

Appendix A

The Anglican Church on Bio-ethical Issues

The Anglican Communion and the Anglican Church of Canada rarely make formal statements that may be described as “the official position of the Anglican Church” on ethical and doctrinal issues. Nevertheless, various conversations, statements, and resources may help us to understand the mind of Anglicans, both local and global, on a wide range of bio-ethical issues that they have engaged in order to think about them with clarity and integrity. The statements below are a sampling of what Anglicans have been saying about bioethics, genetic technology and faith.

I. What have we been saying?

The Anglican Communion has dealt with issues related to human life and bioethics since at least the 1930s. The Lambeth Conference of 1938 for example declared its “abhorrence of the sinful practice of abortion.” The statement marked where the mind of the church was at that point in time. It did not end further reflection and debate on the subject. Technological developments since then have made questions about the beginning and end of human life more complex.

The 1978 Lambeth Conference acknowledged its awareness of these changes and called for studies that “emphasize the sacredness of all human life, the moral issues inherent in clinical abortion, and the possible implications of genetic engineering.”

More recently, the Archbishop of Canterbury, Rowan Williams, has made some comments on the issue of the treatment of human embryos in scientific research. Archbishop Williams says:

[Christians] have many profound questions about the status of the human embryo and the proper ethical framework within which scientific research takes place...science in itself is never going to be able to tell us what the right thing is for us to do--it can tell us only what's possible.

And, despite the way some people talk in this debate, there really is a difference between what is possible, and what is right.

The Anglican Church of Canada has also made statements opposing the misuse of “excess embryos” created as a result of IVF procedures. Creating embryos solely for the purposes of experimentation, the Church observed, is “morally repugnant” because it treats the unborn as an “object for adult consumption.”

Genetically modified organisms and foods, too, have been the subject of discussion in the ACC since the late 1980s, citing concerns about inadequate testing and the economic injustice suffered by local and international farmers.

II. What are our theological resources?

When we discuss issues of faith and genetics, a key question emerges: "What does it mean to be made in the image of God?" Not only are there decisions to be made about the nature and content of human life, but also about what role image-bearing creatures take in and toward the rest of creation. Are we "wreaking havoc with the order of creation" by manipulating genetic and developmental processes? Are we concerned about bringing "the year of Jubilee" to the rest of the created order?

Many Anglicans are convinced that the "image" we bear has its source in the Triune God and that, at its roots, human vocation has to do with reminding the created order of its fullest joy, namely worshiping God in spirit and in truth. This faithful God became incarnate in Jesus Christ to liberate Creation from sin. The incarnation of the Word encourages us to be self-reflective about appropriate use of genetic technologies and other scientific developments.

(Thanks to Rob Walker for researching and drafting the appendix)

Appendix B

Positions of the Christian Reformed Church (CRC) on Genetic Technologies and other Relevant Topics of Biotechnology and Bioethics

Compiled by James J. Rusthoven, representative for the CRC, Biotechnology Reference Group, Canadian Council of Churches

Obtained from the website of the CRC regarding its beliefs and positions on life issues.

Stated Positions of the Christian Reformed Church Regarding Ethical and Theological Issues in Bioscience and Genetic Engineering

Introduction

Over time, the Christian Reformed Church has stated its position on a variety of contemporary topics. The following is a summary of the denomination's doctrinal and ethical positions as stated over the years by synod regarding bioscience and genetic engineering.

This précis offers accurate and concise descriptions of the positions of the CRC. For full reports and exact statements of the denomination's position on a particular issue, the reader should look to the references provided. The material has been updated through the decisions of Synod 2011.

General Statement on Relating Synodical Decisions to the Church Confessions

Synod 1973 appointed the Committee on Synodical Decisions and the Confessions. Its mandate involved two tasks: (1) to compile materials for a publication containing pertinent synodical decisions on doctrinal and ethical matters and (2) to present a clear statement as to how such synodical decisions are related to the confessions. Synod 1975 subsequently approved the original version of the material in this section and adopted the following recommendations of the study committee regarding the relationship of synodical decisions to the confessions:

- 1) The Reformed Confessions are subordinate to Scripture, are accepted as a true interpretation of this Word, and are binding on all office bearers and confessing members of the church.
- 2) Synodical pronouncements on doctrinal and ethical matters are subordinate to the confessions and are "considered settled and binding, unless it is proved that

they conflict with the Word of God or the Church Order" (Art. 29). All office bearers and members are expected to abide by these decisions.

- 3) The confessions and synodical pronouncements differ in their extent of jurisdiction, in their nature of authority, in their distinction of purposes, in the measure of agreement expected, and in their use and function.
- 4) The use and function of the synodical decisions (i.e., interpretation of the confessions, pronouncements beyond the confessions, adjudication of a particular issue, testimony, guidelines for further study or action, or pastoral advice) are explicitly or implicitly indicated by the wording of the particular decision itself.

For the full report of the 1975 committee and synod's response to it, see Acts of Synod 1975, pages 44-45 and 595-604.

Study of Ethical and Theological Issues involving Bioscience and Genetic Engineering

In response to overtures about abortion and pregnancy-related issues as well as ethical and theological issues in bioscience and genetic engineering, Synod 1999 appointed a study committee "to examine the biblical/theological/ethical issues raised by the increasing capabilities and recent discoveries in bioscience and genetic engineering" (Acts of Synod 1999, p. 578). This study committee reported to Synod 2003 with guidelines for dispensing pastoral advice concerning life issues arising from new biotechnologies including genetic engineering. Synod recommended the committee's report to the churches for study and reflection and encouraged members "to engage governmental agencies regarding the pursuit of policies that are consistent with the guiding precepts adopted by synod and outlined in the report" (Acts of Synod 2003, p. 644).

A summary of the guidelines for pastoral advice concerning life issues were published as follows (from Acts of Synod 2003, pp. 632-35, 639, 643-44, found at www.crcna.org/pages/synodical.cfm):

- We must not recommend rules that bind the conscience in disputable matters. To do so would violate personal Christian liberty. Instead, we should prescribe only where God's will is clear. Scripture is clear that every human being is created in the image of God and is precious to God.
- Procreation should be kept within the context of the male-female, two parent, covenantal relationship of marriage.

- Although it is fitting for married couples to want to have children, and it is a blessing to have children, there are limits to the lengths to which couples may go in order to have children. Infertility is a result of the fall, and we may attempt to reverse this but only through morally acceptable means.
- While Scripture does not explicitly teach what moral protection the unimplanted human embryo deserves, it is clear implicitly that as a unique human life it warrants significant human protection.
- Recognizing the horrific nature of rape and the complex circumstances facing a rape victim, she is not necessarily morally culpable if she takes a morning-after pill. The focus of ministry in such circumstances should be on the compassionate care for the woman.

A full discussion of evidence and positions regarding the background of a broad range of procreative and genetic issues deliberated by the study committee are found in the Agenda for Synod 2003, pp. 275-313. As there was a majority report and a minority report, the main points of both and the final approval or rejection of their points are discussed in the Acts of Synod 2003, pp. 632-35, 639, 643-44. The final guidelines were distilled primarily from an earlier set of recommendations from the majority report of the study committee. However, some earlier recommendations were not approved, such as 1) a more explicit statement regarding a moral imperative to create human embryos in vitro only when every embryo so created will have an opportunity for implantation and 2) a statement condemning as morally wrong the intentional destruction of a human embryo except as a necessity to save the life of the mother after implantation.

These omissions from the guidelines as well as the more general nature of the final guidelines reflect significant differences of views on many of these issues among committee members. From this it follows that they also likely reflect the heterogeneity within the denominational membership on many life issues. The denomination continues to reflect on these issues through various forums including solicited and unsolicited denominational publications with which denominational members can work out the continued commitment to keep themselves informed and keep such discussions alive and relevant over time.

Appendix C

An Orthodox Appendix for the Faith and Genetics Curriculum

1. All Orthodox discussions of the weighty matters introduced by this curriculum must be informed by Orthodoxy's fundamentally 'theocentric' anthropology.
2. We must start by asking basic questions about what it means to be a human person. In the Orthodox Church's understanding, human persons are 'defined' by their having been created by God and by their bearing his image¹ which is indelible. However, despite this lofty point of origin, human beings in a very real sense experience life in this world as a 'fallen' reality, given that they encounter sin, sickness, suffering and death on a daily basis.²
3. God, out of his infinite love for the whole human race,³ affords human beings a 'way out' of the dilemma of their fallenness. Through the life, death, passion, resurrection and ascension of his Beloved Son Jesus ("like us in all things except sin"⁴), God announces the imminence of his Kingdom,⁵ addresses us with words of life,⁶ visits and redeems us⁷ in the dark places of our present lives,⁸ and summons us to begin leading new and eternal lives⁹ as his sons and daughters¹⁰ within a veritable new creation.¹¹ To accomplish this goal, God empowers us to be refashioned in Christ's likeness¹² by pouring out God's Holy Spirit upon us and upon the whole of creation.¹³

¹ Genesis 1:27. Humanity's creation is understood to be the work of God the Holy Trinity. The Image according to which humans have been formed in creation is that of the pre-incarnate Logos-Son of God who is the perfect Image of his Father (Colossians 1:15). God's "agent" in effecting humanity's creation "in the Image" is the Spirit or 'breath' of God which God "breathed into [Adam's] nostrils" so that he "became a living being" (Genesis 2:7).

² See Isaiah 35:10b LXX, quoted in the Byzantine-rite funeral prayer "O God of spirits and of all flesh . . ."

³ Described in the original Greek of numerous Orthodox liturgical texts as the *philanthropía* of God who is thus the *philánthropos* – "lover of the human race"

⁴ Hebrews 4:15

⁵ Mark 1:15

⁶ 1 John 1:1 and John 1:4

⁷ Luke 1:68b

⁸ Luke 1:79a

⁹ John 17:3

¹⁰ John 1:12 and Galatians 3:26

¹¹ 2 Corinthians 5:17 and Apocalypse (Revelation) 21:5

¹² 1 Corinthians 15:49

¹³ Joel 2:28-29, quoted in Acts 2:17

4. Along our pilgrim way towards becoming “new creatures in Christ”¹⁴ God summons us: a) to lead personal lives of self-denial and ascetic struggle, taking up our cross daily¹⁵; b) to learn how to love and serve all members of God’s human family¹⁶; and c) to grow into ever-deepening loving fellowship¹⁷ with our sisters and brothers in the one Body of Christ.¹⁸

5. Bearing the foregoing considerations in mind (points #2 – 4), there are a number of issues arising out of this curriculum which need to be addressed more specifically from an Orthodox Christian perspective. Orthodox communities using this curriculum need to be aware of these issues and to strive for their discussions on these matters to be informed wherever possible by an Orthodox *phronema*¹⁹ (see points #6 – 10 below).

6. With specific reference to point #2 above, the eastern patristic tradition discerns a definite correlation between humanity’s creation “in the Image” and the capacity for human persons to exercise freedom of choice (even in their apparently ‘fallen’ state). St Gregory of Nyssa in his treatise *On Virginity* observes that “being the image and the likeness . . . of the Power which rules all things, [humanity] kept also in the matter of a free-will this likeness to Him whose will is over all.”²⁰ The Prodigal Son²¹ (a beloved subject of Orthodox reflection every year in the immediate pre-Lenten period), despite his living in a literal pigsty of degradation and despair, nonetheless was able to “come to himself” and decide freely to “arise and go to [his] father.”²²

From this perspective, Orthodox anthropology remains critical of any type of thorough-going determinism and therefore reacts forcefully against contemporary opinions such as those reported by sociologist Alex Mauron, to the effect that “the genome is construed as the ontological hard core of our being . . . the secular equivalent of the soul.”²³

¹⁴ Galatians 6:15

¹⁵ Matthew 16:24

¹⁶ Matthew 5:43-44 and 25:40

¹⁷ *Koinônia* (“communion”)

¹⁸ 1 Corinthians 10:16-17

¹⁹ “mindset”

²⁰ (St.) Gregory of Nyssa: *On Virginity*, chapter 12; accessed on-line at www.newadvent.org/fathers/2907.htm .

²¹ Luke 15:11-32

²² Luke 15:17-18

²³ As quoted for discussion purposes in the Introduction to the curriculum’s theological chapter on “Genetics, Faith, and Human Dignity”

7. Creation according to God's image and likeness (point #2) also moves Orthodox theology to understand and describe human life as a "sacred gift"²⁴ freely bestowed on each one of us, on our families and on the wider human community by the God of love who is *philánthropos*²⁵ (point #3 above). Such a theocentric (and communitarian) point of view will condition Orthodox attitudes to a whole host of contemporary moral issues which the wider society tends to treat as falling more or less within the purview of the autonomous human subject (for example: prenatal genetic diagnosis, recourse to new reproductive technologies, abortion, assisted suicide, euthanasia and others).

Attitudes towards the lives of actual or potential "special needs children" in particular (whether before their conception, during their gestation or after their birth) need to be informed by an outlook which views every child, no matter how 'imperfect' he or she may appear to be (genetically or otherwise), as being a gift from God and therefore as having the potential both for giving and receiving love.

8. There can be no doubt that being afflicted by (and living with) a chronic handicapping and/or life-limiting illness imposes tremendous burdens and much real hardship on the person so afflicted as well as on their parents, families and other caregivers. To seek to avoid such burdens at any cost might seem, at first sight, to be nothing more than a normal, totally understandable and very human reaction.

However, Orthodox Christians who may be contemplating having recourse to one or other morally questionable 'new technologies' (e.g. prenatal diagnosis for abortion of fetuses with genetic disorders) do well to bear in mind and reflect upon the whole ascetical dimension of traditional Orthodox Christianity. As alluded to above under point # 4(a), we believe that we are enjoined by Christ to "deny ourselves" and "take up our cross"²⁶ in order to follow Christ and become his true disciples. Viewed in this way, disability and its attendant suffering, embraced willingly for Christ's sake and in witness to the Gospel, can become a way into the Kingdom for both disabled persons and their caregivers.

9. Community support (financial, material, instrumental and moral) for people and families living with disabilities (whether genetic or acquired) can go a long way towards lightening the burdens borne by these persons and their caregivers. Hopefully, Christian communities in particular would feel a special sense of commitment to those in their midst who must deal with chronic illness in themselves

²⁴ Cf. Fr. John Breck: *The Sacred Gift of Life: Orthodox Christianity and Bioethics* (Crestwood, NY: SVS Press, 1998)

²⁵ See note 3 above

²⁶ Matthew 16:24 and parallels

or family members.²⁷ Although most traditional Orthodox cultures have emphasized the virtue of providing community assistance to those in need within the extended family or village setting, these village-level communal strengths often fail to be carried over into the congregational life of the average cosmopolitan North American Orthodox parish.

10. Many Orthodox Christians will resonate with the observation that scientists making certain "futuristic" advances in genetic and reproductive technology can appear to be "playing God." In this respect (and as a concluding observation to this 'Orthodox appendix'), we should attend to these words from the curriculum's opening chapter on "Genetics, Faith, and Human Dignity." "Perhaps the use of this term ['playing God'] has to do with the belief that we are not meant to do certain things, even though we can. . . . Perhaps we are supposed to think about the kind of world we want to live in and use the knowledge we have at our disposal in a *modest and resourceful way* toward achieving that end [service to humankind]. . . . *With every increase in our knowledge combined with increasing ability to use that knowledge however we wish comes a commensurate increase in moral responsibility.*"

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²⁷ See points #4(b) and 4(c) above

Appendix D

The Presbyterian Church in Canada

The Presbyterian Church in Canada affirms that the rule of its faith and life is the Scriptures of the Old and New Testaments which are the standard by which all church doctrine, policy and pronouncements are to be evaluated and tested. It also affirms that in the pages of the written word the nature of the God who was in Christ stands revealed. In the light of this revelation the church formulates its Doctrine, some parts of which bear directly on the concerns of the Genetics Curriculum. Among these are the following.

The Sovereignty of God

Scripture witnesses to a sovereign God who is the Creator and sustainer of that which is. Created to live in conformity to God's sovereign will, in all our activity we are called to reflect God's creating, loving and sustaining activity.

Stewardship

We have been mandated to live before our Creator as responsible stewards of that which has been entrusted to our care. Thus we intervene in and give shape to the natural order so as to protect, sustain and promote life. Life is a gift from God, a gift we are called to safeguard. In this process the creating, sustaining activity of a loving God is revealed, a God who wills to overcome all that mars or destroys that fullness of life that is his intent for his creation. (1)

The Image of God

As stewards of God's creation and servants of his purposes we are created in his image and likeness. (2) This means we have been created with an intelligence that can be used to discover and to understand the mechanisms of the natural order. This enables us, through progressively creative activity, to exercise a responsible stewardship of the created order and also to take responsibility for the life of the neighbour, which life has been entrusted to our care. In our intelligence, sense of responsibility and our freedom, we reflect God's image in us.

Human Dignity

The Image of God in which we are created reflects a relationship with our Creator that we cannot escape and a relationship from which we derive our dignity. Human dignity is thus an alien dignity. It reflects God's valuation of the humanity of God's creation and is

therefore a dignity that is to be affirmed and honoured. Hence, service to God requires that God's care and concern for the well being of all people be reflected in our relationships with the neighbour, near or far. The dishonouring of human dignity is a dishonouring of God.

Additionally, God has conferred on humanity the capacity to participate in the divine nature by virtue of a capacity to know and to communicate with the Creator and to reflect the very nature or qualities of the Creator in the world. This, too, is the Creator's affirmation of the human and is that in which the blessing of humanity consists. (3) In this, too, human dignity is conferred and affirmed.

To be human, then, is to be invested with God's image, to reflect this image and to live in relationship with him. It is also to live in community. As we are created for relationship with God so also are we created for relationship with others. It is in the realization of our encounter with the other that we work out our response to the question of what it means to be human. In relationship, our humanity is affirmed and realized or denied and perverted.

Sin

Scripture affirms that our relationship both with our Creator and with our neighbour is marred by sin, a condition arising from our alienation from God.(4) This means that our relationship with God and with our neighbour will always be less than it could be, should be or is intended to be. Individually and collectively, we confront the power of sin and its destructive consequences even as we struggle to live creatively, peacefully and justly.

The Grace of God

Scripture affirms that the destructive power of sin is countered by the grace of God working effectively in the life of faith through the agency of the Holy Spirit. Grace represents God's favour and the presence of God's life in our life to effect that reconciliation, healing, wholeness and peace that is our human need.

Jesus the Christ

New life is the promise of God proclaimed in the person, death, and resurrection of Jesus the Christ. Through him we receive the forgiveness of sin. The new life in Christ, then, points to the renewed creation and fullness of life in the fully realized Kingdom of God. Such "realized eschatology" is the basis of Christian hope. (5)

Justice

Scripture witnesses to a God who requires justice. (6) That is, God seeks for his people a world that, in all its parts, reflects the qualities that constitute his nature such as fairness or equity, concern, compassion and mercy. (7) Justice, then, is God's norm for human relationships and thereby establishes the framework within which these relationships are to proceed. It is in the practice and exercise of justice that the command to love the neighbour is worked out and fulfilled. (8)

Justice has to do with the affirmation and protection of human dignity (9). This means that justice opposes all that diminishes or assaults the value that God has bestowed on his creation. Justice defends the right of God's people to be human and their right to that life which is the gift of the Creator. It also witnesses to the claim of a sovereign Creator to the life of his creation (10). God's justice requires that the life he intends for his creation to be safeguarded so that his people might live to his glory and praise (11).

Truth

Scripture summons us to seek truth and to live in truth. Therefore we are to be open to the truths and insights of human skill and science. We are called to use such knowledge and skill for the common good and as an expression of our concern for the life that has been entrusted to our care. (12) Similarly, we are called to refrain from the use of knowledge and scientific and technological capability when such use can occasion great harm or when it reflects the pursuit of particular interests at the expense of the interests of the many. (13) Such activity is destructive of the community in which we are called to live for the sake of our humanity and thus constitutes an assault on the right to the life intended for us by our Creator.

It is in the light of the witness of scripture and the expression of its faith reflected in the forgoing that the Presbyterian Church in Canada has declared its position with respect to certain aspects of genetic science and has formulated a faith response to developments in biotechnology.

In 1974, the church raised concerns about the uses to which biological engineering might be put and called for the formulation of policies and principles by which new developments in this field might be evaluated. In 1979 the church adopted an introductory study with respect to Genetic Engineering and the meaning of human life. (14) The study focused on three areas: The procedures and goals of genetic science and technology, the dangers inherent in the use of technology made possible through advances in genetic science and the vision that should guide genetic research and its

technological applications.

With respect to the goals and purposes of genetic science and technology, the study identifies what it suggests are underlying assumptions on which this enterprise proceeds. One is that through the application of genetic technology humanity quality of life can be improved. A second is that the nature of humanity can be ascertained through an understanding of its biological constitution. A third is that human wholeness can be achieved through a biomedical intervention "which could stabilize and make dominant the moral and ethical propensities of man and subordinate, if not eliminate, his negative and primitive behavioral tendencies." (15) The study concludes, then, that the fundamental goal of genetic science and technology is intervention, change and controlled reproduction with a view to the creation of a new humanity.

The study also maintains that there are certain dangers associated with advances in genetic science and technology. It suggests that if the enterprise of genetic science proceeds on the basis of a deficient understanding of what constitutes humanity, it runs the risk of de-personalizing the human subject. The nature of humanity cannot be ascertained solely from a biological perspective. An adequate understanding of the human also involves an appreciation both of the mystery of the spiritual dimension of its creation and of its predicament in the world, neither of which science can fully address.

Failure to acknowledge any limitations to their understanding and to their capacity to recreate the new human and to perfect human life can lead practitioners of genetic science or biological engineering to a pride that denies responsibility to anything other than self-interest or self-will. This leads to the possibility that genetic science will become the servant of the pragmatic interests of a technological mentality "which is inclined to assess human value in terms of social usefulness and fitness." (16)

The statement proposes that the appropriate stance for the church to adopt toward a developing biological revolution in general and genetic engineering in particular is that of a "Christian realism" which cautions against the attempt to seek a transformed humanity solely through the manipulation of genetic endowments. Science and technology in themselves cannot yield a human condition free from the destructive power of sin "which impinges upon even our best efforts," (17) a sin which results from the separation of the creation from its creator and which is ultimately overcome through the agency of Jesus the Christ. In the words of the study: "God's design for us in Jesus Christ is moral and spiritual. It takes root in us through the creation of a 'new person,' not through the improvement of our genetic endowments." (18) While cautioning against uncritical acceptance of genetic research, however, the statement

also affirms its legitimacy. For such research gives rise to an increasing ability to understand the nature of defective genes. This understanding in turn helps scientists devise responses to these genes, responses that are helpful in alleviating human suffering.

The study also raised a number of questions upon which the church needs to reflect as it seeks to frame a response to developments in genetic science and technology. What does it mean to be human? Which model of humanity would inform the enterprise of creating the new humanity? What would be the cost of separating human sexuality from procreative love as occurs in cloning? What are the costs and benefits of pursuing genetic research given the reality of pressing social needs and limited resources?

The perspectives, concerns and questions raised in this study were further elaborated in a statement on Genetic Engineering, accepted by the church in 1989. (19) The statement asserts the need for the formulation of criteria in order to adequately assess and respond to the ethical dilemmas posed by ongoing advances in genetic engineering and the application of genetic technology. The statement then sets out a number of principles that should inform such an assessment and response.

Stewardship

The study calls for acceptance of new knowledge and of scientific insight and discovery as tools for an enhanced understanding of the natural world and "the particularities of our time." Such knowledge and understanding is to be used in order to fulfill the biblical mandate for humanity to exercise a faithful stewardship of the created order.

Equality

The statement affirms that no one gender, race or group is of greater value than another. This means that gene selection should not be used in an attempt to give one life greater value in the eyes of society than another. The procedure should not be used for the purpose of selecting certain genetic traits deemed desirable to be passed on to children and the elimination of traits thought to be less desirable. Gene therapy should not be used to benefit one segment of society over another. Similarly, gene splicing should not be used to create a life form for the advantage of only a few.

Dignity

Genetic engineering and technology should be used as a means of protecting and honouring the dignity of God's creation.

Reproductive technology

The statement opposes the use of gender selection as a means of reproductive control.

Human rights

The rights and freedoms of all people are to be protected. Thus, genetic screening must be voluntary and mass genetic screening of any particular social or racial group is to be avoided.

Pastoral counseling

The church should be aware of developments in genetic engineering in order to be able to offer effective pastoral counseling and guidance to those who are dealing with issues relating to genetic disorders either in themselves or in their offspring.

Embryo research

The church recommends "that embryonic research into correction of human genetic disorders using tissue encultured by in-vitro fertilization should proceed only under strict government guidelines that do not allow the indiscriminate use of fertilized embryos, but encourages development of cell culture lines from fetal material that will accomplish the same purpose." (20)

In 2000 the church adopted a study on human cloning and biotechnology that reflected on a number of questions and issues posed by ongoing developments in genetic science and technology, issues such as stem-cell research, somatic gene therapy and research in genetic screening. It also considered the appropriate relationship that should exist between human and non-human species and the extent to which we are justified in subjecting non-human species to the utilitarian needs of humanity. (21)

The study also raised the question as to whether or not there is a limit to the knowledge to which humans have a right and suggests criteria by which to determine which knowledge it is legitimate to acquire and which is not. (22)

In these and other areas of genetic research and its technological application, the church has continued to urge caution with respect to what genetic science seeks to accomplish and what use is made of its discoveries. The church has also committed itself to ongoing reflection and study of the possibilities provided by the biological revolution of our age as it attempts to be faithful to its calling to glorify the Creator and serve God's creation.

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Appendix E

Roman Catholic Perspectives

The Faith and Genetics curriculum of the Biotechnology Reference Group, a committee of the Canadian Council of Churches, is an interesting exercise in tackling ethical questions that arise from developments in genetic research. In general, the Roman Catholic Church welcomes progress in any area of scientific and medical research that is aimed at helping people overcome diseases and serious defects. Many cures have been found for these problems, and in the field of genetics the sequencing of the genome is seen as an encouraging contribution to developing more relief for suffering people. In principle, advances in genetic research are to be sought and encouraged, both for the cures that are developed and also for the new insights they give into the human condition, for example in showing how some patterns of behaviour have a genetic origin.

Pope Benedict XVI specifically referred to this in an address to the Pontifical Academy for Life in February, 2009: "This knowledge, the result of intelligence and the efforts of countless experts, has made possible not only a more effective and early diagnosis of genetic diseases but also treatment destined to relieve the sufferings of the sick and, in some cases even to restore the hope of recovering their health."

As in so many areas, further ethical questions tend to arise once more specific practices are developed, and once the implications of those practices become clear. The Roman Catholic magisterium has made specific pronouncements about genetic practices, and, broadly speaking, it approves procedures that are truly therapeutic and beneficial for the person receiving them. Archbishop Fisichella, the current President of the Pontifical Academy for Life (the committee responsible for the application of medical and genetic research and so on), noted that genetic research for therapeutic success is a necessity for human development. He emphasized that "... scientific progress must be accompanied by greater ethical awareness that respects the full dignity of every human person." The Vatican has frequently voiced its concerns about ethical concerns such as, for example, the possibility of the practice of eugenics based on genetic information, where those with serious genetic defects might not be considered worth treating.

In a message for the World Day of the Sick issued in December, 2003, Pope John Paul II urged the protection of every individual, thanking medical and scientific researchers who have made advances in the field of genetics, and reminding us that "No one, in fact, can arrogate to himself the power to destroy or manipulate in an indiscriminate manner the life of the human being."

In 2008, in the most recent official Magisterial document that refers to genetic matters, *Dignitas Personae*, the Congregation for the Doctrine of the Faith stated in Note 19 that: "Gene therapy is allowed if used to eliminate defects in somatic cells, but not in germ-line or reproductive cells. Risks must be carefully assessed as in any procedure. Germ-line procedures may affect future children and the possibility of future harm precludes its use." The Congregation expressed concern in Note 27 about the use of genetic engineering in humans for non-medical purposes, especially if "... it involves an attitude of being dissatisfied with certain aspects of being human." Our response should, rather, embody the attitude that the Congregation promotes, i.e., that of "...accepting human life in its concrete, historical, finite nature."

Roman Catholics are instructed to ensure that every individual be protected from any changes proposed to be made through genetic engineering that are not sought for that individual's therapeutic treatment, i.e., treatment for disease, but rather are changes aimed at altering the person "for the better," which more accurately means in accordance with the engineer's subjective view of what is "better."

Pope Benedict XVI warned in his 2009 speech to the Pontifical Academy for Life that, "... If the human being is reduced to an object of experimental manipulation from the very earliest stages of his development, this means that biotechnological medicine has surrendered to the will of the stronger." Our trust in scientific developments is always to be subject to an ethic that first and foremost protects human life at every stage of its existence.

On a more global note, Pope John Paul II called in 2003 for the protection and development of third world countries, in order to "... prevent a further source of inequality between nations, also given the fact that enormous financial resources are invested in research of this sort, resources which, according to some, could be allocated first and foremost for the relief of curable illnesses and of the chronic poverty of so many human beings. " Catholic teaching on genetics, therefore, not only encourages genetic research in the hope that cures for serious illnesses will be found, but also hopes that it will lead to an escape from poverty in less developed nations. These hopes not only raise the bar for our expectations of genetics, but also acknowledge the tremendous potential genetics has to benefit humankind individually, socially and globally.

Appendix F

The Society of Friends

Queries on Faith and Genetics

Quakers believe that “there is that of God in everyone.” Many believe that this also includes the natural world. In the 21st century, as we contemplate the rapid development of biotechnologies and genetics, how should Quakers respond?

During the 1700s Quakers adopted a set of queries as a form of guidance intended to help them direct their thoughts when seeking their way in the world. These queries have been augmented and reworded as time passed and have proved their worth through to the present day. Using the same approach the following Queries on Faith and Genetics are offered for worship, prayer, discernment, and discussion.

Queries of a General Nature

- 1) How does God’s presence in each one of us act as teacher and lead us to act in ways that lead to the betterment of people?
- 2) The potential to do good in the world and leave it better is present in all of us. As we live out that potential, how can we take into account self interest?
- 3) What must people of faith do to protect and to maintain hope for the potential good that can come from genetics and technological development?

Queries Bearing on Genetics and Technology

- 4) What criteria should we use to judge the positive and negative aspects of genetically related technological change?
- 5) As your congregation (Meeting) studies and prayerfully considers technological change, how do you include its impact on reproduction, on men’s and women’s bodies, their role in families and society, and on those with special needs?
- 6) How can we evaluate the positive and negative effects of reproductive technologies on the lives of individuals, on families, and on society?
- 7) What are the advantages and disadvantages of particular technologies for individuals, families, local and global human society, and for all other life?