHRE, "Comparative Analysis of Medically Assisted Reproduction in the EU", 40.

179 *Präimplantationsdiagnostikgesetz* (2011), art. 1(2).

180 *Human Fertilisation and Embryology Act* (2008), Schedule 2, para. 3.

181 According to the Deutsches Referenzzentrum für Ethik in Biowissenschaften (www.drze.de) none of the former eastern bloc countries has specific legislation regulating PGD.

PGD in cases of severe inherited disease and for tissue typing to select "saviour siblings".[182]

8.2.4. Church Statements

The Roman Catholic Church rejects PGD along with all techniques connected with IVF, thereby avoiding a very complicated set of problems. Some Protestant churches offer careful analyses with no clear-cut solution. Examples of such documents are the EKD text of 2002, cited earlier,[183] and the Austrian Protestant churches' document *Verantwortung für das Leben* of 2001.[184] The German document practically rejects PGD, on the grounds that unlike IVF, it does not serve to support new life, but to select which lives are worth living. The Austrian document is more nuanced. It concurs with the German text in expressing reservations about selection, but rather than calling for legal restriction of PGD, it emphasises the need for the deepening and strengthening of personal responsibility on the part of those who are involved.[185]

In response to Norwegian proposals for the revised legislation noted above, the Church of Norway National Council and a number of Norwegian bishops issued statements which were generally opposed to PGD, and uniformly rejected PGD for tissue typing purposes. A frequently expressed concern in these statements, echoing Norwegian bioethical discourse more generally, is that over time the threshold for PGD might gradually decrease, moving towards "a so called society of exclusion, a society that destroys human embryos and foetuses simply because of minor disorders,

182 Ulla Schmidt, "Church, Public and Bioethics: Religion's Cosntruction of Public Significance through the bioethical discourse", in *The Public Significance of Religion*, ed. Leslie J. Francis and Hans-Georg Ziebertz (Empirical Studies in Theology 20, Leiden: Brill, 2011), 191-213, at 197.

183 *Im Geist der Liebe mit dem Leben umgehen*.

184 Verantwortung für das Leben. See also: Amt für Sozialethik, KDA und Ökologie der Evangelischen Kirche im Rheinland, *Menschenwürde von Anfang an: Zur theologischen Orientierung in der bioethischen Debatte*, (2005), 26f.; *Evangelische Kirche in Hessen und Nassau, Forschung an humanen Stammzellen: Eine Argumentationshilfe für die ethische Bewertung* (2004), p6ff.; Conference of European Churches, *Human Life in Our Hands? Churches and Bioethics: Results of a consultation organized by the CEC in Strasbourg* (2003), 1f.

185 Verantwortung für das Leben, para. 7.3.7.

and is increasingly unwelcoming and excluding toward persons with such disorders or disabilities."[186]

In a 2006 submission on the British Government's proposed revisions of the Human Fertilisation and Embryology Act, the Church of Scotland judges PGD "only to be acceptable in cases of exceptional severity. It should not be treated as a general option for all genetic disorders and diseases." The submission "on balance" rejects the use of PGD for tissue typing.[187] The British Methodist, Baptist and United Reformed Church report *Created in God's Image* expresses various concerns, for example that PGD might be associated with a tendency to see children as products of human choice rather than receiving them as God's gifts, and that it might encourage negative attitudes towards people with disabilities. However, it emphasises the pastoral complexity of the issues, and does not state hard-and-fast ethical conclusions.

On 15 June 2015 Switzerland held a referendum on reproductive medicine, relating to questions of the protection of embryos. In a statement the Federation of Protestant Churches in Switzerland argued that it supports PGD within tight limits for exceptional situations, but not as routine practice. Exceptional situations are agreed for parents with severe hereditary diseases. For them strict legal regulations should be established, but the legal protection of embryos should not be set aside.[188] On the same issue the Protestant-Methodist Church of Zürich issued a statement against PGD as an instrument of selection. This statement refers to the decision of the Annual Conference 2014 of the Protestant-Methodist Church refusing genetic technical measures, which lead to forms of eugenics and the production of redundant embryos.[189]

186 Schmidt, "Church, Public and Bioethics", 200.

187 Memorandum by the Church of Scotland, Church and Society Council (Ev97), in *Joint Committee on the Human Tissues and Embryos (Draft) Bill: Written Evidence* (HC 630-II, HL Paper 169-II, Session 2006-07). Online at http://www.publications.parliament.uk/pa/jt200607/jtselect/jtembryos/169/169we33.htm (accessed 11 January 2016).

188 Federation of Protestant Churches in Switzerland, Press Release 3.9.2015

189 Protestant-Methodist Church of Zürich, Press Release 10.04.2015

8.2.5. Discussion

The positive aspect of PGD is that its primary aim is to detect serious genetic disorders in embryos before pregnancy. In this way it can serve to reduce the number of pregnancies ending in spontaneous or medically induced abortions. It enables the couples where one or both partners carry a genetic disorder to opt for IVF, and to find an embryo that would be unaffected by the condition or where the genetic risk would be considerably reduced. In this way it helps parents who could hardly have a healthy child in a natural way.

However, some serious ethical questions arise with this technique. First of all, the cells used for PGD at the cleavage-stage are totipotent cells – a new human being could theoretically develop from it. Destroying the cell for the sake of diagnosis can be deemed as destroying a potential human person. It can be seen as violating the principle of the protection of human life. Also, the present state of medical knowledge enables us to diagnose a long list of genetic disorders but offers no cure for most of them. This means that in practice, PGD serves almost exclusively as a form of negative selection. Its effect is not to help a threatened new life, but to select one life and reject others. Destroying the rejected embryos is considered by many to be morally equivalent to abortion.

Moreover, the argument that PGD serves first of all to prevent abortion is opposed by pointing to the widening range of purposes for which it is used. This could in part be a product of an important difference between PND and PGD, already noted in the chapter introduction: in the case of PND there is an intimate relation between mother and foetus, and questions which arise about PND are inevitably questions of a conflict about an already-existing pregnancy. PGD, on the other hand, is a laboratory technology in which the embryo is distanced from the context of such a relationship. The practice of PGD could as a consequence tend to encourage or reinforce more instrumental attitudes towards future children. The above mentioned case of "saviour siblings" could be seen as an example of this danger, and raises doubts about whether bearing a child with the aim of using his or her tissue for another person can be morally justified. To what extent does the fact of a purposive selection of the future child influence the interpersonal relationships in the family?[190]

190 See Habermas, *The Future of Human Nature*.

These critiques are to be taken very seriously. We have to admit that PGD is shifting the original aim of IVF – helping couples with fertility problems – towards controlling and selecting the children of the future. It is to be feared that this selection could lead to a gradual change in attitudes towards persons with genetic disorders and disabilities. On the other hand selection takes place in the natural process of fertilization and only a minority of fertilized eggs become foetuses. Once we have taken the responsibility for fertilization in the form of IVF we should not waive the responsibility for selecting those embryos which are likely to have the best prospects of future life.

The burning issue is the criteria for selection. Apart from the uncertainty in regard to the future development of each life, do we have criteria for deciding which life is worth living?

It is important to consider the possible influence of the use of PGD on the public view of hereditary diseases and disorders. Negative eugenics that is connected with new biomedical therapies and especially with PGD could reduce the tolerance and acceptance of "abnormalities." Are we able to resist a possible growing control or selection of "who has the right to live"? Can we find the dividing line between responsibility for life and control of it? Also, does PGD encourage some people to attempt a pregnancy who would not otherwise consider risking it? Might it in this way considerably increase the number of genetically problematic pregnancies? Who should be eligible to apply for PGD? An even more serious problem is that PGD is, legally or illegally, used for non-medical reasons, such as the "family balancing" widely advertised on the World Wide Web. To choose the sex of the future child can be seen as the first step to a more wide-ranging and ambitious genetic selection of future persons (sometimes discussed under the heading of "enhancement"). Are we able to resist the temptation to try and create children to meet particular specifications?

This brings us to the closing consideration. Can we develop criteria that would justify the use of PGD? Can we keep this method to the purpose of preventing fatal genetic diseases and disorders and helping to reduce the number of unfortunate pregnancies? Are we able to give priority to the best interest of the future child over the parents' alleged "right to have a child" – and can such "best interest" be specified? In short, are we able to bear the responsibility for the new situations created by PGD?

Our experience shows clearly that once a new technology develops it may be difficult to stop it. If so, we as Christians might have to learn to live with

PGD. In some very specific situations, *in extremis*, it can be a blessing. But our present social situation is significant by offering the freedom of choice and a growing push to "standardization." In the case of the fertilization process it can have the unfortunate influence of objectifying it, decreasing the reverence for new life, reducing the autonomy of future children and leaving us with our freedom of choice less free in the end.

However, the threats connected with the use of PGD are not inherent in the technology. They are present in our relationship to life, our ambitions and desires. We do not see a possibility of a universal position concerning PGD. The attitudes of different societies, persons and even churches may be different. Nevertheless, we believe that the demands of justice and responsibility require a very cautious approach towards PGD. One possibility would be to say that PGD should be used exclusively in the best interest of the future child (even if this interest may be not to be born) and not to fulfil the desires or wishes of other persons. By this line of reasoning, the use of PGD to select for diseases incompatible with life (i.e. diseases which usually lead to miscarriage, stillbirth or to the child dying within a couple of weeks or months after birth) could probably be justified, while the use of PGD to create a "saviour sibling" would be unacceptable. Sex selection for "family balancing" reasons could also be ruled out using this line of argument.

Another approach, which avoids the difficult question of whether it might ever be in the best interest of somebody not to be born, would be to restrict the use of PGD to cases where there is a high probability of miscarriage, stillbirth or death shortly after birth, not because of concerns about the child's welfare, but in order to protect the pregnant woman and the family as a whole from the painful experience of losing a child before his life has really begun. Of course, this argument is not without its problems, either (it might seem to imply that PGD may be used to spare the parents and the family all kinds of suffering). In practice, both lines of reasoning will probably go together anyway. There seems to be a consensus on the view that PGD should be a tool for exceptional situations and should not be used "routinely". Still, it is important to note that there are different strategies for justifying the use of PGD, and that opting for one or the other strategy might well have consequences for other areas of bioethical debate.

9. Research and novel therapies

9.1. Introduction

The development of reproductive technologies like IVF has always relied on embryological research to gain the necessary understanding of the processes of fertilisation and embryonic development. For that reason, legislation concerning IVF has from the outset also had to deal with the question of human embryo research. As the field has developed, new areas of research have opened up. These include genetic modification, the cloning of human embryos, the production of embryonic stem cells and the creation of inter-species hybrid embryos incorporating both human and non-human genetic material.

Much of this research is motivated by the search for new therapies for genetic and developmental disorders and other severe or life-threatening conditions. So, for example, stem cell research and some work on inter-species hybrids may have the goal of discovering stem cell therapies for degenerative conditions like Parkinson's disease. Techniques for the genetic modification of embryos create the possibility of not only diagnosing genetic diseases before implantation (as discussed in ch. 8), but also treating those diseases with genetic changes which will also be inherited by future generations (germ-line genetic modifications). One of the most recent developments is the possibility of mitochondrial replacement therapies for genetic diseases affecting mitochondrial rather than nuclear DNA.

These developments raise once again some ethical issues that have already arisen in other parts of this guide, such as the moral status of the human embryo. However, they also raise less familiar questions, for example about the ethical implications of crossing a species boundary in creating human-animal hybrid embryos. At times, both secular and religious commentators

have struggled to find the best ways of addressing these new problems. In this guide, we do not attempt to settle all these questions definitively, but to offer helpful ways for CPCE member churches to address them in their own contexts.

9.2. Facts and figures

9.2.1. Embryo research

As already noted, embryo research has been going on for a long time, and the development of IVF in the 1960s and 70s involved laboratory research using human embryos. Human embryo research has grown and developed alongside the development of IVF and other reproductive technologies. To give an example from one country, in July 2015 there were 20 human embryo research projects in progress in the UK with licences from the regulatory authority, the Human Fertilisation and Embryology Authority (HFEA). Research topics included egg cell and embryo development, the causes of infertility and the improvement of techniques for IVF and other reproductive technologies, as well as other areas covered in this chapter like the improvement of techniques for obtaining embryonic stem cells and for PGD.[191]

9.2.2. Embryonic stem cells

Stem cells are relatively unspecialised cells with the potential to differentiate into more specialised cell types. For example, stem cells in the bone marrow can generate all the various types of blood cell. Some of the cells found in embryos have the unusual property of being *pluripotent*: that is, they can differentiate into any of the cell types found in the body.[192] Growing and studying pluripotent stem cells in the laboratory can contribute to the understanding of how cells differentiate and specialise. They can be used to generate specialised cells as heart or nerve cells in vitro without having to extract tissue from patients. These laboratory-grown cells can be used to

191 Details of research projects licensed or awaiting approval are published on the HFEA website at http://www.hfea.gov.uk/166.html (accessed 17 July 2015).

192 Very early in the embryo's development, its cells are in fact totipotent, which means they can differentiate into all the cell types in the body and those of the placenta. Totipotency only lasts for a couple of cell divisions after fertilisation.

investigate disease processes affecting the corresponding tissues and organs in the body and to test potential therapies. Researchers also hope to develop therapies in which pluripotent stem cells can be used to generate specialised cells for transplantation to replace those lost due to disease or injury. For example, clinical trials are either planned or in progress for human embryonic stem cell (hESC)-based therapies to repair spinal cord injuries and to treat the eye disease age-related macular degeneration. There is a long list of other conditions, including Alzheimer's disease, Parkinson's disease, multiple sclerosis, heart disease, stroke and diabetes, which are talked about as possible targets for future therapies based on pluripotent stem cells.[193] However, in many cases these possibilities are a long way off, and formidable technical challenges would have to be overcome to make them succeed.

The main ethical problem (to be discussed further below) is that obtaining hESCs means destroying the embryos from which they are taken. Until recently there was no realistic alternative source of pluripotent stem cells, since the various types of stem cells found in adult tissues such as bone marrow are not pluripotent – they can only generate a relatively small range of specialised cell types. However, in recent years researchers have found ways of "reprogramming" specialised adult cells to become pluripotent. It is hoped that these induced pluripotent stem cells (iPSCs) could in future be usable for many of the same applications as hESCs. However, the two are not identical, and iPSC research is still in its early days. Because of this, stem cell researchers tend to insist that hESC research is still needed for the foreseeable future.[194]

9.2.3. Therapeutic cloning

In the 1990s, researchers first succeeded in cloning an adult mammal – generating a genetically (almost) identical copy of the original animal – using a technique called somatic cell nuclear transfer (SCNT). The first clone to be born alive was a sheep that the researchers named Dolly. In the nuclear transfer technique, the nucleus (which contains almost all the cell's DNA) is removed from an egg cell. A cell is taken from any part of the body of the individual to be cloned, for example the skin. The nucleus is extracted

193 Information on the current situation and future prospects for stem cell therapies can be found at http://www.eurostemcell.org/stem-cell-factsheets (accessed 17 July 2015).

194 See http://www.eurostemcell.org/faq/could-same-research-be-done-other-types-stem-cells (accessed 17 July 2015).

from that cell and introduced into the egg cell whose own nucleus has been removed. If that egg cell is then subjected to the right conditions, it will behave as if it has been fertilised, and will begin the process of embryonic development. Because almost all of the DNA in the egg cell is derived from the individual to be cloned, the resulting embryo will be genetically almost identical to that individual – not the donor of the egg. It is not *completely* identical, because a very small number of genes in human cells (37 out of approximately 25,000) are found not in the nucleus but in structures known as mitochondria, whose chief function in the cell is energy metabolism. In SCNT, the egg cell retains its original mitochondria. Therefore the nuclear genes in the resulting embryo are derived from the individual being cloned, but the mitochondrial genes come from the donor of the egg.

The use of this technique to bring a clone to birth (reproductive cloning) will be discussed in chapter 10, but the same technique can be used for a variety of research and potentially treatment purposes, sometimes collectively referred to as "therapeutic cloning." Most often, therapeutic cloning combines nuclear transfer with the stem cell techniques described earlier, so the resulting embryo is used to obtain embryonic stem cells that are genetically matched to the person from whom the transferred nucleus was taken. These may be useful for research purposes: for example, if the person has a genetic disease, the cells could be studied in the laboratory to gain a greater understanding of the disease mechanisms and test potential therapies. It is possible in future that therapeutic cloning could be used to generate stem cell-based therapies genetically matched to the patient from whom the genetic material was taken, which should reduce the risk of immune rejection when the cells were transplanted back into the patient's body.

9.2.4. Mitochondrial replacement

Mitochondrial replacement therapies are one very recent development of the nuclear transfer technique. Mutations in the mitochondrial genes can cause severe, and at present incurable, inherited diseases. When a child is conceived, all the mitochondria in the zygote are derived from the egg, so women who are carriers of mitochondrial genetic diseases are at risk of passing these on to their children. Mitochondrial replacement therapies avoid this risk by using a donated egg from a third party with healthy mitochondria. The donor egg's nucleus is removed and replaced with a nucleus from the intending mother, either before or after in vitro fertilisation with

the intending father's sperm. Laboratory studies have shown promise, and at the time of writing the first live birth from a mitochondrial replacement procedure has recently been reported.[195] One feature of mitochondrial replacement that has attracted some controversy is that it would result in children with three genetic parents – the father, the woman whose egg nucleus was used and the donor of the egg cell with healthy mitochondria – although only a very small proportion of the child's genetic information would be derived from the donated mitochondria.

9.2.5. Human-animal hybrid embryos (human admixed embryos)

It is possible to construct various kinds of embryo in the laboratory which contain genetic material from more than one species – for example, embryos containing both human and non-human genes. These are known as "hybrids," "inter-species embryos," or in current UK legislation, "human admixed embryos." Various kinds of human admixed embryo are known. A *chimaera* is made by transplanting embryonic cells from one species into an embryo of a different species (non-human cells into a human embryo or *vice versa*), so that the embryo is a mixture of cells from the two species. A *transgenic* embryo is one that has been genetically modified by introducing one or more genes from a different species into its DNA. A *cytoplasmic hybrid* or *cybrid* is made using the nuclear transfer cloning technique described above: a non-human egg cell has its nucleus removed and replaced with a human cell nucleus, resulting in a cloned embryo most of whose genes are human, but with non-human mitochondrial genes derived from the egg cell. (In principle it could be done the other way around, with a human egg and non-human nucleus, but in practice most of the interest is in using non-human eggs and human nuclei.) Finally, a *true hybrid* is made by combining gametes from different species: fertilising a human egg with non-human sperm or *vice versa*. The possible reasons for making such constructs vary. In many cases, the main motivation would be to gain a better scientific understanding of genetics, gene regulation, embryonic development and

195 See "UMDF Position & Clinical Status of Mitochondrial Replacement Therapy to Prevent Transmission of mtDNA Diseases", online at http://www.umdf.org/site/c.8qKOJ0MvF7LUG/b.9166823/k.2E25/Mitochondrial_Replacement_Therapy.htm#Studies and Jessica Hamzelou, "Exclusive: World's First Baby Born with New '3-parent' Technique", *New Scientist* (27 September 2016), online at https://www.newscientist.com/article/2107219-exclusive-worlds-first-baby-born-with-new-3-parent-technique/ (both accessed 14 October 2016).

so forth, including an understanding of genetic and other diseases and possible therapeutic approaches. In recent years cybrids have been of interest for a more specific reason. The stem cell and therapeutic cloning research described above relies on donated egg cells, which are in limited supply because of the difficulties and burdens associated with egg donation. One way of overcoming this limitation would be to use egg cells obtained from non-human mammals, to produce cloned embryos and stem cells that were genetically mostly human.

9.2.6. Genome editing

Techniques for modifying DNA sequences in the genomes of various organisms have been available since the end of the 1970s, and the genetic modification of bacteria, plants and animals has become a familiar feature of biomedical research, biotechnology, agriculture and other fields. Human gene therapies targeting genetic defects in somatic cells and tissues (those that do not play a direct part in sexual reproduction) have been actively pursued by researchers since the early 1990s, but with only very modest success to date. It has been generally agreed that these techniques were too imprecise, unreliable and uncertain in their outcomes to justify attempts to modify human germline cells and tissues (sperm, eggs and the cells and tissues that generate them). Whereas somatic cell modifications would affect only the individuals to whom the changes were made, germline modifications would have the aim of being inherited by future generations, so their consequences could be much further-reaching and harder to predict than somatic cell modifications.

However, since the early 2010s the situation has been changed dramatically by the development of much more powerful and precise techniques for "genome editing": making precisely targeted changes to specific sequences of DNA at desired locations in the genome. At the time of writing, the most powerful, versatile and (relatively) inexpensive of these is known as the CRISPR/Cas9 system.[196] Genome editing has an enormous range of potential

196 The technique works by synthesising a "guide RNA", i.e. a short sequence of ribonucleic acid (RNA) complementary to the target DNA sequence, and attaching it to a protein called Cas9. This is a kind of enzyme known as an endonuclease, whose function is to cut DNA molecules. The guide RNA ensures that the cuts in the DNA sequence are made at the target location. For a recent overview of the science of genome editing and some of the ethical issues it raises, see Nuffield Council on Bioethics, *Genome Editing: An Ethical Review* (London:

applications in humans and other species – and perhaps unsurprisingly, has already become the subject of high-profile patent disputes. In humans it could have many potential applications in understanding disease processes better and designing new drug therapies. It could also make somatic cell gene therapy a more powerful and widely applicable approach. More controversially, it seems to bring the prospect of germline genetic modification significantly closer.

9.3. Legal situation

The UK is well known for having one of the most liberal legal regimes in Europe with respect to these areas of work. The 2008 *Human Fertilisation and Embryology Act*, an update of the original 1990 Act, permits research on human embryos up to 14 days after fertilisation for certain specified purposes.[197] These include increasing knowledge about serious or congenital diseases and their treatments, improving infertility treatments and contraceptive techniques, developing methods for PGD, and increasing knowledge about embryonic development. Embryos may be created for research purposes, or spare embryos from IVF treatment may be donated for research. Human admixed embryos may also be created for research purposes and grown up to 14 days post-fertilisation. Neither human embryos used for research nor human admixed embryos may be implanted in a woman's (or animal's) womb. All human and human admixed embryo research requires a licence from the regulatory authority (the HFEA). The Act allows for regulations to be introduced governing specific areas, and in 2015 regulations permitting the development of mitochondrial replacement therapies were approved by the UK Parliament.[198]

The UK is unusual in permitting embryos to be created for research purposes. A number of other EU member states permit research up to the

Nuffield Council, 2016), online at http://nuffieldbioethics.org/report/genome-editing-ethical-review/genome-editing/ (accessed 30 September 2016).

197 The text of the Act is available at http://www.hfea.gov.uk/134.html (accessed 17 July 2015).

198 *The Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015*, online at http://www.legislation.gov.uk/uksi/2015/572/contents/made (accessed 8 September 2015).

14-day limit on surplus embryos no longer suitable to be implanted, but prohibit the creation of embryos specifically for research.[199]

Some EU member states have no specific legislation on human embryo research. Austria and Italy prohibit it altogether.[200] Also at the more restrictive end of the scale, but stopping short of an absolute prohibition, is German law, including the Embryo Protection Act (*Embryonenschutzgesetz*, 1991, amended 2011) and the Stem Cell Act (*Stammzellgesetz*, 2002). German law prohibits the creation of embryos for research purposes, the use of embryos in medical research or for the production of stem cells, and therapeutic cloning. Embryonic stem cell lines created outside Germany may be imported for strictly regulated purposes, provided the cell lines were created before 1 May 2007.

9.4. Church statements

The Church of Scotland's 2006 parliamentary submission, cited earlier,[201] comments on most of the topics covered in this chapter. It cautiously accepts embryo research on what is described as a "No, unless…" basis, i.e. research should only be permitted case-by-case provided strict conditions are met (serious need, no practicable alternatives, etc.). In practice, this means the church supports the UK regulatory regime in force since 1990. The creation of embryos for research is opposed "except into serious diseases and only under exceptional circumstances". Therapeutic cloning and the use of embryonic stem cells are supported "under very exceptional circumstances", though the Government is urged to support research into alternatives such as adult stem cells. Research on inter-species (human admixed) embryos is expressely opposed, and the submission expresses concern about the slippage that has occurred in UK policy on this question. The submission opposes germline genetic intervention, not only for safety reasons, but also on the ethical grounds that it imposes irrevocable genetic changes on future individuals who cannot consent, and that it would give rise to pressure for human enhancement and eugenic projects. Serious reservations are expressed about mitochondrial replacement because it is a form of germline intervention, albeit "less associated with individual characteristics".

199 Busardo et al., "The Evolution of Legislation", 10.

200 Ibid.

201 Memorandum by the Church of Scotland, Church and Society Council.

The Church of Norway formerly rejected research on embryos altogether, especially as discussed in connection with stem cell research. However, in its consultative statement to the amended biotechnology act (2006), the Church of Norway National Council reluctantly accepts research on embryos, provided the objective of the research is to improve and develop IVF technologies. The argument is that this objective would be consistent with treating the embryo as an end in itself (as it would be an end in which the embryo would participate), whereas research for other purposes (such as stem cell research) would merely treat the embryo only as a means, being external to the embryo.[202]

9.5. Discussion

The activities described in this chapter raise familiar questions acknowledged by everyone, such as safety, efficacy and the balance of costs, risks and benefits. Questions about resources, distributive justice and economic interests should also not be forgotten. The research and innovative therapies described in this chapter are costly, and in the foreseeable future seem likely to benefit those in the wealthier nations of the world much more than the nations of the global south. Also, major economic interests are involved in this work, because the biotech and pharmaceutical industries are a large and highly profitable sector of many western economies, and (not surprisingly) are often among the powerful voices calling for liberal rather than restrictive regulatory regimes.[203]

In addition to these concerns, various fundamental ethical questions are raised by these areas of work, and in this section four in particular will be considered.

9.5.1. The status of the embryo and the ethics of embryo research

Any research that involves the destruction of human embryos, including stem cell research, raises the question about the moral status of the embryo discussed in section 3.5. The creation of human admixed embryos also raises

202 See further Schmidt, "Church, Public and Bioethics", 198.

203 See, e.g., *Joint Committee on the Human Tissues and Embryos (Draft) Bill: Written Evidence.*

this issue, although (as we have seen) much of the concern about this area of research has focused on the *ambiguity* about whether these constructs are human or not. Finally, mitochondrial replacement therapies raise the issue about the status of the embryo insofar as the development of these therapeutic techniques requires human embryo research.

The now-familiar arguments about the status of the embryo have developed and become more widely known as the development of reproductive technologies in recent decades has made it necessary to address ethical questions about human embryo research. For example, these arguments gained a new prominence in Britain in the 1980s thanks to the Warnock Report, which paved the way for the successive Human Fertilisation and Embryology Acts in the UK.[204]

The gradualist view outlined earlier (section 3.3.) makes human embryo research, and the collection of embryonic stem cells for research or therapy, easy to justify. On this view, the human embryo may be accorded some value because of its potential to become a human person, but it is not yet a person and therefore lacks the inviolable status that persons have. Although the Warnock Report declined to state a position on the moral status of the embryo, the gradualist view is the one that fits most easily with the 14-day limit for embryo research, originally proposed by Warnock and enshrined in UK legislation since 1990. Gradualist views of the status of the embryo are also supported (with various degrees of hesitancy) by some British church reports.[205] By contrast, both law and church positions in some other European countries demonstrate more reluctance to endorse a gradualist position, even if that reluctance falls short of an outright rejection.[206]

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204 *Report of the Committee of Inquiry into Human Fertilisation and Embryology (The Warnock Report)* (London: Her Majesty's Stationery Office, 1984).

205 Joint Public Issues Team, *Created in God's Image*, acknowledges disagreement on this question but presents the gradualist view as one held by some Christians, referencing the earlier Methodist report *Status of the Unborn Human* (1990), which endorses the gradualist position.

206 For example, the German *Embryonenschutzgesetz* (1991/2011) and *Stammzellgesetz* (2002), as noted earlier, enshrine a high level of protection for embryonic human life and set strict limits on the treatment of embryos; yet German law does not prohibit some practices (such as the use of nidation inhibitors) which appear inconsistent with the view that the early human embryo has full moral status. Likewise the joint statement of the EKD and the German Catholic Bishops' Conference, *Gott ist ein Freund des Lebens* (1989) rejects a gradualist position, but the more recent EKD document *Im Geist der Liebe mit dem Leben umgehen* (2002) sets out two positions, one of which appears much closer to a gradualist view.

In section 3.5., various Protestant positions on the moral status of the embryo were outlined, including the view that arguments about its status are ill-suited to settle questions about our moral obligations in respect of human embryos. For those readers of this guide who find the latter view persuasive, the central question might no longer be: "Is the human embryo a person?" but something more like, "What does it mean to act as a loving neighbour to those human lives we encounter?" The ethical imperative could be expressed, in terms influenced by Karl Barth's ethics of creation,[207] as the call to celebrate, respect and protect the human life which is God's gift – which we may encounter in human embryos as well as infertile couples or patients with serious diseases. If so, then ethical discernment regarding human embryo research will require us to explore what the respect and protection of God-given life requires in these difficult and painful circumstances.

This approach does not always rule out the taking of human life: there may be "boundary situations" (*Grenzfälle*) in which life can only be protected by taking life – as Barth argued in relation to abortion, for example.[208] Therefore this approach does not provide instant answers to ethical questions about embryo research, the use of embryonic stem cells and the other problems discussed in this section. Authors who have attempted to think in this kind of way about the human embryo have drawn differing practical conclusions about the ethics of embryo research.[209] However, it does place a burden of proof on those who wish to argue for procedures that will result in the destruction of embryonic human life. One way of putting this (as Nigel Biggar said of Barth's ethics) would be to say that to justify embryo research projects or uses of hESCs, we would have to show that they do not constitute exceptions to the command "You shall not kill," nor suspensions or violations of it, but unusual ways of keeping it.[210] At the least, this approach would suggest that alternatives to destructive research on embryos – such as the development of iPSCs as an alternative to hESCs – should be very much welcomed, and wherever such alternatives can be used they should be.

It is sometimes argued that either the moral status of human embryos, or our ethical obligations in respect of them, are affected by the context of

207 Cf. Barth, *Church Dogmatics*, vol. III/4, §55.

208 Ibid., 415-23.

209 Compare Messer, *Respecting Life*, ch. 4, with Waters, "Does the Human Embryo Have a Moral Status?"

210 Cf. Nigel Biggar, *The Hastening that Waits: Karl Barth's Ethics* (Oxford: Clarendon Press, 1993).

fertility treatment or research. For example, it may be argued that an embryo created for the purpose of research has no prospect of a future life in any case, so destroying it will not deprive an individual of a life that it would otherwise have had. Or again, it may be argued that a spare embryo from IVF, which will in any case be allowed to die, is better used for research so that its death is not wasted. But if we try parallel thought-experiments involving human individuals after birth – for example, the argument that it would be less morally problematic to kill human babies if they had been bred purely for research purposes, or that terminally ill patients could legitimately have all their vital organs removed under anaesthetic for research purposes in advance of their natural demise – we are likely to respond in a very different way. This suggests that such arguments in favour of embryo research presuppose precisely what is contested in these debates, that human embryos have a different moral status, conferring different rights and obligations, from human individuals at later stages in their development.

9.5.2. Species boundaries and human dignity

When legislation allowing the creation of human admixed embryos has been debated, some of the same arguments about the moral status of the human embryo have entered into the discussion. But there has been great perplexity about whether these constructs actually *are* human, and if they are, in what sense. Some quite clearly are. It is difficult to think of a transgenic embryo as anything other than a genetically modified human embryo: it seems highly implausible that the insertion of a small number of genes from another source into its genome would change its species identity. Cybrids too would be genetically almost entirely human, since the only genetic material from a non-human source would be the mitochondrial DNA. It is not clear whether the presence of non-human mitochondrial genes would affect the viability of cybrid cells, or whether the genes in the human nucleus would be function differently in any way if placed in the cytoplasmic environment of a non-human egg cell. There could then be a little more ambiguity about the species identity of cybrids than transgenic embryos. In any event, chimaeras and true hybrids would be genuinely ambiguous in their species identity.

The main question at issue in ethical debates about this work has been: by making constructs with such ambiguous species identity, is the boundary between humans and other species eroded, and does this in some way undermine human dignity? Some ethicists are likely to be dismissive of this

concern on the grounds that "dignity is a useless concept" in bioethics.[211] However, even among those who are more willing to entertain the concept of human dignity, very different understandings of it can be found, based on very different philosophical presuppositions. Some voices in debates about admixed embryos have put forward a view rather similar to "checklist" approaches to determining the moral status of the embryo (section 3.5.). On this view, humans have dignity because they possess certain abilities or characteristics. If human-animal hybrids have similar abilities or characteristics, they will possess a similar kind of dignity; if not, they will not.[212] Set against this view is one more influenced by the tradition of Aristotle and Thomas Aquinas. The philosopher and theologian David Jones, for example, has argued that humans are a particular kind of animal with characteristic ways of flourishing. The construction of hybrids is an offence against the dignity of this kind of life, in that it fails to respect the character of human procreation, undermines human solidarity, and (in some cases at least) creates profound perplexity about whether the hybrid creatures are human and how they should be treated.[213] With such different accounts, informed by such deep underlying philosophical differences, arguments about human dignity might prove to have limited use in settling ethical arguments about the creation of human admixed embryos.

Two biblically-motivated concerns can be found in some Protestant responses to the prospect of human admixed embryos.[214] One picks up the foregoing discussion about the importance of the species boundary for human dignity, and asserts that the distinctive dignity and importance of humankind in God's purposes depends on humans' being different from other species. This claim is often associated with Genesis 1:26-28, in which human beings are created in the image of God and given dominion over other creatures. On this view, the *imago dei* is understood as something distinctive about the human species which places us in a distinctive relationship with God, sets us apart from other creatures and gives us a higher status than those creatures. Crossing or blurring the species boundary is seen as undermining this human difference and compromising the status and importance which

211 Ruth Macklin, "Dignity is a Useless Concept", *British Medical Journal*, 327 (2003): 1419.

212 See Academy of Medical Sciences, *Inter-species Embryo*s (London: Academy of Medical Sciences, 2007), 29, for an example of this view.

213 David Albert Jones, "Is the Creation of Admixed Embryos 'an Offense against Human Dignity'?" *Human Reproduction and Genetic Ethics*, 16.1 (2010): 87-114.

214 See Messer, *Respecting Life*, ch. 4, and references therein.

go with it. The second concern is that by making artificial hybrid creatures, which do not conform to the species found in nature, we would be going against God's good creative purposes. Genesis 1 tells how God created living things "according to their kinds" (v. 11 *et passim*); by creating hybrid embryos we would be transgressing the structures and boundaries that God has given in creation, and perhaps performing the "mixing of kinds" that the biblical Holiness Code prohibits (e.g. Lev. 19:19).

Regarding the first of these concerns, it has been easy for Protestants in modern times to think that human dignity and the distinctive status of humankind depend on our difference from other species. We have felt it important to assert that we are rational, civilised creatures, unlike the "brute beasts." Much of the unease in nineteenth-century reactions to Darwin's evolutionary theory was caused by the fact that it seemed to erode the distinctions between humans and "beasts." Yet recent scholarship has suggested that this strong emphasis on the difference between humans and animals may be a peculiarly modern view, developed in the wake of the Enlightenment, and it may not fully reflect the perspective of the historical Christian tradition.[215] Furthermore, biblical and theological research on the *imago dei* has tended to challenge the view that it should be understood as a distinctive property or capacity of the human species, which sets us apart from other creatures. It is better understood as a distinctive relationship to God, or a distinctive function or vocation conferred on us by God, or perhaps some combination of the two.[216] If the *imago dei* is understood in terms of function or calling, this may indeed in a sense set humans apart from other creatures, giving us a certain kind of authority over them and responsibility to God for them, but this authority and responsibility should be understood as divine gift, not dependent on our possession of some unique ability or characteristic.

This does not of course mean we should deny all difference between humans and other species, but it does suggest that modern Christians may have tended to over-emphasise what separates us from other creatures, and ignore what we have in common. It also suggests that if human admixed

215 See, for example, Celia Deane-Drummond and David Clough, eds., *Creaturely Theology: On God, Humans, and Other Animals* (London: SCM, 2009).

216 See, e.g., J. Richard Middleton, *The Liberating Image: The imago Dei in Genesis 1* (Grand Rapids, MI: Brazos, 2005) and Nathan MacDonald, T*he Imago Dei and Election: Reading Genesis 1:26-28 and Old Testament Scholarship with Karl Barth, International Journal of Systematic Theology*, 10.3 (2008): 303-27.

embryos do blur the species distinctions between humans and other animals, that may be less threatening to human dignity than many Christians believe.

The second concern noted above is that by creating human admixed embryos, we are transgressing boundaries given in creation, subverting the divine creative purpose expressed in the Genesis 1 narrative in which living things were created by God "according to their kinds." Of course, in the light of earlier comments about the use of the Bible (section 3.1.), texts like Genesis 1 or the ban on mixing kinds in Lev. 19:19 cannot simply be read as proof-texts prohibiting hybrid embryo research. However, texts like these might inform a theological account of creation which understands the existence and diversity of living species as a reflection of the good purposes of the Creator. This theological understanding might at any rate raise the question: If we blur species boundaries by constructing hybrid embryos, are we resisting or subverting this divine creative purpose?[217]

This line of argument gives a theological reason to be wary of research activity which treats species boundaries as unimportant or fails to respect the diversity and distinctive identities of different species. However, it does not by itself give a conclusive reason for refusing all hybrid embryo research, unless one also makes a strong claim about the extent to which God's will is reflected in the range and identity of species that we observe empirically in the world today.

If arguments about human distinctiveness and species identity do not conclusively settle the ethical question of human admixed embryo research, a more promising approach for a theological assessment might be to examine its moral character, aims and motivations – not just the explicit motivations and character of individual researchers, but those implicit in the nature of the practice itself. For example, we might ask whether such research reflects the distinctively human vocation to make something of the world and exercise responsibility for it before God (cf. Gen. 2:15). Or does it express a desire for mastery over the material world (including the matter of our own bodies) which distorts that vocation? The research might very well be motivated by compassion for the sick and the desire to develop new therapies; but is that compassion undermined by a tendency to instrumentalise the hybrid

217 For a critique along these lines, see Calum MacKellar, *Chimeras, Hybrids and 'Cybrids'*, CMF File no. 34 (London: Christian Medical Fellowship, 2007), online at http://www.cmf.org.uk/publications/content.asp?context=article&id=1939 (accessed 27 July 2015).

embryos made for the purposes of the research?[218] Such questions will not supply a short-cut to an ethical conclusion about human admixed embryos, but may prove fruitful for member churches seeking to develop their own theological and ethical positions.

9.5.3. The problem of three genetic parents

Aside from concerns about safety and efficacy, the main concern about mitochondrial replacement therapies is that for the first time, they create a situation where a child can have three genetic parents. Other techniques like surrogacy and gamete donation (see sections 6 and 7) can also give rise to children with three *biological* parents: for example, a heterosexual couple who conceive using a donated egg will have a child whose biological parents are the father, the egg donor and the gestational mother. But in these cases the child is still the offspring of only two parents' *genetic* legacy. In mitochondrial replacement, there is a third source of the child's genetic inheritance, the donor of the egg cell which supplies the healthy mitochondria.

If one takes the Catholic magisterial view that the procreative and unitive goods of sex must not be separated, then the mitochondrial replacement therapies described above will be ruled out on the same grounds as most reproductive technologies. (Note, though, that the objection is not to therapeutic activity as such, but because it entails other practices that Catholic teaching rejects, such as the breaking of the link between sex and procreation, and the destruction of human embryonic life.) If one does not take that view, but nonetheless attaches importance to procreation being the fruit of a relationship between two parents,[219] then a technique which generates children with three genetic parents will still be highly problematic. However, if one's main concern is with the psychosocial consequences for children of mixing up parenthood, then mitochondrial replacement therapies will probably cause less anxiety than gamete donation or surrogacy, since the biological involvement of the third party is limited to contributing a small amount of genetic material (37 mitochondrial genes) for a specific therapeutic purpose.

218 For an analysis along these lines, resulting in a rather negative assessment of human admixed embryo research, see Messer, *Respecting Life*, ch. 4.

219 Cf. Oliver O'Donovan, *Begotten or Made? Human Procreation and Medical Technique* (Oxford: Oxford University Press, 1984)

9.5.4. Modifying the human genome

Two basic distinctions should be made when ethically evaluating modificiations to the human genome. One, already mentioned (section 9.2.6), is between somatic cell modifications, which are not passed on to the individual's offspring, and germline modifications, which may be. The other, which is more contested, is between therapy and enhancement: between modifications aiming at the treatment (or prevention) of disease, and those intended to enhance human capacities or abilities above their normal range. Many bioethicists, such as John Harris, deny that the therapy/enhancement distinction is coherent or ethically significant, though Christian bioethicists more often wish to defend both its coherence and its significance.[220]

Techniques for modifying human genetic material have been available for some decades, and their ethical discussion by both secular and Christian thinkers has a correspondingly long history. Therefore the ethics of human genetic (including germline) modification is a familiar topic in the bioethical literature. However, until recently it was generally assumed that human germline genetic modification would not be a reality for a long time to come, if ever. That assumption has at times lent a rather speculative character and an air of unreality to ethical discussions of it in the literature. As noted above (section 9.2.6), that state of affairs has changed with the development of technologies like CRISPR/Cas9. It is timely, therefore, for Christian churches to take these developments seriously as areas of current concern that call for careful deliberation and response.

The most obvious ethical issues are concerned with safety, efficacy, and the balance of intended benefits against the risks of harmful consequences. Partly on these grounds, some researchers and commentators have called for a moratorium on research into the use of genome editing techniques to modify human germlines,[221] though others like John Harris vigorously oppose such a moratorium.[222] Another widely acknowledged area of concern

220 For a critique of the therapy/enhancement distinction see John Harris, *Enhancing Evolution: The Ethical Case for Making Better People* (Princeton, NJ: Princeton University Press, 2007), chs. 2, 3. For a theological defence of it, see Neil Messer, *Flourishing: Health, Disease and Bioethics in Theological Perspective* (Grand Rapids, MI: Eerdmans, 2013), Conclusion.

221 See Edward Lanphier et al., "Don't Edit the Human Germ Line", *Nature* 519.7544 (2015): 410-11, and David Baltimore et al., "A Prudent Path Forward for Genomic Engineering and Germline Gene Modification", *Science* 348.6230 (2015): 36-38.

222 John Harris, "Why Human Gene Editing Must Not Be Stopped", *The Guardian* (2 December 2015). Online at http://www.theguardian.com/science/2015/dec/02/why-human-

has to do with use of resources and distributive justice: who will have access to the fruits of this technology, and how fairly will its benefits be shared? Is there a danger that it will become yet another area of biomedical research and clinical practice focused disproportionately on the diseases of the rich? Could the resources used for these developments bring greater benefit, and more benefit to those most in need, if they were directed elsewhere? Beyond these concerns, are there fundamental theological ethical issues that Christians and churches should consider in assessing human genome editing?[223]

In terms of the two distinctions made earlier, Christian reflection tends to consider somatic cell modifications less problematic than changes to the germline, and gene therapy less problematic than genetic enhancement. Subject to the normal concerns about safety, efficacy and fair access to the benefits, somatic cell gene therapy enjoys wide support among Christian commentators. Germline therapy is regarded with more caution, partly for the reasons of safety, efficacy and concerns about unintended consequences already mentioned. (In this connection, mitochondrial replacement therapy is also sometimes regarded with suspicion, on the grounds that its acceptance in law and regulation might open the door to germline therapy.) For some, a further concern is that the development of germline therapy would most likely require research on human embryos. Leaving aside concerns like these, fewer Christians find cause for concern in germline therapy in and of itself.[224]

Some, however, still do. For example, the Catholic bioethicist David Jones argues in a way that some Protestants would also find persuasive, that germline "therapy" should be properly regarded not as therapy, but as an attempt to prevent some future individuals coming into being (those with genetic diseases or disabilities) and ensuring that others do instead.[225]

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gene-editing-must-not-be-stopped (accessed 10 January 2016).

223 For a range of Christian theological analyses of human germline genetic modification, see Corinna Delkeskamp-Hayes and Neil Messer, eds., *Christian Bioethics* 18.2 (2012).

224 Even the Catholic magisterial document *Dignitas Personae* (para. 26), which takes a cautious line about many questions in human genetics and embryology, rules out germline therapy "in its current state" only on the grounds of its risks and because it would require IVF, not because of fundamental objections to the attempt to correct defects in the germline per se.

225 David Albert Jones, "Germ-line Genetic Engineering: A Critical Look at Magisterial Catholic Teaching", *Christian Bioethics* 18.2 (2012): 126-44. This line of reasoning refers to what is sometimes called the "identity problem", made famous by Derek Parfit, *Reasons and Persons* (Oxford: Clarendon, 1984).

Regardless of whether this attempt succeeds or not, Jones argues, it is properly described as "playing God", and expresses a eugenic impulse of the sort that has in the past led to terrible abuses.[226] A theological response to this objection might draw on the account of love, justice, freedom and responsibility developed earlier (section 3.2.) to argue that humans are called to take responsibility in all kinds of ways for the genetic health and identity of their children, and question whether germline "therapy" is any different in principle from other ways of taking this responsibility.

Many Christians see genetic enhancement – of somatic cells or especially the germline – as more problematic than therapy. One reason for this is that many enhancement projects, particularly when they take the more grandiose forms of "transhumanism" or "posthumanism", seem to express a basic dissatisfaction with human creaturely existence as such. A theologically-informed understanding of the human condition can of course freely acknowledge that there is a great deal wrong with human nature as we experience it in the everyday world – including those diseases and disorders that are the targets of genetic therapy – but still affirm that in the most fundamental way, it is good to be this kind of being, the creature of a good and loving Creator. The transhumanist project of enhancing human nature to the point where we have transformed our species into another kind of being altogether seems to be a denial of that basic Christian affirmation about the goodness of creation.[227] A lively awareness of human sinfulness is another reason for Christian scepticism about the more ambitious projects of human enhancement: any intervention (therapy or enhancement) designed to change human nature will depend implicitly or explicitly on assumptions about what it is good for humans to be like. We have no grounds for confidence that these assumptions will not be misled by all kinds of prejudice, partiality, self-interest and other distortions, which Christian theology will name as sin. The more ambitious the intervention, and the less it is limited by specific therapeutic goals, the greater the danger of such a distorted vision of the human good being acted out in seriously unjust forms of practice, such as the eugenic tendencies against which David Jones warns. A question of intergenerational justice is also sometimes raised about germline modifications in general. The human genome, it is argued, is part of the common patrimony of humanity, and attempting to control

226 A similar objection, of course, would also apply to any attempt to select embryos for implantation in IVF – which Jones, from his Catholic perspective, would certainly object to.

227 Cf. Harris, *Enhancing Evolution*.

the genetic inheritance of future generations is an act of injustice to those generations. It may deprive them of parts of that patrimony, compromise their "right to an open future", or even imperil the freedom and autonomy that are needed for participation in the moral community.[228]

However, not all enhancement projects have the grandiose aims of transhumanism, and it is often argued that in many areas of life, such as parenting and education, it is a normal part of our human responsibility to maximize (or "enhance"?) our own and others' capacities. Moreover, this might be seen as including a proper human responsibility for the genetic inheritance we hand on to future generations. It might be said that long before the advent of genetic modification technologies, humans were exercising this responsibility through quotidian choices about marriage, family life and procreation. Accordingly, some Protestant and other Christians conclude that the theological concerns outlined here are reasons for caution and prudent moral discernment in relation to any particular enhancement project, rather than the outright rejection of genetic enhancement *per se*.[229]

9.6. Conclusion

Human embryo research and novel therapies raise various ethical concerns above and beyond the consequentialist questions, which almost everyone acknowledges, about risk, harm, and benefit. Four of those further concerns have been discussed in this section: our moral obligations concerning embryonic human life, the moral implications of crossing or blurring species boundaries, the moral questions raised by the new situation of children with three genetic parents, and the issues raised by modifying the genetic inheritance of future generations. Such concerns are apt to be marginalised or dismissed in public debates about law and policy in some European contexts. However, in this section we have argued that they must be taken seriously, and have suggested some ways that Protestants might approach them. One task for CPCE member churches might very well be to ensure that these concerns are treated with proper seriousness in situations where they might otherwise be ignored.

228 Cf. Habermas, *The Future of Human Nature*.

229 See e.g. Brent Waters, "Christian Ethics and Human Germ Line Genetic Modification", *Christian Bioethics* 18.2 (2012): 171-86.

We have also recognised, but not analysed in any depth, the questions about resources, distributive justice and economic interests noted at the beginning of this section. Protestant churches, for which social justice and a concern for the poor and powerless are deeply-rooted commitments, should certainly attach importance to these questions. This could be an area that calls for further work by CPCE and its member churches.

10. Reproductive cloning and reproduction by means of artificial gametes

10.1. Introduction

What the reproductive technologies discussed so far have in common is that they attempt to remove or compensate for impairments of natural reproductivity. They can also be used to help homosexual couples and single women or men to have a child. That involves resorting to donated gametes, biologically using the same method as for natural reproduction. The children conceived this way might grow up in unusual family constellations, but like all other people they stem from a woman and a man, and so besides their social parents, they still have a genetic mother and a genetic father.[230] This basic link of reproduction to a natural ability to reproduce could (at least theoretically) be called into question in future by two technologies that have in some cases already been successfully tried with animals: reproductive cloning and reproduction with the help of artificial gametes, i.e. those gained from stem cells. Even if the use of these technologies with humans is rejected by most scientists or is not up for discussion because they have not yet been developed fully enough to be used, it is still worth briefly going into this matter at the end of this statement, in order to identify possible future challenges raised by reproductive medicine.

230 As noted in chapter 9, mitochondrial replacement therapy has begun to push this boundary, by creating the possibility that a child may – in a very limited sense – have three genetic parents.

10.2. Facts and figures

The procedure of somatic cell nuclear transfer (SCNT), which can be used not only for therapeutic cloning, but for reproductive cloning as well, was described in the preceding section. Since the birth of the cloned sheep Dolly in 1996, numerous types of mammals, including mice, pigs, dogs and horses, have been cloned by means of SCNT.[231] The success rate was very low with most of them; very few clones make it to the blastocyst stage, even fewer to birth, and many of the latter are malformed. Attempts to clone non-human primates have failed so far; similar problems are anticipated for human beings. However, the reproductive cloning of human beings is not on the agenda for serious scientists.[232]

While reproductive cloning is a well-known procedure by now, reproduction by means of artificial gametes is still very much in the experimental stage, even in animals. The term "artificial gametes" is used in the literature to refer to mature germ cells (sperm and eggs) generated in vitro by specification and maturation of their natural diploid precursors, the primordial germ cells (PGCs), or by directed differentiation of pluripotent cells (embryonic stem cells or induced pluripotent stem cells) to the germ-cell lineage.[233] In view of the possible use in the context of assisted reproduction, it is mainly of interest to produce gametes from induced pluripotent stem cells (iPSCs) because this can offer women or men who are unable to form viable gametes the option of having their own genetic children too. Egg cells derived from iPSCs in animal testing have already been successfully fertilised and even

231 For an overview see Jose C. Cibelli et al., *Principles of Cloning* (2nd edition. Amsterdam/ Waltham, MA: (Academic Press, 2013).

232 Occasional media claims that human pregnancies have resulted, or will soon result, from cloning are greeted with great scepticism by experts in the field. See, e.g., Steve Connor, "Fertility Expert: 'I Can Clone a Human Being'", *The Independent* (21 April 2009). Online at http://www.independent.co.uk/news/science/fertility-expert-i-can-clone-a-human-being-1672095.html (accessed 12 January 2016).

233 Immaculada Moreno et al., "Artificial Gametes from Stem Cells", *Clinical and Experimental Reproductive Medicine* 42 (2015): 33-44. DOI: 10.5653/cerm.2015.42.2.33. See also Saskia Hendriks et al., "Artificial gametes: a systematic review of biological progress towards clinical application", *Human Reproduction Update* 21 (2015): 285-296. DOI: 10.1093/humupd/dmv001, and Charles A. Easley et al., "Gamete Derivation from Embryonic Stem Cells, Induced Pluripotent Stem Cells or Somatic Cell Nuclear Transfer-Derived Embryonic Stem Cells: State of the Art", *Reproduction, Fertility and Development* 27 (2015): 89-92. DOI: 10.1071/RD14317.

led to viable offspring.[234] If it were to be possible in future to obtain female gametes from male stem cells and vice versa, that would again considerably extend the use of the procedure with human beings. Stem-cell based gametes could then also be used to help homosexual couples to have genetic children of their own. Even reproduction without a partner would not be ruled out. The production of gametes from stem cells of the opposite sex is linked to considerable technical difficulties but, according to experience to date with the stem cells of mice, it is possible in principle.[235]

10.3. Legal situation

Reproductive cloning is rejected almost unanimously the world over. In 2001 Germany and France tried to push a worldwide ban through the UN, but after several years of negotiation this attempt ultimately failed. No agreement could be achieved on whether the ban was to cover cloning for research purposes or not. In Europe reproductive cloning is inter alia prohibited by an additional protocol to the Bioethics Convention of the Council of Europe, to which almost all major European countries have acceded.[236] The production and use of artificial gametes is still largely unregulated. In Britain their production and use is admissible for research purposes but banned for purposes of reproduction.[237]

10.4. Church statements

To the extent that churches have taken a line on reproductive cloning this has always been critical.[238] To date there have been hardly any church

234 See Katsuhiko Hayashi et al.: "Offspring from Oocytes Derived from in Vitro Primordial Germ Cell-like Cells in Mice", *Science* (2012), 971-975. DOI: 10.1126/science.1226889; Orie Hikabe et al.: "Reconstitution in Vitro of the Entire Cycle of the Mouse Female Germ Line", *Nature* 539 (2016): 299-303.

235 That applies at least to the derivation of female gametes from male stem cells. See Alexandre Kerkis et al., "In Vitro Differentiation of Male Mouse Embryonic Stem Cells into Both Presumptive Sperm Cells and Oocytes", *Cloning and Stem Cells* 9 (2007): 535-548. DOI: 10.1089/clo.2007.0031.

236 One exception is Germany, which has still not signed the Bioethics Conention. At the national level, however, there is likewise a ban on cloning.

237 http://www.hfea.gov.uk/in-vitro-derived-gametes.html.

238 See, e.g. EKD, *Im Geist der Liebe mit dem Leben umgehen*, 31f.; European Ecumenical Commission for Church and Society (EECCS), *Cloning Animals and Humans – an Ethical*

statements on reproduction with the aid of artificial gametes, though in a 2006 response to a public consultation on revision of human embryology legislation, the Church of Scotland expressed serious concerns about artificial gametes and supported a legal ban on research in this area.[239]

10.5. Discussion

In the general medical ethical debate two different types of objection are raised with respect to reproductive cloning and reproduction with the aid of artificial gametes: first, critics see a danger of malformation and other medical risks and, second,there are worries about consequences for the self-understanding and identity-building of children produced or conceived in that way, about changes in our understanding of reproduction, family relations and genealogy, and about the motives behind the use of such techniques. The second category of objections is particularly interesting from the anthropological angle.

With reproductive cloning the question first arises as to what it means for a person to be the genetic copy of another person or to have an older twin who physically demonstrates what one's own future could look like. One of the topics of discussion in this context is whether reproductive cloning does not infringe the right of the child to an open future. Of course, critics point out that the importance of the genome is overestimated and the role of epigenetic factors is underestimated. Nevertheless, it can hardly be denied that growing up as a young twin to another person represents a potential burden for someone – all the more if this person functions as his/her social mother or father, or (in the case of a woman) even carries the cloned embryo to term. These cases are not just about the relationship of identity and diversity, original image and copy, topics found in the medical ethics debate but also in literary and artistic adaptations of the theme. They are also about the merging of the role of parents and siblings and thus the more

View (2006), online at http://csc.ceceurope.org/fileadmin/filer/csc/Ethics_Biotechnology/cloning-print.htm (accessed 8 September 2015); Church of Scotland, "Cloning Animals and Humans", *Supplementary Reports to the Church of Scotland General Assembly*, (May 1997).

239 Church of Scotland, Church and Society Council and Society Religion and Technology Project, *Response to the Public Consultation on the Review of the Human Fertilisation & Embryology Act*, online at http://www.srtp.org.uk/srtp/view_article/response_to_the_review_of_human_embryology_act (accessed 11 January 2016).

general question about the significance of parenthood.[240] A second question concerns the motives for producing a clone. Can we imagine any situation in which cloning a human being is the answer to a legitimate desire? Given that the peculiar feature of reproduction by cloning is the (near) genetic identity between the clone and the individual cloned, the first motive one might think of is the desire to "double" or "replace" another person. It seems quite obvious, though, that such a blunt refusal to accept the finitude of life and the finality of death is deeply problematic in theological terms. Another possible motive for cloning a human being (in that case, for cloning oneself) could be the much more mundane desire to have a genetically related child.[241] Again, however, there are serious concerns about this motive. As indicated in chapter 4, one might well wonder whether genetic relatedness is not overrated in the context of reproductive medicine. A more specific worry would be about the particular form the desire for a genetically related child takes in the case of cloning. In cases of normal reproduction, the idea of genetic relatedness typically figures in a characteristically twofold way: People do not just want a child that is genetically related to themselves, but a child that is genetically related to their partner as well; they want to become parents *together*. One might well ask whether openness towards the contribution of another parent (even if only on the genetic level) is not a precondition for the legitimacy of the desire itself, especially from the point of view of a theological anthropology that stresses the essentially relational character of human existence. In sum then, it seems safe to judge that the cloning of human beings for reproductive purposes is a fundamentally misguided enterprise, quite apart from the medical risks it entails.

Something that is even more interesting, but also more difficult to judge, is reproduction by means of artificial gametes. As long as the body cells required for the production of female and male gametes (via iPSCs) come from a woman and man of reproductive age, respectively, the technology might seem to be an obvious extension of the established range of reproductive medical measures that already includes methods such as testicular sperm extraction. As indicated above, female gametes might, however, possibly also be derived from male stem cells and male gametes might possibly be derived from female stem cells. In that case, children could be conceived

240 Cf. Onora O'Neill, *Autonomy and Trust in Bioethics* (Cambridge: Cambridge University Press, 2008), 67-68.

241 This is the kind of application that John Harris, in his defence of reproductive cloning, seems to have in mind; cf. John Harris, *On Cloning* (London, New York: Routledge, 2004), especially 31-33.

and born whose genetic parents are both female or are both male, or who have only one single genetic parent.That would break the boundaries of what is biologically possible in the area of reproduction in an unprecedented manner. If we step back a moment from the medical risks, the key challenge of reproduction by means of artificial gametes is that they question the norm of heterosexual parenthood not just socially, but also biologically. The ethical and anthropological questions in this context are so fundamental and have been reflected on so little from a theological standpoint that no appraisal will be attempted here. If the churches in Europe want to keep up a competent role in the discussion of reproductive medicine they will have to concern themselves with this currently still futuristic sounding technology and the new possibilities it opens up. Besides the relationship of reproductive autonomy and the good of the child, the questions discussed in section 3.3. and 7.5. about the normative relevance of the "natural" and the value to be attached to "natural" family structures and relationships will probably prove to be the key issues.

11. Conclusions, recommendations, and open questions

As noted in the Introduction, the title of this guide suggests one reason why the ethical issues raised by modern reproductive medicine may seem so complex, perplexing and troubling: this area of practice offers unprecedented power and control over human beings' personal origins and identities, power that in earlier times might have been presumed to be in God's hands alone. The guide is offered to the member churches of CPCE to resource and equip them in addressing these perplexing issues, as they arise in member churches' own contexts. This concluding chapter highlights main conclusions, makes recommendations, and identifies some outstanding questions and areas requiring further work.

11.1. Principal conclusions and recommendations to CPCE member churches

As repeatedly noted in the text, some of the topics addressed by this guide raise issues that are controversial in both church and society, on which there is not a complete consensus among Protestants. Therefore the guide does not in every case recommend a single answer to each question: sometimes instead it defines a "corridor" of Protestant approaches and views. Therefore, while some of the conclusions and recommendations summarised in this section do suggest definite answers, others go no further than setting the limits of the Protestant "corridor". Member churches are invited to use conclusions of the latter sort to guide their further deliberation on these difficult questions in their own contexts.

The following list of conclusions includes some indications and suggestions for how the guide might be used by member churches, in both their pastoral and public responsibilities in relation to the ethics of reproductive medicine.

11.1.1. Being guided by Scripture in ethical discernment about reproductive medicine is not simply a matter of reading moral norms off biblical texts, but requires careful hermeneutical work by Christians and churches. No single pattern of family life or procreation is unambiguously commended by Scripture. We learn from the New Testament that in the light of the Gospel, biological kinship and procreation are no longer to be given *ultimate* significance; but parenthood and family life may still be seen as *penultimate* forms of Christian vocation.

11.1.2. Protestant ethical reflection on reproductive medicine should be guided by a theological-ethical framework of love, justice, freedom and responsibility.

11.1.3. One highly contested issue, in play in many of the practical questions discussed in the guide, is the ontological and moral status of embryonic human life. Section 3.5. of the guide maps the contours of Protestant debate and ongoing disagreement on this question, and is offered to member churches to inform their further deliberation on practical issues such as embryo research and the use of surplus embryos from IVF.

11.1.4. CPCE member churches are called to address a range of different and overlapping audiences in their ethical reflections on reproductive medicine. The guide distinguishes between the churches' "pastoral" responsibilities (such as giving moral guidance and pastoral care to church members confronted personally by the dilemmas of reproductive medicine) and "public" responsibilities (such as contributing to public debates about law, policy and practice in their own countries). To be equipped for these pastoral and public tasks, member churches will need to engage in their own reflection and formulate their own policies on the issues addressed here, and the guide is offered as a resource to assist such work.

11.1.5. This is a field in which, for various reasons, it is particularly important that all church members are enabled to understand and reflect on the ethical issues for themselves. Member churches may therefore wish to use this guide as a resource in the preparation of study materials to support such learning and reflection among their members.

11.1.6. A Protestant ethic of love, justice, freedom and responsibility will not reject in vitro fertilisation (IVF), either because of concerns about its risks and harms or for more fundamental reasons such as its technological character. IVF may be seen as a way of taking responsibility in a spirit of love in order to address people's legitimate needs, aspirations and longings. But pragmatic and fundamental concerns do give grounds for caution and restraint in its use. In particular, Protestants should resist the tendency to see it as a convenient solution to problems that are essentially social and political.

11.1.7. Cryopreservation (the freezing of gametes or embryos) does not raise major ethical issues in itself, though there are certain concerns associated with it. One is that it could encourage an overly instrumental view of human life. Another is so-called "social freezing": the use of cryopreservation along with IVF to address problems that are essentially social, political or economic, such as pressures to delay parenthood until later in life for career development reasons.

11.1.8. Gamete (egg and sperm) donation need not be rejected, though more attention should be paid to its risks and potential harms, including the health risks associated with egg donation, the psychological impact on recipient couples and the welfare and rights of children conceived using donated gametes. Because children have the right to know who their parents are, the mixing of sperm from several donors should be prohibited. Gametes should not be bought or sold, and financial incentives for "egg sharing" by women going through IVF are also ethically questionable.

11.1.9. Embryo donation for procreative purposes may be ethically justified. However, because children have the right to know who their parents are, the mixing of embryos from several donors in a single implantation cycle should be prohibited.

11.1.10. Protestants have good reasons to reject surrogacy, particularly (but not only) commercial surrogacy.

11.1.11. The range of Protestant positions on the moral status of human embryos will result in a range of conclusions about the moral acceptability of pre-implantation genetic diagnosis (PGD), since PGD frequently results in embryos being discarded or destroyed. Even if it is accepted, its use should be restricted to the most serious of situations. Sex selection for "family balancing" and tissue typing to produce "saviour siblings" should be ruled out.

11.1.12. The range of positions on the status of the embryo gives rise to a range of Protestant views on the legitimacy of human embryo research. However, even the more permissive of these would regard embryo research as a morally weighty matter, not to be undertaken lightly. This generates a strong presumption in favour of developing and using alternatives (such as induced pluripotent stem cells) wherever possible.

11.1.13. In Protestant perspective, there are no fundamental ethical objections to either somatic cell or germ line human gene therapy – though there are practical reasons to proceed much more cautiously with the latter. Protestants should be much more suspicious of genetic enhancements, either somatic cell or germ-line. In particular there are good reasons to resist highly ambitious "transhumanist" agendas. More modest proposals for human enhancements, which do not share these grandiose ambitions, might not be rejected *tout court*, but may instead require ethical discernment case by case.

11.1.14. Human reproductive cloning should be categorically rejected.

11.2. Suggestions for further work

From the discussion presented in this guide, a number of topics and issues emerge that require further work, for various reasons: in some cases because they are newly emerging areas of science and clinical practice to which the churches have had little opportunity to respond, in others because Protestant reflection has tended to neglect or downplay them in the past. The following are some of the most significant, which CPCE or its member churches may wish to take up in some way in future.

11.2.1. *The moral significance of nature and the natural* has sometimes been neglected by Protestant ethics in the past. It has obvious importance for a wide range of current issues in biomedical, ecological and other areas of ethics.

11.2.2. It would be valuable for the churches to reflect further on *the ethics of the professions*, including particular questions such as the possibilities and limits of conscientious objection. Such reflection would, among other things, equip the churches to support those of their members who have challenging professional roles and responsibilities.

11.2.3. An important issue underlying several of the practical questions discussed in this guide is how *health, disease and disability* should be

understood theologically, and how that understanding should inform the churches' practice.

11.2.4. A growing area of ethical concern is *the technological enhancement of human capacities* (whether by genetic, pharmacological, electronic or other means). The ethics of enhancement includes – but is not limited to – grandiose speculations about "transhuman" and "posthuman" futures, which cry out for an informed theological analysis and critique.

11.2.5. More generally, it is essential for the churches to *keep informed about new scientific and clinical developments* in reproductive medicine (such as the examples discussed in chapters 9 and 10 of the guide), so that they may be proactive rather than merely reactive in formulating theological, ethical and pastoral responses.

Glossary and list of abbreviations

The glossary has been restricted to scientific and medical terms and abbreviations used in the text whose meanings may not be widely known or understood. Other terms and abbreviations are explained in the text.

Amniocentesis: a technique used in prenatal diagnosis (PND). A sample of the amniotic fluid, which contains foetal cells, is taken, and can be used in various ways for genetic testing.

ART: assisted reproductive technology.

Blastocyst: the stage of embryonic development that begins about 5 days after fertilisation in humans. The blastocyst consists of the inner cell mass, which will go on to form the embryo, and the trophoblast, which will form the placenta.

Chimaera: *see* Human admixed embryo.

Chromosome: a structure found in the nuclei of human (as well as other animal and plant) cells, composed of DNA (deoxyribonucleic acid) and various specialised proteins. A single chromosome may contain hundreds or thousands of gene sequences, together with DNA sequences involved in various ways in regulating the expression of genes.

Cloning: making a genetic copy (a clone) of another individual.

CRISPr/Cas9: a recently developed method of genome editing.

Cryopreservation: preserving gametes, ovarian tissue or embryos by deep freezing.

CVS: chorionic villus sampling, a technique for obtaining foetal genetic material for use in prenatal diagnosis. A small sample of tissue is taken from that part of the placenta derived from the trophoblast, which shares the foetus' rather than the mother's genotype.

Cybrid: cytoplasmic hybrid; *see* Human admixed embryo.

Embryo: a human individual in the first eight weeks following fertilisation. The term "pre-embryo" is sometimes used to refer to an embryo in the early stages of development before implantation in the uterus, but this usage is controversial and not universally adopted.

Endometriosis: disease in which the endometrium (the tissue that normally lines the uterus) grows outside the uterus, e.g. in the ovaries or fallopian tubes. It can cause pain and fertility problems.

Foetus: a developing human individual between 9 weeks post-fertilisation and birth.

Follicle: in the ovary, a sac-like structure containing a developing ovum (egg cell).

Gamete: a sex cell (egg or sperm).

Genotype: the sum total of an individual's genetic characteristics.

Germ cell: *see* Gamete.

HLA: human leukocyte antigen.

hESC: human embryonic stem cell. *See* Stem cell.

Heterologous: *see* IVF.

Homologous: *see* IVF.

Human admixed embryo: term used in UK legislation for an embryo containing both human and non-human genetic material. Forms of human admixed embryo include: *chimaeras*, made by mixing human and non-human embryonic cells; *cytoplasmic hybrids* (*cybrids*), where the SCNT technique is used to insert a human nucleus into a non-human egg cell or *vice versa*; *transgenic embryos*, in which a relatively small amount of non-human genetic material has been introduced into a human embryo or vice

versa; *true hybrids*, where a non-human egg is fertilised with human sperm or *vice versa*.

Hybrid embryo: *see* Human admixed embryo.

ICSI: intra-cytoplasmic sperm injection, a reproductive technology in which a sperm cell is injected directly into an egg cell in the laboratory.

iPSC: induced pluripotent stem cell. *See* Stem cell.

IVF: in vitro fertilisation, a reproductive technology in which egg and sperm cells are mixed together in the laboratory ("in glass", or *in vitro*). The aim is for sperm to fertilise the eggs, which can then be implanted in the intending mother's womb. IVF is sometimes described as "homologous" if the gametes are derived from the partners of a couple who intend to be the child's social parents, and "heterologous" if sperm, eggs or embryos are derived from donors other than the social parent(s).

Mitochondria (sing. Mitochondrion): Organelles (sub-cellular structures) found within animal and plant cells, concerned with energy metabolism.

Monogenic (of genetic disorders): caused by a mutation (change) in a single gene.

NIPT: non-invasive prenatal testing.

Oocyte: egg cell.

Ovary: the female gonad (sex organ) that produces egg cells.

PGC: primordial germ cell.

PGD: pre-implantation genetic diagnosis; testing an IVF embryo genetically for particular characteristics (such as sex, or particular inherited disease markers) before it is implanted in the womb.

PND: pre-natal genetic diagnosis; genetic testing of a foetus during pregnancy. It involves obtaining a sample of foetal genetic material by a method such as chorionic villus sampling, non-invasive prenatal testing or amniocentesis, in order to test that material for characteristics of interest such as sex or particular disease markers.

Pre-embryo: *see* Embryo.

PUBS: percutaneous umbilical cord blood screening.

Reproductive cloning: *see* Cloning.

SCNT: somatic cell nuclear transfer, the most widely used technique for mammalian cloning.

Stem cell: a relatively unspecialised cell with the potential to give rise to one or more specialised cell types. Stem cells may be *monopotent* (able to give rise to only one cell type), *multipotent* (able to give rise to a number of cell types), *pluripotent* (able to give rise to all the cell types found in the body) or *totipotent* (able to give rise to all the cell types in the body plus those in the placenta). Stem cells derived from human embryos (human embryonic stem cells, or hESCs) are pluripotent. In recent years it has become possible to turn cells taken from the adult body back into pluripotent stem cells with similar properties to hESCs: these are known as induced pluripotent stem cells or iPSCs.

Surrogacy: an arrangement whereby one woman gestates and bears a child on behalf of another.

Therapeutic cloning: *see* Cloning.

Transgenic embryo: *see* Human admixed embryo.

Trophectoderm: alternative term for trophoblast; *see* Blastocyst.

True hybrid: *see* Human admixed embryo.

Uterus: womb.

Zygote: the single-celled stage of embryonic development immediately following fertilisation.

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