International Seminar on

Human Genetic and Reproductive Technologies: Comparing Religious and Secular Perspectives

Organized by

Islamic Organization For Medical Sciences

in Collaboration with

WHO (EMRO), ISESCO, and CIOMS

Programme & Abstracts

Muharam 7 - 10, 1427 H

February 6 - 9, 2006

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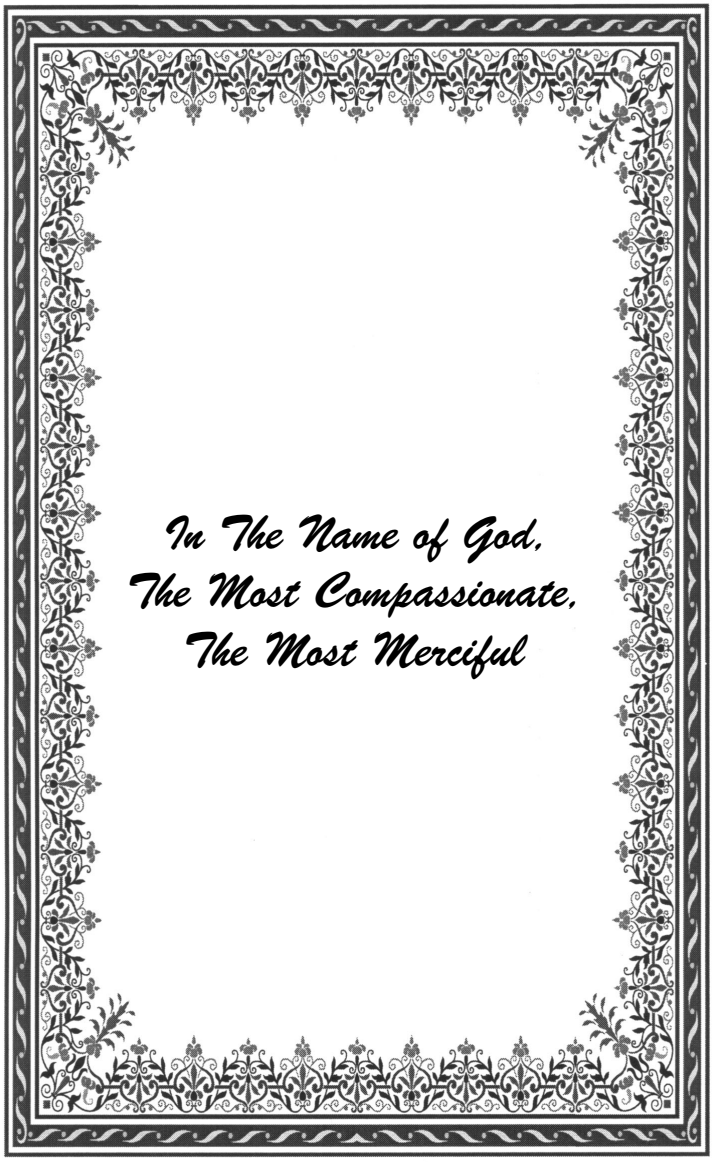
In The Name of God,
The Most Compassionate,
The Most Merciful

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PROGRAMME

FIRST DAY
Monday, 6 February 2006

First - Opening Ceremony **(9.00 - 10.30)**

Second - Plenary Lecture

- Human Genetic and Reproductive Technologies: Comparing Religious and Secular Perspective - An Islamic Perspective
  Dr. Hassan Hathout (10.30 - 11.15)

- Tea Break (11.15 - 11.45)

FIRST DAY
Monday, 6 February 2006

Topic I

Humanity and Creation / The Natural World

First Session:
Humanity and Creation/The Natural World - The Islamic, Christian and Secular Perspectives (11.45 - 14.00)

Chairman: **Dr. Ibrahim Badran**

Rapporteur: **Dr. Abdul Aziz Al-Swailem**

Speakers

1 - "Given into Your Hands" (Gen 9:2): From Gardener to Master of Nature
- Dr. Bruce Foltz (11.45 - 12.10)

2 - Rethinking the Secular Perspective on Biology: Going Beyond the Morpoly of Materialism
- Dr. Mustafa Akyol (12.10 - 12.35)

3 - Man, Instinct, Nature and Technology
- Dr. Ammar Al-Talbi (12.35 - 13.00)

- **Break and Prayer** **(13.00 - 13.15)**
- **DISCUSSION** **(13.15 - 14.00)**
- **Lunch Break** **(14.00 - 15.00)**

FIRST DAY
Monday, 6 February 2006

Topic I

Humanity and Creation / The Natural World

Second Session:
Creation of Human Being - Islamic and Christian Perspective
(15.00 - 17.00)

Chairman: **Dr. Ezzeddin Ebrahim**

Rapporteur: **Dr. Aida Al-Aqeel**

Speakers

1 - "Creation and Man: a Christian View"
- Dr. Cyril Tennant (15.00 - 15.25)

2 - Humanity and Creation: An Islamic Perspective
- Dr. Jamal A. Badawi (15.25 - 15.50)

3 - The Creation of Man in his Natural Image
- Dr. Nasr Farid Wasil (15.50 - 16.15)

- **DISCUSSION** **(16.15 - 17.00)**
- **Tea Break** **(17.00 - 17.15)**

FIRST DAY
Monday, 6 February 2006

Topic I

Humanity and Creation / The Natural World

Third Session:
Creation, Control of Nature and Ethics - Islamic & Secular Perspectives (17.15 - 19.30)

Chairman: **Dr. Mohd. Haitham Al Khayat**

Rapporteur: **Dr. Maher Abdul Kader Ali**

Speakers

1 - Science, Capitalism and Control of Nature
- Dr. David King (17.15 - 17.40)

2 - Humanity and Creation/The Natural Disposition of the World
- Dr. Assaad El Sahmarani (17.40 - 18.05)

3 - Islamic Perspectives on God, Humanity and Nature
- Dr. Muzaffar Iqbal (18.05 - 18.30)

- **Break and Prayer** **(18.30 - 18.45)**
- **DISCUSSION** **(18.45 - 19.30)**

SECOND DAY
Tuesday, 7 February 2006

Topic I

Humanity and Creation / The Natural World

Fourth Session:
Human Genetics and Reproductive Technology and Surrogate Uterus - Islamic Perspective (8.30 - 10.05)

Chairman: **Dr. Ajeel Al-Nashmi**

Rapporteur: **Dr. Mohamed Abu backer Samman**

Speakers

1 - Human Genetics and Reproduction from the View Point of the Three religions.
- Dr. Abdul Rahman Salama Refai (8.30 - 8.55)

2 - Surrogacy: An Islamic Ethico-Legal and Social Perspective
- Dr. Abulfadl Mohsin Ebrahim (8.55 - 9.20)

- **DISCUSSION** **(9.20 - 10.05)**
- **Tea Break** **(10.05 - 10.20)**

SECOND DAY
Tuesday, 7 February 2006

Topic II

Genetics, Reproductive Technologies and the Family

Fifth Session:
Philosophy of Genetic and Human Reproductive Technology - Islamic, Christian and Secular Perspectives (10.20 - 12.20)

Chairman: **Dr. Abdul Rahman A. Al-Awadi**

Rapporteur: **Dr. Ali Yousuf Al-Saif**

Speakers

1 - Pre-Implantation Genetic Diagnosis (PGD)
- Dr. Lisa Lehmann (10.20 - 10.45)

2 - Ethical Problems of Prenatal and Pre-Implantation Genetic Diagnosis
- Dr. Mounir A.M.S. Farag (10.45 - 11.10)

3 - Human Reproduction: Current Problems
- Sheikh Mohd. Mokhtar Al-Salami (11.10 - 11.35)

- **DISCUSSION** **(11.35 - 12.20)**
- **Break and Prayer** **(12.20 - 12.50)**

SECOND DAY
Tuesday, 7 February 2006

Topic II

Genetics, Reproductive Technologies and the Family

Sixth Session:
Islamic and Professional Perspectives of the Ethical Issues of Reproductive Technology (12.50 - 14.50)

Chairman: **Dr. Hussein Gezairy**

Rapporteur: **Dr. Habibah Al-Chaabouni**

Speakers

1 - Islamic Perspective of Ethical Issues in ART.
- Dr. Gamal I. Serour (12.50 - 13.15)

2 - Assisted Reproductive Technologies
- Sheikh Mohamed Ali Al-Taskheeri (13.15 - 13.40)

3 - Human Genetics and Reproductive Technologies: How They Reflect on the Family
- Dr. Saddiqa Al-Awadi (13.40 - 14.05)

- **DISCUSSION (14.05 - 14.50)**
- **Lunch Break (14.50 - 15.50)**

SECOND DAY
Tuesday, 7 February 2006

Topic II

Genetics, Reproductive Technologies and the Family

Seventh Session:
Genetics and Reproductive Technology - Islamic, Christian and Professional Perspectives (15.50 - 17.50)

Chairman: **Counsellor Abdullah Al-Essa**

Rapporteur: **Dr. Hamid Ahmed**

Speakers

1 - Christian Principles for Assisted Human Reproduction.
- Dr. Gerald Winslow (15.50 - 16.15)

2 - Human Genetics and Reproductive Technologies: An Islamic Perspective.
- Dr. Mohamed Ali Al-Bar (16.15 - 16.40)

3 - The Islamic stance on Human Genetics and Reproductive Technologies
- Dr. Abdul Sattar Abu-Ghuddah (16.40 - 17.05)

- **DISCUSSION (17.05 - 17.50)**

THIRD DAY
Wednesday, 8 February 2006

Topic II

Genetics, Reproductive Technologies and the Family

Eighth Session:
Reproductive Technology, DNA and Cloning - Islamic and Professional Perspectives. (8.30 - 10.30)

Chairman: **Dr. Ted Peters**

Rapporteur: **Dr. Mohamed Ali Al-Bar**

Speakers

1 - The Neglected Contributions of Islamic Civilization to Genetics and Reproductive Biology
- Dr. Malik Badri (8.30 - 8.55)

2 - Islamic Perspective on Human Cloning, Stem Cell Research and Pre-implantation Genetic Diagnosis (PGD).
- Dr. Aida Al-Aqeel (8.55 - 9.20)

3 - Contributions of Genetic Engineering Research to understand Islam as believe with facts in Quran and Sunna.
- Dr. A. Farouk Gad (9.20 - 9.45)

- **DISCUSSION** **(9.45 - 10.30)**
- **Tea Break** **(10.30 - 10.45)**

THIRD DAY
Wednesday, 8 February 2006

Topic III

Social Impacts of Genetic and Reproductive Technologies

Ninth Session:
Genetics and Reproductive Technology - Islamic, Jewish and Secular Perspectives (10.45- 12.45)

Chairman: **Dr. Mamduh Gabr**

Rapporteur: **Dr. Salah Al-Ateeqi**

Speakers

1 - Human Genetic and Reproductive Technologies - A Secular Perspective
- Dr. Shahid Athar (10.45 - 11.10)

2 - Reproductive Technologies: Jewish Values and their Impact on Public Policy and Social Structure in Israel.
- Dr. Vardit Ravitsky (11.10 - 11.35)

3 - Human Genome: Social and Ethical Implications
- Dr. Hamid K. Ahmed (11.35 - 12.00)

- **DISCUSSION (12.00 - 12.45)**
- **Break and Prayer (12.45 - 13.15)**

THIRD DAY
Wednesday, 8 February 2006

Topic III

Social Impacts of Genetic and Reproductive Technologies

Tenth Session:

A Right to Reproduce, Designing Children and Genetic Counseling - Islamic, Jewish and Secular Perspectives

(13.15 - 15.15)

Chairman: **Dr. Mahmoud Zagzuk**

Rapporteur: **Dr. Aymen Ramadan**

Speakers

1 - Reprogenetics and Genetic Counseling - Scientific and Ethical Perspective
- Dr. Aly A. Mishal (13.15 - 13.40)

2 - Designing Children: Modern Genetic Screening Technology and Jewish Law
- Dr. Michael Broyde (13.40 - 14.05)

3 - A Right to Reproduce: Equality Not Liberty
- Dr. Muireann Quigley (14.05 - 14.30)

- **DISCUSSION** **(14.30 - 15.15)**
- **Lunch Break** **(15.15 - 16.15)**

THIRD DAY
Wednesday, 8 February 2006

Topic III

Social Impacts of Genetic and Reproductive Technologies

Eleventh Session:
Cloning, Immortality and Genetic Engineering - Islamic and Secular Perspectives (16.15 - 18.15)

Chairman: **Dr. Abdel Aziz Saleh**

Rapporteur: **Dr. Abulfadl Mohsin Ebrahim**

Speakers

1 - Genetic Engineering, Social Justice, and the Future of Humanity: Confluence of Religious and Secular Concerns
- Dr. Farhat Moazam (16.15 - 16.40)

2 - Recent Research on "Telomerase" enzyme, and the concept of "immortality"
- Dr. Omar Alfi (16.40 - 17.05)

3 - Human Cloning from the view point of Fiqh (Shariah) and Ethics.
- Dr. S.M. Mohaghegh Damad (17.05 - 17.30)

- **DISCUSSION (17.30 - 18.15)**

FOURTH DAY
Thursday, 9 February 2006

Topic IV

How and Where do we draw the lines?

Twelfth Session:

Human Being and His Creation where we can draw lines - Islamic, Christian and Philosophical Perspectives

(8.30 - 10.30)

Chairman: **Dr. Abdul Aziz Al-Tewaijry**

Rapporteur: **Dr. Aly A. Mishal**

Speakers

1 - Human Creation and where and when we draw the lines, Islamic Perspective.
- Dr. Ibrahim Badran (8.30 - 8.55)

2 - Where the Catholic Church Stands on Genetic Issues
- Bishop Camillo Ballin (8.55 - 9.20)

3 - Our Humanness: Unalterable Essence and Changeable actuality
- Dr. Jaafar Sheikh Idris (9.20 - 9.45)

- **DISCUSSION** **(9.45 - 10.30)**
- **Tea Break** **(10.30 - 10.45)**

FOURTH DAY
Thursday, 9 February 2006

Topic IV

How and Where do we draw the lines?

Thirteenth Session:
Stem Cell Controversy - Islamic, Jewish and Christian Perspectives (10.45 -12.45)

Chairman: **Dr. David King**

Rapporteur: **Dr. Malik Badri**

Speakers

1 - The Stem Cell Controversy: Secular Form and Religious Substance
- Dr. Ted Peters (10.45 - 11.10)

2 - Stem-cell Research
- Dr. David Bleich (11.10 - 11.35)

3 - Stem Cells and DNA: Modern Ethical Challenges
- Dr. Maher Hathout (11.35 - 12.00)

- **DISCUSSION (12.00 - 12.45)**
- **Break and Prayer (12.45 - 13.15)**

FOURTH DAY
Thursday, 9 February 2006

Topic IV

How and Where do we draw the lines?

Fourteenth Session:
Stem Cell, Prenatal Diagnosis and Reproductive Technology - Islamic Perspective (13.15 - 15.15)

Chairman: **Dr. Khalid Al-Mathkoor**

Rapporteur: **Dr. Abdul Sattar Abu Ghuddah**

Speakers

1 - Islamic Medical Ethics Amidst Developing Biotechnologies.
- Dr. Musa Mohamed Nordin (13.15 - 13.40)

2 - Stem Cells and Cloning Similarities and differences
- Dr. AbdulAziz Al-Swailem (13.40 - 14.05)

3 - Laboratory and Ultrasound Prenatal Diagnosis: Prenatal Genetic Diagnosis: Scope, Applications and Limitations in Arab Countries.
- Dr. Hanan Hamamy (14.05 - 14.30)

- **DISCUSSION (14.30 - 15.15)**
- **Lunch Break (15.15 - 16.15)**

FOURTH DAY
Thursday, 9 February 2006

Topic IV

How and Where do we draw the lines?

Fifteenth Session:
Challenges of Science, Media and Overview about the Seminar (16.15 - 18.15)

Chairman: **Dr. Abdul Malik Mansour**

Rapporteur: **Dr. Shahid Athar**

Speakers

1 - Overview of the Seminar.
- Dr. Mohd. Haitham Al-Khayat (16.15 - 16.40)

2 - The Media and Biotechnologies: Ethical Dilemmas.
- Mrs. Nadia El-Awady (16.40- 17.05)

3 - The Challenges of Science and Technology from an Islamic Perspective
- Dr. Mohamed Abdul Wahab Galal (17.05 - 17.30)

- **DISCUSSION (17.30 - 18.15)**
- **Break and Prayer (18.15 - 18.30)**
- **Recommendations (19.30 - 20.00)**
- **Closing Session (20.00 - 20.30)**

FIRST DAY
Monday, 6 February 2006

Plenary Session
Human Genetic and Reproductive Technologies: Comparing Religious and Secular Perspective
An Islamic Perspective

Dr. Hassan Hathout

Human Genetic and Reproductive Technologies: Comparing Religious and Secular Perspectives - An Islamic Perspective

Hassan Hathout

Islamic Organization for Medical Sciences

Allah (God) is the infinite Being who originated the creation including planet Earth. Out of Earth, he created life, including human life.

To replenish Earth and maintain life, individual lives have to come to an end. Man, however, is more than the earthly component because his body harbors a spiritual godly element. This is the philosophy of the divine religions of Judaism, Christianity, and Islam. The paper displays the Islamic juridical instruments by which to formulate rulings on the events of life in all times and places. Humans are the only autonomous race given knowledge, a concept of good and evil, the freedom to choose (within limits), and hence, inevitable accountability.

Human life is therefore, deservedly, sacred. It is inviolable from the time of establishment of the feto-maternal unit to the natural end of its life on Earth except for limited and specified indications.

Reproduction is a legitimate need for the species and legitimate desire for the individual. Treatment for infertility

is therefore legitimate provided it observes the juridical prescription for pairing off and procreation i.e. under the cover of a marriage contract between one man (husband) and one woman (wife). In this respect, the resort of test-tube baby technology not involving a third party (sper, ovum, or uterus), during the span of the marriage, would be permissible. The procedure is merely a "detour" if a road is obstructed.

Genetic engineering involving the introduction of the genes of one species to another is not permissible except as a means of combating illness and alleviating suffering. Outside this necessity, it is impermissible.

Cloning is outside the bounds of religious permission if used for reproduction. Moreover, it is fraught with serious consequences. Its use for purely research purposes may be permissible during the very early stages before body systems are formed including the nervous system.

Stem cell research on pre-implantation embryos (usually surplus from IVF procedures) may be justified if the aim is to save actual patients suffering serious illness, on the basis of the juridical rule of choice of the lesser of two evils.

FIRST DAY
Monday, 6 February 2006

Topic I:
Humanity and Creation/
The Natural World

First Session
Humanity and Creation
The Natural World - The Islamic, Christian and Secular Perspectives

Chairman: **Dr. Ibrahim Badran**

Rapporteur: **Dr. Abdul Aziz Al-Swailem**

Speakers

- Dr. Bruce Foltz
- Dr. Mustafa Akyol
- Prof. Ammar Al-Talbi

"Given into Your Hands" (Gen 9:2): From Gardener to Master of Nature

Bruce Foltz

Professor of Philosophy, Eckerd College, U.S.A.

Genesis presents Adam as the vegetarian gardener of Eden, which he is to work and for which he as the gardener is to care (Gen 2:15). There is a dramatic transformation in man's relationship to nature after the Flood. In His covenant with Noah, God gives all living things into the hands of Noah's sons, so that fear and dread of humans fall on all animals (Gen 9:2-3), for man is no longer to be a vegetarian. Though all animals are put into the hands of Noah and his sons, human nature is not. A traditional Christian approach to the use of somatic and germ-line genetic engineering differs importantly with regard to the obligations that humans possess with respect to their nature, versus the nature of other living beings. On the one hand, Christians know that their nature, unlike the nature of any other living being, has been taken on by Christ in the Incarnation, and they may not so re-engineer themselves that their biological being would become different in kind from the biological nature taken on by Christ. They know as well that the differences between the sexes are ontologically normative: traditional Christianity is

committed to a gender essentialism that may not be set aside through genetic engineering. The passages in Genesis emphasizing humans being created as male and female (1:27; 5:2) are affirmed by Christ in His account of marriage (Mark 10:6). On the other hand, Christianity has recognized no limit to the beneficent and prudent reshaping of life on this planet. Through selective breeding mankind came to flourish with the development of new varieties of animals and plants. Such beneficent recasting of life on this planet is therefore not proscribed to humans. Though on the one hand humans are forbidden to reshape their human nature radically or to set aside the differences defining the sexes, on the other hand they are at liberty to employ human somatic and germ-line engineering in order to cure disease and, as long as it does not become an all-consuming project, even to set aside many of the common morbidities that have afflicted humans since the Fall. With the constraints noted above, traditional Christianity has no grounds to prohibit the prudent application of somatic and germ-line genetic engineering on humans and surely not on animals.

Rethinking the "Secular Perspective" on Biology: Going Beyond the Monopoly of Materialism

Mustafa Akyol
Columnist & Writer
Turkey

Our ideas about the future of life are undoubtedly linked with our beliefs about its past. The way we explain the origin of life will have an impact on what we regard as right or wrong about it, and thus, bioethics.

As for the origin of life, Judaism, Christianity and Islam accept and assert a theistic view -- that life is created by God. Modern science, on the other, has adopted the materialistic view that regards life as a product of the blind forces of nature. The clash between the two views has been a major bone of contention in the past two centuries. Hence comes the "science vs. religion" dichotomy.

But in the recent decades, unexpected scientific discoveries about the origin of the universe and life have led some scientists to reconsider the materialist paradigm and its core theories such as neo-Darwinian evolution. The overwhelming evidence for design in nature suggests that the a secular perspective on biology may well end up accepting the theistic view; that life is indeed intended and designed by an intelligent Being.

Man, Instinct, Nature and Technology

Ammar Al Talbi

Algeria University,
Algeria

This paper aims to present the Islamic view point concerning man's dignity and his relationship to nature. It will also deal with the impact of technology on man as well as on nature.

The speedy advancement in the area of biomedical technology is increasingly affecting man day after day. Although it has actually solved some of his problems and relieved some of his pains it has also raised a lot of ethical and religious dilemmas that have led to a form of disunity between the purpose of improving man's conditions and the means of doing it. People have consequently grown disappointed that science and technology are now jeopardizing man's values and his natural disposition ;hence, the need for "Life Ethics" to control technology applications and see that they are based on religious values and a set of laws and regulations which must be heeded. In fact, we need to agree anew on a definition of man that preserves his dignity and maintains his value so that he may not be manipulated as an "object" or a "commodity". This worthy

goal requires the concerted efforts of religious scholars, ethicists, biologists, medical scientists and technologists.

This paper tackles the questions posed by the seminar organizers for the first session.

The paper has stressed man's dignity citing verses of the Quran, Traditions of the Prophet (PBUH) and concepts of Islamic philosophers and scholars.

The paper also deals with natural environment and man's relationship with it as his life is closely connected to ecological systems. In this respect, reference is made to Ibn Tufail's philosophical story " Hayy Ibn Yaqthan" and the respect he shows towards plants, animals as well as man.

Life ethics should direct technologies applied to man so that they may not end up destroying his life, deforming his body or undermining his innate disposition. Manipulating man's genotype and characteristics could lead to producing a being that is remotely related to Man as we know him, or an ungovernable monster that makes one gasp in horror at seeing it. Tampering with cells and genes for the claimed purpose of designing babies could have the same devastating effects of the first atomic explosion. Ethicists might find themselves in a position where they can not deal with such problems or have to adapt to technologists and pharmaceutical manufactures. They might even be tempted to accept large financial gifts donated by big corporations and laboratories which care for nothing more than making money.

The protection of living beings involves protection of man himself. Therefore, earth is of enormous importance

to all beings; from earth they come, and to earth they are returned:

> "From the earth We have created you, and to the earth We will restore you; and from it We will bring you back to life" (20:55)

The earth ecological system is an important source of viable life. So, the Quran says

> "And do not corruption in the land, after it has been set right." (7:85)

There is harmony between the macrocosm and the microcosm (Man) as the Islamic sophists say. So, we must be friends with nature: instead of being in conflict with it, we must sympathize with it and try to know as much as we can about it.

Some scientists are far from being sensible when they do not acknowledge the human status of an embryo before genetic screening. If the poor embryo does not make it, it loses its chance of life. Another unwise practice is to sterilize patients and criminals to bar their chances of begetting children.

Prenatal diagnosis has mistakenly led to aborting unimpaired babies and letting impaired ones to get born. A baby is entitled not to get terminated. If a human is created, he must be preserved and maintained. He must not be tampered with or deprived from an open chance of a future life.

Genetic enhancement of an embryo may be allowed if it aims to prevent or cure certain disorders through modifying its DNA in general and its somatic cells in

particular. But an embryo's germ cells should not be the object of any manipulation as this will be carried over to the following generations and may endanger the embryo's future genotype.

Other unacceptable practices include merging two cells in order to blend their genetic material and produce a cell of a different genotype; cross-breeding of different animal species; and absurd cloning.

Guidelines should be set down to make sure that scientific applications are carried out for the benefit of mankind, not for the pursuit of science fiction.

In view of the complex nature of biotechnology, we could be ill-advised to hastily permit or prohibit any practice unless we make sure it achieves purposes that do not undermine man's dignity. Scientific research should not be disrupted on the basis of mere conjectures.

Creation of the human species as elucidated in the Quran is understood to involve physical and spiritual diversity in humans. People should not be cast in the same mould through technological means so that they become mere copies of one variety, which runs against the natural system of creation as it delimits a person's biological and spiritual open-ended development.

The fertilization of a human egg sparks off the life of a human being. This life continues to develop because the resulting embryo contains the full genetic program that gets decoded along the way till the very end, i.e death. Therefore, the embryo which signals inception of life should not be jeopardized under any pretext unless inter-

vention is utterly inevitable or considered the lesser of two evils, as is doctrinal in Islamic Shari'a.

Al-Ragheb Al-Asfahani said, "The honor of man resides in being complete in the meaning for which he is created" God has honored man by endowing him with a precious mind, kind emotions and comely appearance. With this mind, he comes to know his Creator and attains wisdom, knowledge and civilization. Hence, man should not be the object of aggression of any form; his dignity should be preserved. The most characteristic attribute of man is that he is an ethical being.

The paper refers to the views of the Islamic jurists about manipulation of the embryo and cloning. We find in the Islamic Shari'a all the necessary guidelines for respecting scientific research as science is held in high esteem in the Islamic tradition and history.

The paper calls for reaching and agreement on common grounds for ethics among all nations of the world. These ethics should be a frame of reference for the relationship between the bio-technologist who is sometimes given the power to terminate a pregnancy or allow it to go through. We want biotechnology to do away with the disease, not with the patient. Anyway, these matters should be subjected to strict protocols within the framework of scientific ethics. Protocols of scientific research should be submitted to academic committees whose function is to protect the subjects of a biomedical research and approve the procedures of this research before embarking on it so

that we could avoid major risks and discrimination between the rich and the poor.

There should be a code of ethics for the patient in a hospital which specifies his rights and duties. Such a patient should never be used for any experiment without his informed consent; that is, he should be informed about the kind of risks he might be put to.

Preserving the human heritage encoded in his genes should be an inviolable principle.

FIRST DAY
Monday, 6 February 2006

Topic I:
Humanity and Creation/
The Natural World

Second Session
Creation of Human Being -
Islamic and Christian Perspectives

Chairman: **Dr. Ezzeddin Ebrahim**

Rapporteur: **Dr. Aida Al-Aqeel**

Speakers

- Dr. Cyril Tennant
- Dr. Jamal A. Badawi
- Dr. Nasr Farid Wasil

Creation and Man: A Christian View

Cyril Tennant

U.K.

The aim of the first part of this paper is to give a Christian view of the doctrines of man and creation, based in particular on the opening chapters of Genesis, the first book of the Bible.

After briefly touching on the doctrine of God as the Almighty Creator Who sustains all things, I continue with the doctrine of man, focussing on the concept of man as made in the *image of God*. Man reflects some of the qualities of God and has a special relationship to Him; he is distinct from the rest of creation, animate and inanimate, and set over it to control it and care for it. Significantly, the expression is also used of both man and woman: the sexes are complementary and are called to be involved in God's work of creation by procreating. I also attempt to discover whether the term helps in assessing the status of the unborn child. and how iat what point the unborn child receives the image of God. The other significant doctrine is that of the fall of man. As a result of this, both man and the whole of creation are in some way flawed and imperfect.

In the second part I seek to draw out the implications

of these doctrines. Man has a dignity and an important role as a controller and steward of the rest of creation. At the same time, he is to recognise his limitations and to be humble, both because of his position in relationship to God, and also because he is essentially flawed and imperfect as a result of the fall. Taking these doctrines together, his task in controlling creation and caring for it is to seek to restore it to its pristine pre-fall perfection, not to arrogate the place of God by seeking to improve on it. This has particular importance for genetic technologies: the production of 'designer babies' or 'superhumans' is equally wrong.

The Biblical emphasis on the complementarity of the sexes and the importance of the family also has big implications for genetic technologies, outlawing 'third parties'.

Humanity and Creation
An Islamic Perspective

Jamal A. Badawi

Professor Emeritus [Religious Studies and Management]
Saint Mary's University, Canada

One vital, highly controversial and contemporary aspect of bioethics is human genetics and productive technologies. Like other bioethical aspects, it has far reaching **implications; medical; social; legal and even political**. Any individual, professional and collective **decision in this area is predicated, in the first place, on the relevant world view, "religious" or "secular".** This paper addresses some **key aspects of an Islamic world view** including the following:

1. Position of the human in the scheme of Allah's creation

The Qur'an narrates how Allah announced to the angels His decision to create **trustee** to live on earth and fulfill Allah's plan. Verses 30-34 of the second Surah [chapter] of the Qur'an provide the earliest explicit statement about **human dignity**, which is confirmed elsewhere in the Qur'an.

2. Human Nature

The Qur'an sums up human nature: as a **physical-**

intellectual-spiritual being Allah created the human in a beautiful physical mould and symmetry. The human is also endowed with intellect and the power of complex reasoning and expression. The Qur'an speaks about the most crucial source of human dignity; **Allah's divine breath endowed to every human being**. This position of honor is closely tied to the **fulfillment of one's role** as 'trustee' of Allah and as a free agent. This is a heavy responsibility, one, which requires making the right choice.

The physical, intellectual and spiritual elements in human existence are **not regarded as three different compartments.** They are not necessarily irreconcilable either.

3. The purpose of creation of humanity

The Qur'an teaches that the purpose of creation of humanity is to "worship" Allah **Worship of Allah, however, is not mere formalism.** Nor is it restricted to the performance of certain rites or other devotional acts. Rites and devotional acts do have their place. Yet, the concept of 'worship' in Islam is much more comprehensive than the common meaning attached to the term. **Any act is a potential act of worship** if it meets two fundamental conditions - first; to be done with 'pure' intention; second, to be done within the limits prescribed by Allah

The ethical outlook of the individual and his/her behavior is not only affected by the person's view of his/her own nature, but also by the person's view of the world around him/her.

4. An Islamic view of the universe

The Qur'an regards **the universe as a tool helping every human being to perform his/her role as a trustee of Allah on earth.** For example, Islam considers the **environment as a personal and collective trust**, not a personal or collective property. This is why the destruction or unwise use of the environments and resources is regarded as a moral crime. This Islamic vision does not only aim at individual piety, but it also provides for a more **dynamic view of life that demands active participation of humans in righting the wrong and striving to achieve peace and social justice.**

The greatest challenge today is for all faith communities to **practice what they preach** and to stand together against abusers of the rights and responsibilities of human trusteeship. **Herein lays the restoration of true human dignity**.

The Creation of Man in his Natural Image

Nasr Farid Wasil

Egypt

The paper deals with the six questions raised by the Seminar's working paper for its First Session. The paper provides answers to these questions from the Islamic perspective specifying what can be considered acceptable and permitted or banned and prohibited basing its arguments on the Islamic doctrine.

The paper then discusses the extent to which Man is authorized to modify, change or enhance human creation. The paper stresses the fact that God has made Man His vicegerent on earth with a view to having him construct and populate it not destroy it. Therefore, it is imperative that Man preserve the ecological equilibrium for life to flourish and for him to thrive.

The paper turns to the ethical status of the embryo and shows that Islamic teachings require that the embryo be protected throughout the stages of its development against any violation of its right to live. No manipulation of the embryo is to be justified without a legal basis and unless it is most necessary.

The paper also discusses human dignity and shows that in Islam it means preserving Man and providing him with

the best care in his dealings with himself as well as with other human beings in all times and places. It also means doing whatever is necessary both materially and morally to make it a fact of human life.

The paper looks into science: its scope, boundaries and status in Islam. The paper maintains that the term in Islam stands for beneficial science which suffers no limits to its scope or activities as long as it applies objective criteria.

The paper concludes by a discussion of the therapeutic use of genetic technologies. The Islamic stance on this issue is that such use is permitted provided it does not affect the genotype or the natural characteristics which distinguish Man and make him preferred over the rest of God's creation.

FIRST DAY
Monday, 6 February 2006

Topic I:
Humanity and Creation/
The Natural World

Third Session
Creation, Control of Nature and Ethics - Islamic & Secular Perspectives

Chairman: **Dr. Mohd. Haitham Al Khayat**

Rapporteur: **Dr. Maher Abdul Kader Ali**

Speakers

- Dr. David King
- Dr. Assaad El-Sahmarani
- Dr. Muzaffar Iqbal

Science, Capitalism and the Control of Nature

David King

Director, Human Genetics Alert
U.K

This paper will examine the way in which science operates in capitalist societies. I will look at the several aspects of the way that science is used to control natural processes for human benefit, using examples from agriculture and human reproduction. I will aim to illustrate how Western science and technology tend to lead to greater regimentation and uniformity of nature, in the interests of greater efficiency of production and the establishment of industrial/free-market systems of production and consumption of commodities. (This tendency is usually defined in our societies as progress.) I will examine current and passed developments in reproductive and genetic technology and show how these imperatives of control of nature were expressed in the 20th century eugenics and in current reproductive technology.

The aim of this discussion is to show that some of the unpalatable implications of human genetics and reproductive technology do not arise merely by chance, but stem from the imperative to control nature that is deeply

embedded in the capitalist model of technological development. It is necessary to understand this in order to fully appreciate what we are dealing with in current debates over reproductive and genetic technologies. I will suggest that conventional bioethical and theological approaches that tend to address these issues without considering the economic and social context of technology will not be able to adequately deal with these technologies, or to help us draw lines to resist possibilities such as cloning and eugenic genetic engineering.

Humanity and Creation/The Natural World

Assaad El-Sahmarani

Lebanon

There is a lot of controversy nowadays; in fact, there has been increasing confusion and turmoil for years with the advances made by genetic engineering. This is mainly attributed to the fact that a number of researchers in this field have overstepped the boundaries established by faith and religious juridical rules concerning human reproduction.

The most controversial reproduction technologies are cloning, test-tube babies, in-vitro fertilization, in addition to attempts to introduce modifications to the genes when the fertilization process is complete.

There is nothing against utilizing science for improving the production of animals and plants both quantitatively and qualitatively. On the contrary, what is actually required is to open up new horizons for research and enhance developments in this direction with the proviso that we observe the no-cruelty rules when dealing with animals as they are subjected by God to the service of mankind. We should also be careful not to violate the ecological balance. Moreover, we must be reasonable in

using our resources, especially energy-producing materials on which the whole economy depends.

As for the human-being, reproduction is governed by fundamental traditions and juridical rules. Faiths may differ about matters relating to justice and equality: some claim that their followers are the chosen people in flagrant discrimination against other peoples; others may involve a closed and oppressive class system or adopt certain concepts that cannot be described as straight and upright. But no matter what the differences are, all faiths agree on one thing, viz, that man has a special status over and above any other creature on earth and that man is endowed with what other creatures are not, the mind.

In Islam, God has favoured man with distinguishing qualities that raise his status and elevate his functional role on earth with regard to his relationships with His Creator, the community he lives in, the whole society and its regulating system of values and principles, and with other creatures and living beings.

God (SWT) says in the Quran:

> "We moulded man into a most noble image." (95:4)

Man has also been granted another distinguishing feature that constitutes a firm basis of how he should be treated and looked upon: he has been honoured by being God's viceroy in this world charged with populating this earth and developing it. He is also responsible for organization, planning, and scientific research to the extent of his

abilities and within limitations set by God for maintaining natural equilibrium. God (SWT) says in the Quran:

> "And when thy Lord said to the angels, 'I am setting in the earth a viceroy"' (2:30)

Honouring man is the third basis in his creation. This is a central basis which determines the proper rules for dealing with him in terms of rights and duties. The concept of honouring here is a comprehensive one extending to every human being because he is a child of Adam's regardless of religion, nationality, or any other affiliation. The Quranic verse is very clear on this:

> "We have honoured the Children of Adam and carried them on land and sea, and provided them with good things, and preferred them greatly over many of those We have created." (17:70)

These characteristics bestowed on man by God are associated with a fourth property, viz, the mind, which is pivotal in the acquisition of knowledge. Therefore, together with making Adam a viceroy on earth, God has also provided him with knowledge.

> "And He taught Adam the names, all of them" (2:31)

Islam has thus opened the door of scientific research wide open for anyone who can do it without any obstacles and boundaries. The researcher is even rewarded for his endeavours whether he succeeds in reaching new findings or not. In one of the prophet's traditions he says: "A ruler who endeavours to perform the duties of his office

properly and succeeds in doing this is rewarded twice; he who endeavours but fails is rewarded once."

However, scientific research on genetic engineering or any other branch must have guidelines when it comes to application and utilization. Such guidelines are based on Islamic juridical rules the purpose of which is concentrated in the preservation of:

- the mind
- the soul
- the offspring
- the faith
- the wealth

Every scientific activity whether in the field of human reproduction or in any other field needs to be governed by legislation that is consonant with the purposes of the Islamic Sharia.

One point remains to be clarified in this introduction. The purpose of Sharia related to the preservation of offspring is closely associated with another institution: the relation between husband and wife. The conjugal bond that ties the two sexes of Adam's children, male and female, should be based on chastity and result in stability that mainly depends on affection and compassion. Sexual consummation alone does not suffice to be the objective of marriage. Rather, marriage should serve as the solid foundation for the central social cell: the family. Therefore, husband-wife relationship must abide by the juridical rules. So must any matter relating to human reproduction which must be the outcome of sound marital relations as parents

are the source of the chromosomes that go into the making of the foetus.

There is nothing against resorting to science when there is an obstacle in the way of reproduction, provided that the elements for the formation of the embryo come from its parents who are bound together with legal marriage. Sticking to these rules is essential for building up a network of social relations the strength of which is measured by how strong kinship is. Besides, commitment to these rules is equally important in matters relating to marriage, inheritance and all other affairs affecting people's interests and dealings. Such relations need a set of regulating values. The kind of co-operation required of everyone, admitting the need for variation, is that which assures keeping intact the two central characteristics of man: being God's viceroy on earth and being honoured by God.

Islamic Perspectives on God, Humanity and *Nature*

Muzaffar Iqbal

Center for Islam and Science
Canada

This paper explores, from an Islamic perspective, the relationships which exist between God, humanity, and the natural world. Seen from the Qur'anic perspective, all revelation-based religions explain these relationships in the same manner: God-the Creator and the Originator of all that exists-created the universe and all that exists in it for a pre-fixed time and for a purpose. He created Adam, the first human being, from clay, infused His Spirit in him, honored him by teaching names of all things and presented him for the adoration of angels. All but one of the angles prostrated before Adam. Iblis, the Jinn who chose not to follow the command of his Creator was cast out of heavens. He vowed to misguide Adam and his partner and succeeded in seducing them to disobey the command of the Creator and eat from the forbidden tree. This resulted in their expulsion from the heaven. This coming down, hubut, of Adam and his partner began human history on earth which had been prepared for their arrival in a manner that is in itself a sign of the Creator. According

the Qur'an, all that exists in the universe are signs, ayat, which point to the omnipotent Creator of all things. These signs are also sacred in the sense that their existence is neither accidental, nor a result of random chances; rather, every existent entity is uniquely created and has a specific function to perform in the overall scheme of things.

According to the Qur'an, all existing things exist because of God and due to His Will and, therefore, they are much more than mere biological or existential entities-they have a sacred aspect. This understanding of existence is fundamental to any exploration of issues which have arisen due to new scientific and technological developments in biology and other sciences. This is so because, in the final analysis, these questions are related to fundamental concepts about human beings and the natural world. Thus, whether it is the ethical concerns about the integrity of species, or questions about the status of embryo and foetus, or the moral issues related to human dignity-all require a fundamental framework of inquiry based on certain primary concepts about the origin and end of all things. In Islam, this framework is provided by the Qur'an which solves the problem of methodology for the faithful by positing the entire created world as a Sign, ayah, of Allah. This uniformity and its underlying ontological premises allow us to explore all ethical and moral issues arising out of new developments in science and technology within a framework of inquiry that is consistent, systematic, and uniquely anchored in revelation. More than anything else, it is our fundamental understanding of the nature of human beings-the species undertaking the ex-

ploration-that is important in this inquiry. Therefore, this paper begins with a brief outline of the Qur'anic concept of humanity and its relationship with the Creator and then explores the relationship between humanity and the rest of the creation. It contrasts this worldview with secular worldview which takes the theory of evolution as a well-established scientific fact. The paper examines, in a broad sweep, some of the Muslim responses to the theory of evolution. In the process of this inquiry, certain other issues, such as the status of embryo and foetus and the questions regarding the dignity of the humanity, are also explored.

SECOND DAY
Tuesday, 7 February 2006

Topic I
Humanity and Creation/ The Natural World

Fourth Session
Human Genetics and Reproductive Technology and Surrogate Uterus - Islamic Perspective

Chairman: **Dr. Azeel Al-Nashmi**

Rapporteur: **Dr. Mohamed Abu baker Samman**

Speakers

- Dr. Abdul Rahman Salama Refai
- Dr. Abulfadl Mohsin Ebrahim

Human Genetics and Reproduction from the View Point of the Three religions

Abdul Rahman Salama Refai
Professor of Hadith
Al Azhar University
Egypt

In this paper, I have presented the following:

1 - The Islamic approach to the relationship between humans and the components of this universe: man, animal, plant and natural environment, citing brief quotations from the Quran and the Hadith.

2 - I have referred to the fact that God has molded Man in the most noble image, pointing out the attributes with which he is dignified and distinguished from all other creation. Besides being molded in the most noble image, Man has been endowed with knowledge about this universe. Some human beings are made by God to be prophets, righteous, philosophers and scientists.

3 - I have dealt with the attempts made by geneticists to enhance certain embryonic features. I have cited adequate juridical rulings, incidents, and complications resulting from biotechnologies to prove that research in such perilous areas should be discouraged

as it contravenes the tenet of fate and divine decree which is one of the six pillars of faith. Moreover, Islamic Shari'a has ordered against making any internal or external changes in God's creation, and explained that whatever form the human embryo may take: male or female; externally or internally perfected or defected is the ultimate jurisdiction of God the omnipotent and the omniscient. I have given several examples from the Quran of how God's wisdom is manifested in His creation, some of which maybe viewed by people as defected or impaired because they do not access the overall truth.

4 - In a certain section I have expounded how God, the Knowing and the Kind watches over the human embryo once it gets implanted in the uterus. Then, all subsequent phases of embryonic development take place in accordance with God's will and wisdom. Quranic verses and Hadith are quoted as evidence of the fact that every creation of God has its underlying reason, and that God's choice is all the best. Modern medicine is always shown to be compatible with the Hadith.

5 - I have explained the verses of the Quranic sura "Man" which states that God the almighty has created man from gametes comprising chromosomes which carry the hereditary factors (genes). I have enumerated the points of relevance in this sura to Genetics. I have also referred to what the prophet (PBUH) said about the quantum leap in genetic development and

that it takes place within the bounds of the genetic natural law. This fact had to wait until our modern age to be scientifically revealed.

6 - I have barely touched upon the areas of gametes and stem cells which witness intensive biochemical research. The objective was to compare Quranic verses as well as Hadith relevant to these areas and the researchers' endeavors to design the genotype of embryos.

7 - I have set aside a special section for the human embryo: its rights and status in the Islamic Shari'a. The quoted verses and Hadith expound the rights of embryos to have pure, unmixed descent attained through complying with the juridical rules concerning matrimony, the legally described period of waiting for the divorced or widowed before remarrying, and women in captivity. The embryo is also entitled to a safe life during its uterine phases of development. That is why a mother is licensed by the Shari'a not to fast in Ramadan.

I have presented the Hadiths that stipulate the prohibition of abortion even in the case of a pregnancy resulting from fornication. I have shown for the first time that the prohibition of abortion applies from the moment of fertilization to the time of birth. The prophet (PBUH) has imposed blood-money for aborting a pregnancy by mistake without inquiring about the pregnancy duration, which proves that abortion is impermissible from the time of ascertaining concep-

tion through indicating signs, tests, and analyses. It is also impermissible whether this conception results from legal marriage or fornication. The prophet (PBUH) deferred the legal punishment of an adulteress until she gave birth to safeguard the fetus, then again until she completed the nursing period to safeguard the baby. The Islamic jurists are agreed that deliberate abortion entails punishing the culprit in reprisal for his crime.

The rights of the newly born include registering it in the name of the husband who accuses his wife of adultery even if she does not deny. This is meant to preserve the baby's decent, upbringing and social life.

I have also shown that the embryo should not be tampered with in the form of changing its sex or genetic characteristics. Who knows?, a blind may be happy with his disability and a poor man may be satisfied with his poverty and I have supplied examples.

8 - Another section has been allotted to discussing science and its complications. Certain problems related to science are dealt with such as weapons of mass destruction: nuclear, chemical and biological. These have seriously damaged the universal environment. Even drugs which are meant to cure diseases have not been free of adverse effects on human vital organs such as the liver, the kidneys, the heart, the brain, the bones and the blood.

I have noted that one of the principles of science is that what is new supersedes what is old; as the old is

proven to be no longer right or because of its defects and shortfalls For this reason I have advised against working on fundamentals in human creation such as stem cells and gametes. I have said that if researches are left to their own devices in this area, science maybe off to uncontrollable horizons, exactly as what happened in the domain of the nuclear, chemical and biological weapons. This is more so as these matters cannot be closely monitored, inspected or controlled. We remind ourselves here of the mad cow disease (BSE) which is caused by feeding cows on fodder with unnatural ingredients; and AIDS which is caused by unnatural and illegal sexual activities, among other things that were not predicted by scientists who may have approved of things that turned out to be so catastrophic.

9 - There is a chapter on the status of science in the heavenly religions revealed from Adam up till prophet Mohamed (PBUH). I have explained that for science, like for anything else in life, Shari'a has specific principles and regulations which are designed to make it a useful means of reparation and reconstruction while preventing it from being harmful or destructive. I have said that scientific research often sets off into uncharted areas intent to find out the unknown without any restraining ethical guidelines. The inevitable result is what we are witnessing in our age: mass killings by blind and dumb weapons shot from planes, warships and rocket-launching bases at everything and everybody in this world.

10- I have said that it may be permissible to use umbilical cord cells of a newly born baby or a discarded fetus of an inevitable abortion if such cells could cure disorders such as heart diseases, diabetes, leukemia, etc. when they are injected into the heart, pancreas or marrow.

11- I have also referred to the necessity of setting down a constitution for modern medical research and practice that are meant to develop the area of human genetics. Each pitfall along the way should be elucidated in terms of the initial procedures and the purpose it was meant to serve. There must be an extensive committee membered by specialists in medicine, anatomy, laboratory work and religious scholars to look into such matters case by case, then to come to a conclusion about permitting or prohibiting the activity. This should be done by analogy with constitutions for pharmaceuticals and treatments. There is also the analogous Arabic Language Academy and other similar scientific academies.

SURROGACY: AN ISLAMIC ETHICO-LEGAL AND SOCIAL PERSPECTIVE

Abulfadl Mohsin Ebrahim
Professor of Islamic Studies
University of KwaZulu-Natal
Durban, South Africa

Since the 1970s, breakthroughs made in the field of assisted reproductive technologies (ART) have given infertile couples new hope and the chance to have children. One such method has been the combination of donor insemination (DI) along with surrogate mother arrangements. Surrogacy involves a woman bearing the child of another woman who is not in a position to bear a child due to, for example, failure of the wife to ovulate (anovulation) or due to the fact that she does not have a uterus. In that case, the sperm of the husband would be used to fertilize the egg of surrogate mother in vitro and the child that comes into being would have the genetic complement of the husband and the surrogate mother and not that of his wife. Such an attempt to manipulate pregnancy in the laboratory is generally a manipulation which is devoid of any act of love between the spouses and gives rises to a host of ethico-legal and social concerns. This paper attempts to address these concerns from an Islamic religious perspective.

SECOND DAY
Tuesday, 7 February 2006

Topic II
Genetic, Reproductive Technologies and the Family

Fifth Session
Philosophy of Genetic and Human Reproductive Technology - Islamic, Christian and Secular Perspectives

Chairman: **Dr. Abdul Rahman A. Al-Awadi**

Rapporteur: **Dr. Ali Yousuf Al-Saif**

Speakers

- Dr. Lisa Soleymani Lehmann
- Dr. Mounir A.M.S. Farag
- Sheikh Mohd. Mokhtar Al-Salami

Pre-Implantation Genetic Diagnosis (PGD)

Lisa Soleymani Lehmann

Director, Center for Bioethics Brigham and Women's Hospital
Harvard Medical School
U.S.A.

Pre-implantation genetic diagnosis is a technique to genetically test embryos created in vitro prior to implantation in a uterus. The ethical implications of this technology are dependent on the attitude different religions have toward the status of an embryo and the broader consequences of implementing this technique. I shall discuss the medical and non medical circumstances under which PGD is ethically justifiable. I shall also focus on PGD for selection of sex for non medical reasons and argue that such a practice is ethically justifiable. Despite this conclusion, some societies may wish to regulate the practice so as to prevent a systematic social policy that favors one gender.

Ethical Problems of Prenatal and Pre-Implantation Genetic Diagnosis

Mounir A.M.S. Farag

Member of the Pontifical Academy For Life
Holy See - Vatican

Session 2:
Genetics, Reproductive Technologies and the Family

Topic 4: Is it appropriate for parents to use genetic tests before birth to choose whether a particular child should be born? Many disabled people's organizations argue that prenatal selection is a form of eugenic discrimination against them, which is based on an assumption that their lives are of lesser value. Is this a valid argument or is it acceptable to use prenatal selection to prevent the birth of children with severe impairments?

If selection is allowed, is there a difference in using genetic tests to identify a foetus or embryo that carries a high risk of severe impairment and using tests to select a child who has desired characteristics eg. Gender? How do we draw the line between severe and less disabling conditions? Is it appropriate to select children using PGD to be tissue donors?

ABSTRACT

The ever-expanding knowledge of intrauterine life and the development of instruments granting access to it make it possible nowadays to diagnose prenatal life, thus opening the way for ever more timely and effective therapeutic interventions

Prenatal diagnosis reflects the moral goodness of every diagnostic intervention. At the same time, however, it presents its own ethical problems, connected with the diagnostic risk and the purpose of its being requested and practiced.

From an ethical point of view, prenatal genetic diagnosis (PNGD) and pre-implantation genetic diagnosis (PIGD) are situated in a very confliction, debate and even opposition.

In the presentation some Topics are to be highlighted such as:

I] Prenatal and Pre-Implantation Genetic Diagnostic Tools:

Presenting briefly those tools which are currently being used for the prenatal and pre implantation evaluation of genetic abnormalities. We'll mention the of ultrasound, amniocentesis, chorionic villous sampling, the evaluation of serum markers such as alpha-fetoprotein, the Triple Test, percutaneous umbilical blood sampling (PUBS), along with fetal skin biopsy and the pre implantation diagnosis of genetic disease.

II] Ethical and Moral Considerations:

Over the last 35 years, we have moved, in prenatal diagnosis, from making a diagnosis for the purposes of assisting the patient (in this case the fetus), to making a diagnosis so that the patient can be eliminated. This shift has already taken place and to a great extent, has taken a strong hold in medical practice.

III] THE MEDICAL ETHICAL MEANING of PNGD

When doctors proclaim, at the time of being admitted as members of the medical profession, the Geneva Declaration of the World Medical Association as their pledge, they promise that they will not permit that considerations of age, disease or disability intervene between their duty and their patients.

IV] THE SPECIAL ETHICAL FEATURES RAISED BY GENETIC TESTS

Number of factors inherent in genetics that should heighten our sensitivity to the human values involved. Murray and Borkin [11] mention seven factors.

V] Experiences:

In our St. Joseph Institute counseling experience. We have to clarify that every child is conceived for a particular reason and purpose and is unique.

In Conclusion:

The Beginning of life and birth: New Human Individual uniqueness

Prenatal Diagnosis: Evaluation of the risk factors

Licit diagnosis: proportionate risk

Diagnosis contrary to the moral law

Connection between Prenatal diagnosis and Abortion

Experimentation on Embryos and Human fetuses absolutely forbidden.

Prenatal diagnosis for Therapeutic criteria only

Medical - Ethical problems in PNGD & PIGD

Evangelium vitae Encyclical Document 1995:

The late Pope John Paul II qualifies prenatal diagnosis as a complex situation which demands an accurate and systematic moral judgment.

Human Reproduction: Current Problems

Sheikh Mohd. Mohktar Al-Salami

Mofti of Tunisian Republic
First Ministry
Tunisia

Man's mission in this world is to live up to his role as God's vicegerent in this vast universe. It is his responsibility to develop the potentials of God's creation on this earth and in the whole universe. Using the power of his mind and dexterity of his hand, man should ceaselessly explore his surroundings and find out about whatsoever comes under his scrutiny. Living beings and objects will duly reveal their secrets which open up for him new horizons of knowledge and facts that were once out of his sight and hearing. Thus, the human mind never stops at any discovery or invention. Each discovery leads up to another and each invention forms a basis on which another is built, and so on and so forth. This is verified by the Quran:

> "You have been given of knowledge nothing except a little" (Israa:85)

Realizing that no matter how much we attain we actually know only a little is a big incentive to carry on with scientific research and feel humble at the same time.

Man is the only creature inherently disposed to acquisition of knowledge. The more he knows, the thirstier he becomes for more knowledge. That natural tendency towards knowledge is nothing new. It goes way back in man's history to the days of Adam.

When Adam was in paradise, God lavished on him everything that satisfied his biological needs.

God (SWT) says:

> "It is assuredly given to thee neither to hunger therein nor to go naked,
>
> neither to thirst therein, nor to suffer the sun." (Taha: 118-119)

Nevertheless, his ravenous appetite for knowledge was the inlet through which Satan could get to him and make him forget God's command. So, he proceeded to the tree (of knowledge) he was told not to eat from. Love of knowledge is thus inborn in Man. Yet, knowledge can not flourish unless he enjoys freedom of research which is indispensable not only for scientific achievement but for man's very existence. On the other hand, there are systems underlying societies, values established through many and long experiences along human history, and divinely revealed prescriptions and proscriptions concerning areas of good and evil. All these combine to set limits to the freedom of man's mind. They are the red lines he should not go beyond, because his safety and happiness resides in them.

Now, as chaos disrupts production, it can also be an iron curtain separating man from the ends he aspires to

reach. So, in matters of research man must be sensible. He must work within the guiding light of ethical values which have evolved from long experiences and have been called for by religions. Stepping out of this light is stepping into a dark labyrinth where science turns into an evil thing that could be destructive to man kind and to the whole universe. There are many indications that this could be happening now in many fields of natural sciences: in physics, chemistry, biology, medicine, etc.

In physics for instance, science has discovered the secrets of the atomic power. How has man employed this enormous energy? He used it in killing masses of people indiscriminately and deforming thousands of other victims mercilessly bringing grief into the hearts of millions. What is more, the radio-active fall-out has contaminated the environment and destroyed life in any of its forms. In the mean time, atomic energy has been put to therapeutic uses besides being used to generate electric power. The point is, man's achievements could be used for good as well as for evil purposes. And the question is: what have we got to opt for the former rather than the latter? The answer is: Divine guidance and moral values. What is said about the atomic power applies to other fields. In biology, research has come up with vaccines to protect man from diseases. But there is also what is called biological warfare where microbiological weapons are being manufactured to wipe up whole populations.

Medicine has not been an exception. Many discoveries in this field have realized the expected results of curing

diseases and alleviating pain. But some has also proved to be heedless of ethical values and God's injunctions, and therefore detrimental to societies.

Human Reproduction

There is a fundamental fact: creation is exclusive to God. No one has the ability to create anything.

God (SWT) says:

> "O man, a similitude is struck, so give your ear to it. Surely those upon whom you call, apart from God, shall never create a fly though they banded together to do it" (Al Hajj: 73)

This verse sends a strong message to those who are deceived by some misleading phenomena. The whole of mankind, banded or otherwise, cannot create any living material,. Life is life, whether found in the most infinitesimal being or in the greatest. Now, if man is admittedly unable to create life, it logically follows that he should desist from manipulating creatures of God unless he does so strictly within the laws set by their Creator.

God has sanctioned that human procreation be the outcome of two drives: the sex drive and the instinct for survival. The former underlies the natural bond between husband and wife as it involves pleasure and noble emotions. The latter satisfies the need for extended life in the offspring as the zygote is made up of chromosomes half of which come from the male and the other half from the female.

In cases where a married couple can not reproduce for

one reason or another science has advanced to the point where it can assist with this process. If the problem lies in the sperm's inability to reach the uterus and fertilize the ovule, science has facilitated this process through in vitro fertilization. A sperm that is too lethargic to reach the ovule inside the uterus can be assisted technologically to do so. There would be nothing against such technological means that progress in medical science has achieved as long as they keep within the lines specified by the jurist and accepted by the ethicists. But a technology will definitely be unacceptable if it aims at promoting reproduction through one only of the two parties to the process sanctioned by God for procreation of life.

Also prohibited are cases where the sperm or ovule is donated, or the fertilized egg is implanted in a surrogate uterus or in the uterus of a divorced or widowed wife. Violation of ethical values are apparent in all the above cases as the facts become incompatible with the documentation of these facts. If the sperm is donated, the husband's claim that the born baby is his child is a lie which amounts to adoption of such a baby, even worse. Likewise, if the ovule is donated, the wife's similar claim is equally a lie. If the fertilized egg is implanted into a surrogate uterus, the pregnant woman will have developed physical and emotional relationships with the born baby who has been feeding on her blood. Taking the baby away from her would inflict a psychological chock on her. Fertilization of the ovum after the concerned couples have been separated is bringing about results that are not based on true and appropriate premises. All such prohibited acts are not

justifiable because man's desires have no real value if they are based on or may lead to corruption.

In vitro fertilization involves a certain complication. As the process requires enhancement of ovulation, several ova are produced by the treated wife. These are all fertilized but only some of them are implanted into the uterus. The problem is what to do with this surplus. In the view of some, fertilization should be limited to the number required; any leftovers should be discarded. Others believe that the surplus should be frozen for future use if pregnancy fails or if the parents desire another child. Despite all precautions, errors do occur. According to statistics, errors in England amount to 10%.

Another method of reproduction is cloning which was successful first with invertebrates then with sheep and monkeys. This was followed by experimenting with human cells. In 1993, a human somatic cell developed in a cloning process until it reached the 48-division stage before it was destroyed. In 1996, Dolly cloned from its mother was born. In 2002, the Riles claimed that they had successfully cloned

a human-being. The news gave rise to inflamed controversies between those who supported the technology and others who vehemently rejected it.

I believe that cloning is detrimental to human dignity and constitutes a crime against humanity. Cloning breeds the following problems

- The position of the cloned person in the configuration of the human relations is confused and ambiguous.

- As the somatic cell used in cloning is identical with the cells of the donor, the cloned baby must be his/her brother or sister with an identical genome that originally derives from the donor's parents. In this case, will the born baby have identical rights as well? Think of the consequences of such a state of affairs when it comes to matters relating to marriage or inheritance. On the other hand, cloning experiments on animals have shown that the born baby looks much older that its real age. The implications for humans are pretty serious.

Tampering with the Cell's Genotype

Advances achieved by genetic engineering have opened up vast possibilities for geneticists, specially after the Genome Project has come to fruition. It has become possible now to design babies with selected physical traits such as color of the hair and eyes, height, etc. and even the gender of the baby. This is totally unacceptable. It contravenes human dignity as adults impose traits on a baby at a time when it does not yet have the right of free choice. This is tantamount to dealing with such a baby as if it was a commodity and not a human being. Changing the gender of the baby may also disrupt the balanced ratio of males to females.

As for manipulating the human genome for therapeutic purposes when diagnosis proves that certain disease-causing genes need to be dealt with, Islam is all for improving health conditions. Islam only cautions against abuse of such procedures when genetic diagnosis catches public

imagination and demand rises on it without any apparent necessity.

The issues presented briefly in this abstract will be elucidated in detail in the full text of the paper.

Before bringing this abstract to and end I would like to call attention to a serious problem that has not been sufficiently noticed although it threatens the whole of mankind. I am referring to the issue of aging societies which has already started in the developed countries. Japan had anticipated that in 2007 the birth rate will be lower than the death rate. This year it has declared that the countdown has already started and that the Japanese population will be reduced by 50% before the end of the century. The same predictions apply to Europe.

As medicine has been able to overcome many diseases, life expectation has greatly increased. The number of senior citizens keeps growing. The young generation who constitute the working force will have to shoulder the expanding responsibility of sustaining both the older and the younger citizens. This imbalance will have its serious effect on humanity as a whole. It may be objected that the world population has doubled during the past century. This is true, but then the number of young people who could be active and productive was much greater than the number of senior citizens as longevity was much shorter at that time.

SECOND DAY
Tuesday, 7 February 2006

Topic II:
Genetic, Reproductive Technologies and the Family

Sixth Session
Islamic and Professional Perspectives of the Ethics Issues of Reproductive Technology

Chairman: **Dr. Hussein Gezairy**

Rapporteur: **Dr. Habibah Al-Chaabouni**

Speakers

- Dr. Gamal I. Serour
- Sheikh Mohamed Ali Al-Taskheeri
- Dr. Saddiqa Al-Awadi

Islamic perspectives of Ethical Issues in ART

Gamal I. Serour

Professor of OB/GYN Al Azhar University,
Chairman, ERC of the Royal College,
Egypt

Different modalities of treatment of infertility before Assisted Reproductive Technology (ART) did not raise any ethical concern because they did not separate reproduction from sexual intercourse. The introduction of ART brought in several ethical issues.

Guidelines and Legislations were issued by different countries to regulate the practices of ART. These guidelines and legislations varied according to the ethical percepts of different societies. ART also raised gender issues including; ART in the postmenopause, ART for male factor infertility, and sex selection. Different guidelines and legislation regulating ART were issued in different countries. The paper critically analyses these issues with special emphasis on Muslim perspectives.

The paper concludes by calling on responsible authorities and organizations in different countries to be aware of and deal with these ethical issues when they formulate their guidelines and legislations regulating ART practices.

Physicians offering ART services should properly counsel their patients and clarify to the couple various ethical issues before scheduling them in ART programs. If a physician has a conscientious objection to offering a modality of ART treatment necessary for a couple, it becomes his/her duty to refer the couple to other physicians who do not object.

Assisted Reproductive Technologies

Sheikh Mohamed Ali Al-Taskheeri

Iran

The paper deals with different types of cloning: those using somatic cells; animal cloning or cloning of plants.

The paper also discusses In Vitro Fertilization (IVF) involving married couples, or using donated sperms, ovules or uteri. The surrogate mother could be a co-wife or any other woman.

Further, there is a detailed discussion of using genetic technologies for sex selection or genetic enhancement whether in humans, animals or plants. Each of these problems is discussed in terms of its ethical and religious aspects as viewed by Islam.

Human Genetics and Reproductive Technologies: How They Reflect on the Family

Saddiqa Al-Awadi

Kuwait

There has been a tremendous progress in Human Genetics from the days of Aristotle who attempted to explain embryonic formation up to the days of William Harvy who empirically proved that the embryo passes through sequential stages of formation. We read about these stages in the Quran:

> "O men, if you are in doubt as to the Resurrection, surely We created you of dust, then of a sperm-drop, then of a blood clot, then of a lump of flesh, formed and unformed that we may make clear to you. And We establish in the wombs what We will" (Al-Hajj: 5)

It was Harvy's empirical evidence that made him recognize and admit this Quranic text. The quantum leap came with the discovery of the structure of DNA. This nuclear acid has been the subject of research in molecular genetics which opened the door to wider knowledge about genetic pathogens and about the genes responsible for giving a living being its outer and inner characteristics. It has also been possible to diagnose several genetic diseases.

These developments raise a lot of religious and ethical questions concerning the new methods of treatment and the vast possibilities of the new technologies in overcoming many difficulties and solving many problems that plague infertile couples.

Reproductive genetics is directly involved in the principle of Being, ie. Man's capacity to survive through procreation.

With further advances in genetic and reproductive technologies it is expected that more ethical and legal problems will emerge. There is a wide range of views and attitudes about these technologies. Some accept and encourage them, while others are vehemently against them preferring to leave such matters to the natural course of events.

In spite of the heated debate between those opposing views, genetic and reproductive technologies raise much hope for new methods of treatments of genetic diseases and infertility which could go a long way towards alleviating the pains of people suffering from these problems. Yet, going too far with these technologies could reflect badly on these new modalities and give rise to social problems. What this indicates is that we need to set down a series of clear steps that will decisively distinguish between what is to be allowed and what should be prohibited.

The paper also discusses various practices such as the donation of sperms, ovules and uteri. Then it turns to a detailed study of modern reproductive technologies such as In Vitro Fertilization (IVF), Preimplantation Genetic Di-

agnoses (PGD), human cloning spermatozoal genetic designing and the introduction of an outsider chromosome into the genome of an embryo.

The paper deals with how these new technologies reflect on the family and the society.

SECOND DAY
Tuesday, 7 February 2006

Topic II
Genetic, Reproductive Technologies and the Family

Seventh Session
Genetics and Reproductive Technology - Islamic, Christian and Professional Perspectives

Chairman: **Counsellor Abdullah Al-Essa**

Rapporteur: **Dr. Hamid Ahmed**

Speakers

- Dr. Gerald Winslow
- Dr. Mohamed Ali Al-Bar
- Dr. Abdul Sattar Abu-Ghuddah

Christian Principles for Assisted Human Reproduction

Gerald R. Winslow

Professor of Ethics
Loma Linda University
U.S.A.

From the time of ancient human stories to the present, married couples, desiring to have children of their own but finding themselves to be infertile, have sought help. In biblical times, the sadness of infertility was an occasion to call upon the Master of the Universe for the miraculous blessing of children (e.g. Psalm 113:9). Only in recent centuries, and especially in the past three decades, has medical science offered an array of assisted reproductive technologies (ART) to aid infertile couples. Reports of successful artificial insemination (AI) date back to the end of the 18th century in Europe. By the 20th century, this practice, either using the sperm of a donor (AID) or, less frequently, that of the husband (AIH) had become common in the treatment of infertility in many of the industrialized countries of the world. More recently, beginning in 1978 in England with the first successful birth following in vitro fertilization (IVF), new techniques for ART have been developed and used with steadily increasing rates of success. In addition to IVF, other practices such as the use of egg donors, surrogate gestational

mothers, and the prospect of asexual human reproduction, or "cloning," have heightened a sense of the ethical problems that human beings face as the power of medical technology increases in the area of human procreation. Such interventions raise particularly serious ethical questions for those who seek to live according to the will of God. In this paper, I present seven ethical principles that are important for ART from a Christian perspective. It will be obvious, of course, even to those not generally acquainted with the various divisions of Christianity, that there is no single Christian ethic for ART. The Roman Catholic Church, in its pronouncements such as *Donum Vitae*, has largely rejected all forms of ART as unacceptable ruptures of the unitive and procreative functions of married human sexuality. Protestant Christians, on the other hand, have tended to accept some forms of ART, as representing compassionate responses to the anguish many infertile couples feel, while raising moral objections to other forms of ART. The fact that Christianity is not unified in its response to ART, however, should not lead to the conclusion that there are no areas of broad agreement. There is almost total concurrence, for example, in the ethical rejection of human reproductive cloning. On the other hand, there is little or no Christian objection to the use of simple, "natural" remedies that may assist married couples in overcoming infertility. The paper sets forth ethical principles, rooted in biblical faith, for the selective use of ART. These principles stress the importance of family unity, protection of vulnerable human life, respect for human dignity, faithful stewardship of resources, honesty, and social justice.

Human Genetics and Reproductive technologies: an Islamic Perspective

Mohamed Ali Al-Bar

Physician Consultant Islamic Medicine
Kingdom of Saudi Arabia

The ethical problems raised by recent advances in medicine are the domain of the ethicists, medical philosophers, lawyers, parliament members and religious leaders as well as physicians involved in day to day dilemmas. Islam is not just a religion; it is a code of life that encompasses the secular with the spiritual; the mundane with the celestial through its comprehensive approach. The Muslim clergy (in fact there are no real clergy in Islam) are not only spiritual leaders, they are also jurists and ethicists.

The new medical modalities and techniques are truly unprecedented, and hence make it difficult for Muslim jurists to issue juridical rules about them. However, these jurists have been constantly active during the past few years. They have held several seminars to which medical professionals were invited to discuss important issues such as brain death, human organ transplantation, new methods of human procreation, abortion and euthanasia. These seminars have resulted in a number of resolutions that

could underlie the formulation of ethical guidelines and rules to regulate medical research and applications in a world that witnesses an increasing trend of medical technological innovations.

It is vital that we understand how jurists reach their rulings concerning these thorny, appalling and highly controversial issues. Islamic jurisprudence is based on two pillars:

1 - The fundamentals.

2 - The branches, which involve the actual juridical rules issued by various schools on different aspects of life and worships.

The jurist reaches his rulings through a careful study of the Holy Quran and Sunna which includes the sayings and speeches of the prophet Mohamed (PBUH), his deeds and his approvals. The behavior of the prophet (PBUH) is the model which every Muslim aspires to emulate.

If the jurist fails to reach the desired rule through his painstaking study of the Quran and Sunna his only resort is to analogy on the basis of which he may reassuredly reach an individual judgement. He is also allowed to use other sources such as "Masaleh Mursala" which simply means that he should take into account public interest provided it does not conflict with any text in the Quran or Sunna.

Followers of the Hanafi school of jurisprudence have a similar source which they call "Istihsan", that is, to seek the best solution which is in line with public interest. "Ijma"' is the judgement unanimously reached by all

Muslim jurists all over the world concerning a particular issue. If this is difficult, the second best is the agreement by the majority of jurists on a certain opinion. This is what actually happened with all the juridical rules ratified by the above-mentioned jurisprudence seminars and conferences.

The paper then turns to specifying the objectives of the Islamic teachings relating to the purpose of medicine and patients' attempts to get cured. Other points of interest include Man's value, genetic diseases and Assisted Reproductive Technologies (ART), DNA fingerprint, cloning and stem cells.

The Islamic stance on Human Genetics and Reproductive Technologies

Abdul Sattar Abu-Ghuddah

Kingdom of Saudi Arabia

Praise be to Allah, and peace be upon His select servants He sent to guide mankind to the right way equipped with Holy Scriptures that convey the word of God which, if heeded, can protect the human mind from going astray. The Revealed Books furnish Man with established criteria for sound thoughts and appropriate behaviour, and provide a solid ground for the stability of societies.

Such established criteria abound in the Quran, the last of the Revealed Books, and Sunna, which provides a general interpretation of the Quran and supplements its precepts. These two fundamental sources of Islamic jurisprudence involve indications to scientific facts in various fields including human genetics and reproduction in the most general terms as was necessitated by the limited and broad nature of the data available in those days before the incredible discoveries achieved by modern science. These indications are meant to realize two things:

First, They stand as further proof of the wonderous nature of the Quran.

Secondly, they exhort Man to contemplate the universe and look into himself to see how he was created and what pristine systems go into the making of his body.

The subject of human genetics is so far-reaching that it takes only a specialist to delve deeply into it. But as one cannot properly judge a thing without envisaging it, the paper has to touch upon this subject as a necessary step towards reaching relevant juridical values.

This paper and the likes of it come in response to a dire need for keeping abreast of the current developments in genetic engineering research and applications by contributing the required rulings and explanations of the legal impact of these applications. The jurists' efforts in this respect has become indispensable to ward off the risks posed to Islamic communities by this unprecedented open-ended progress of science and unrestrained media coverage.

The paper ends by expounding the Islamic Sharia's concern for the preservation of the offspring. It deals with such contentious issues as Assisted Reproductive Technologies (ART); manipulation of embryonic genes] parents' right to have the genetic characteristics of their babies changed; producing babies through reproductive technologies and the impact this would have on the relations binding parent to child; preimplantation genetic diagnosis (PGD) for sex selection or for getting a healthy baby unaffected by genetic diseases. The paper provides several resolutions and fatwas issued by various academies of jurisprudence.

THIRD DAY
Wednesday, 8 February 2006

Topic II
Genetic, Reproductive Technologies and the Family

Eighth Session
Reproductive Technology, DNA and Cloning - Islamic and Professional Perspectives

Chairman: **Dr. Ted Peters**

Rapporteur: **Dr. Mohamed Ali Al-Bar**

Speakers

- Dr. Malik Badri
- Dr. Aida Al-Aqeel
- Dr. rer.nat. Abd-ElAziem Farouk Gad

The neglected contributions of Islamic civilization to genetics and reproductive biology

Malik Badri

Malaysia

In writing about the historical developments of any aspect of science such as reproductive biology and the influence of heredity and environment, western historians jump from the works of ancient Greeks all the way to the European Renaissance and Enlightenment. This biased leap would at times cause them to ignore more than 15 centuries of scientific developments in other civilizations.

Also, most modern psychologists believe that the controversy over the relative influences of environment versus heredity is a contemporary issue that surfaced after the current emergence of behaviourism, biological psychology, psychiatry, behaviour genetics and similar disciplines. This distorted conviction is due to this above mentioned ignorance about the history of these sciences.

The main aim of the present paper is to bring to light some of the main contributions of the Holy Qur'an, the Blessed Hadith and some of the works of early Muslim scholars and physicians in the field of heredity and

reproductive biology and the comparative influence of heredity versus environment. In doing so, the writer will also give interpretations from the recorded stories in the Qur'an and Hadith about the lives of some Prophets.

Islamic Perspective on Human Cloning, Stem Cell Research and Pre-implantation Genetic Diagnosis (PGD)

Aida I. Al Aqeel

Department of Pediatrics, Riyadh Armed Forces Hospital, Kingdom of Saudi Arabia.

We are at a time of unprecedented increase in knowledge of rapidly changing technology. Such biotechnology especially when it involves human subjects raises complex ethical, legal, social and religious issues. A WHO expert consultation concluded that "genetics advances will only be acceptable if their application is carried out ethically, with due regard to autonomy, justice, education and the beliefs and resources of each nation and community".

Public health authorities are increasingly concerned by the high rate of births with genetic disorders especially in developing countries where Muslims are a majority. Therefore it is imperative to scrutinize the available methods of prevention and management of genetic disorders.

Islam is a religion which encompasses the secular with the spiritual, the mundane with the celestial and hence forms the basis of the ethical, moral and even juridical attitudes and laws towards any problem or situation.

Islamic teachings carry a great deal of instructions for

health promotion and disease prevention including hereditary and genetic disorders, therefore we will discuss how these teachings play an important role in the management and preventive measures.

Stem cells are important therapeutic modalities for many oncological, genetics, chronic disorders; we will discuss our experience in that and how Islamic teachings makes this very promising, research and therapeutic, ethically debatable modality of treatment permissible, and the Islamic views of cloning..

Pre-implantation Genetics Diagnosis (PGD) is a technique that allows the determination of genotype of embryo before implantation. It avoids the difficult decision of whether or not to terminate the pregnancy (Prenatal Diagnosis), our experience that it is an important therapeutic and research preventive measure for many genetics disorders, weather early or late onset disorders.

Contributions of genetic engineering research to understand Islam as believe with facts in Quran and Sunna

Dr. rer.nat. Abd-ElAziem Farouk Gad

Department of Biotechnology Engineering Department
International Islamic University of Malaysia
Malaysia

Human and animal cloning, gene therapy, diagnostic and drug discovery have very positive confirmation and explanation for the description of human creation in different Quranic verses. The creation of everything in our life from pairs have been explained and described from Prof. Zagloul Al Naggar in several articles and his home pages

The molecular evolution of life based on the intermediate adaptor RNA indicates that Allah SAW is the creator and not the nature. The last research in molecular understanding of Sexual reproduction, benefit of sex and even choice of wife and their effect on children genetic performances have shown lot of similarities to Quranic verses and Hadith. The secret for the seed germination without any fertilizer or biofertilizer but only using water have been described very clearly in the Quran. Phytate molecules were the stored secret for the seed germination with

water only. Phytate (inositol hexakisphosphate, IP_6) is a regulator of intracellular signaling, a highly abundant animal antinutrient, and a phosphate stored in plant seeds. The understanding of hydrolysis of this molecule in seeds is shared in the discovery of biofertilizers, animal feed and biopharmaceutical especially anticancer. The last 10 years of genetic engineering including my research in phytate biosynthesis and degradation enzymes confirmed and declared the following facts in the Quran:

1 - DNA is dead genetic material without transformation or be transferred to living host,

2 - The dominant enzymes will be activated in dead seeds by water only

3 - The nutrients secreted from the root of germinated seeds will bring the life in the non fertile earth by activating selectively for soil microorganisms and transform soil from dead to life soil.

"It is Allah who causeth the seed-grain and the date-stone to split and sprout. He causeth the living to issue from the dead, and He is the one to cause the dead to issue from the living. That is Allah. Then how are ye deluded away from the truth?' (Al-An'am 6:95).

"And we send down from the sky rain charted with blessing, and We produce therewith gardens and grain for harvests" (Qaf 50:9).

THIRD DAY
Wednesday, 8 February 2006

Topic III
Social Impacts of Genetic and Reproductive Technologies

Ninth Session
Genetics and Reproductive Technology - Islamic, Jewish and Secular Perspectives

Chairman: **Dr. Mamduh Gabr**

Rapporteur: **Dr. Salah Al-Ateeqi**

Speakers

- Dr. Shahid Athar
- Dr. Vardit Ravitsky
- Dr. Hamid Ahmed

Human Genetic and Reproductive Technologies - A Secular Perspective

Shahid Athar

Department of Endocrinology and Internal Medicine
Indiana University School of Medicine
U.S.A.

Physically and intellectually, man is not the same as he was a million year ago. These "improvements" in humans have come from within over a period of time by the process of adaptation, new learning and out of a need, and not as a result of any outside biotechnical intervention. So, the question is what is the need now? The fine line between what can be done technically and what should be done morally, justifies the role of bio-medical ethics in the area of human genetic technology. What are the relationship between the individual and society and whose interests we the scientists and physicians are to serve needs to be defined. Where does the government fit in between the needs of the individual patient and duties of his or her physician? Are social justice, human dignity and human rights to be considered in genetic modification? While it may be appropriate and desirable to seek treatment for a disease such as infertility, in the quest of making a super

healthy super human, are we embarking on a path of ethnic cleansing of humans of lesser abilities and is it appropriate to discriminate them? In this presentation, such concerns and questions are discussed from a *secular perspective*.

Key words: Human Genetics, ART, Cloning, Ethics.

Reproductive Technologies: Jewish Values and their Impact on Public Policy and Social Structure in Israel

Vardit Ravitsky

Center for Bioethics
University of Pennsylvania
U.S.A.

"Be fruitful and multiply" is a fundamental imperative of the Jewish religion. Female barrenness is a consistent motif in the Bible and the desire for biological offspring is a profound element of Jewish tradition. The perception of infertility as a 'curse' and of fertility as a 'blessing' pervades Jewish culture even today. Furthermore, the genetic component of parenthood is strongly emphasized in Jewish law ("*Halakha*"). Even though in some instances the rabbis acknowledged the social and emotional reality of children being raised by non-genetic parents, the prevalent *Halakhic* position perceives parenthood as a natural given.

These traditions, combined with a host of other historical, cultural, legal and economic factors, strongly impact the Israeli social structure in which community life is centered on reproduction and children. Israel has an explicit pronatalist population policy and a birth rate that

is double the average of most European countries. In addition, it has the highest rate of consumption of reproductive technologies in the world.

Israel's National Health Insurance Law of 1994 covers "infertility diagnosis and therapy" and "artificial fertilization" for the purpose of "bearing a first and second child, for couples who do not have children from their current marriage, and also for a childless woman who wishes to establish a single parent family" as a part of a basic basket of health services. This level of public funding is unparalleled in any other country in the world. Moreover, labor laws compensate working women for absences resulting from infertility treatment.

The legal system also demonstrates a strong bias in favor of reproduction, specifically by declaring as invalid restrictions on access to reproductive technology. In 1997 the Israeli Supreme Court found a screening procedure for single women seeking IVF with donor sperm to be an unlawful restriction on their reproductive freedom and ordered the Minister of Health to guarantee that the procedure is performed "in an equal manner".

Furthermore, in the precedent-setting *Nakhmani* case, an estranged couple that had previously undergone IVF fought over the disposition of the frozen embryos. The woman wanted to implant the embryos in a surrogate to have a genetic child of her own but the hospital refused to release the embryos without the genetic father's consent. Construing the case as a conflict between a woman's 'right to motherhood' and a man's 'right to non-fatherhood', the

Supreme Court ruled after a long process of litigation 7:4 in favor of motherhood thus acknowledging a right, which imposes a correlative duty on the father.

In 1996 Israel was the first country in the world to enact a law to regulate and give legal validity to surrogacy agreements. The law requires approval of all surrogacy agreements by a special statutory committee. The child's status is carefully delineated giving the "intended parents" custody at birth and guaranteeing their status as the "exclusive parents and guardians of the child". The surrogate mother's wish to withdraw from the agreement and/or gain custody require court approval based on a justifying change in circumstance and a reasonable expectation that the child's best interest will not be harmed.

Last but not least, the Ministry of Justice recently admitted requests by widows for posthumous use of their deceased husband's sperm. In 2003, following a series of discussions held at the Ministry of Justice that involved medical, legal, bioethics, and Jewish law experts, the attorney general published guidelines that will generally allow courts to permit the practice.

While the strong pronatalist atmosphere in Israel explains the free and unimpeded access to generous fertility treatment, it also raises serious ethical difficulties. Some bioethicists claim that this cultural atmosphere imbued with pronatalism encourages individuals to over-consume reproductive technologies, creates a 'national obsession' with biological parenthood, and raises questions about the 'indoctrination of women towards motherhood at all

costs'. This issue is emphasized by the fact that in most cases the Israeli healthcare system does not provide support systems for failed treatment or for discussion of alternatives such as adoption or voluntary childlessness, an option that is virtually unheard of in Israel.

Moreover, public funding of fertility treatment raises some difficult questions regarding priority setting in resource allocation, as economic constraints force Israelis to consider the urgency of rationing even basic and life-saving services.

Human Genome: Social and Ethical Implications

Hamid K Ahmed

Halton College
U.K.

The paper divided into the following topics:

- Introduction: Explain the role of Islam and the Qura'n in encouraging the direct empirical observation of the natural phenomenon and also refer to the role of Muslims in contributing to the human civilisation
- Definition of the Human Genome to be understood by general public by breaking down the jargon words into easily understandable common terms and vocabularies.
- The benefit of the project dealt with in regards to Medicine and Pharmaceutical products
- Social, Ethical and Legal implications of the Human Genome in different area are discussed: Historical and Political background to Human Genome; Privacy, Confidentiality and fairness in dealing with genetic information; Reproductive implications; Psychological implications; Philosophical and conceptual implications
- Islamic View on HGP: If we want to offer Islam as an alternative civilisation, where dose Islam stand on these issues? Should Muslim scholars be aware of these

developments in the genomic era? Muslims should have a say on these achievements, and this could be achieved by collaboration between scientists in this field as well as Islamic scholars listening to the scientific facts and then could make an informed decision based on Islam. Some recent views of some scholars will be discussed.

THIRD DAY
Wednesday, 8 February 2006

Topic III
Social Impacts of Genetic and Reproductive Technologies

Tenth Session
A Right to Reproduce, Designing Children and Genetic Counseling - Islamic, Jewish and Secular Perspectives

Chairman: **Dr. Mahmoud Zagzuk**

Rapporteur: **Dr. Aymen Ramadan**

Speakers

- Dr. Aly A. Mishal
- Dr. Michael Broyde
- Dr. Muireann Quigley

Reprogenetics and Genetic Counseling Scientific and Ethical Perspective

Aly A. Mishal

Ex-President of Federation of
Islamic Medical Associations (FIMA)
Jordan

Genetic research and knowledge has grown to unprecedented dimensions in the past decade. The Human Genome Project (HGP) has significant implications in many areas, including reprogenetics.

The traditional prenatal diagnosis of genetic abnormalities was utilized for years to identify genetic, and other disorders, during pregnancy.

The more advanced: Pre-implantation genetic diagnosis (PGD) has been developed to identify genetic diseases in human embryos or pre-embryos prior to transferring to human uterus. Only embryos not affected by certain genetic disorders could be transferred.

Identifications of serious and life threatening genetic disorders, and reaching to clinical decisions as to how to deal with them may not stirr ethical concerns. The major dilemmas arise in situations such as:

1 - Non - pathological conditions, physical or intellectual, or gender selection.

2 - Late-onset genetic disorders, which may appear many years later.

3 - Who has the right to decide on termination or prevention of pregnancies.

4 - Who has the right to inform the patient about the existence of genetic predisposition to certain disorders.

5 - Does the society at large need to undergo genetic screening.

6 - The sensitive issues of privacy and confidentiality of genetic information: How to safeguard against stigmatization and discrimination.

7 - Human rights aspects and the issue of Eugenics.

The paper will address these issues scientifically, and deliniate available Islamic jurisprudence opinion towards each of them.

Designing Children: Modern Genetic Screening Technology and Jewish Law

Michael J. Broyde
Professor of Law
Emory University School of Law
U.S.A.

Pre-implantation Genetic Diagnosis (PGD) - the screening of embryos fertilized in the laboratory (in vitro) to diagnose a genetic disease or condition before being implanted in utero - represents an important new advancement in reproductive genetic technology. This article examines PGD to determine how Jewish law ought to view this recent technological development, both as a matter of technical legality and as a matter of societal values and public policy. The article concludes that the use of PGD for non-trivial reasons should be properly classified as a permissible medical treatment in Jewish law, and perhaps even mandatory in some circumstances. Thus PGD-and indeed all other forms of genetic engineering-when used to advance humanity are without theological problem in the Jewish tradition. The article also briefly considers other genetic technologies on the horizon and attempts a Jewish law analysis of them as well.

A Right to Reproduce: Equality Not Liberty

Muireann Quigley

Institute of Medicine, Law, and Bioethics
University of Manschester
U.K.

The advent of the new reproductive technologies (NRT's) or the assisted reproductive technologies (ART's) has thrust the issue of reproductive liberty into a whole new dimension of debate. In this paper I am not going to discuss the moral rightness or wrongness of this technology but am going to investigate the idea of reproductive liberty itself. I specifically want to discuss the so-called *right* to reproduce as a part of the right to reproductive liberty, which, itself, is usually seen as deriving from a more general right to liberty. It is claimed that certain practices or policies interfere with a person's reproductive liberty. The denial of treatment using NRT's such as *in vitro* fertilisation (IVF) is an example of this supposed interference. In such cases, in addition to a right against interference with reproductive matters, there is purported to be a positive right to procreation or to raise children, and to the assistance required to achieve this.

Conventional candidates for a right to reproduce are justified on the grounds of either overriding interests

(interest theory of rights) or the necessity for protected choices (choice theory of rights). In this paper I reject these arguments, instead putting forward a proposal for a right to reproduce that is vested in the concept of equality of opportunity. I look at the consequences that such a right has on the issue of access to the reproductive technologies. I argue that where people choose to have children they should have an equal right to the 'goods and opportunities' that society has to offer regarding this. Where these 'goods and opportunities' happen to be one of the reproductive technologies then this also applies. Finally I focus on enhancement technologies that are used at the reproductive stage and argue that if and when they become available the 'right to reproduce' also encompasses these.

THIRD DAY
Wednesday, 8 February 2006

Topic III
Social Impacts of Genetic and Reproductive Technologies

Eleventh Session
Cloning, Immortality and Genetic Engineering - Islamic and Secular Perspectives

Chairman: **Dr. Abdel Aziz Saleh**

Rapporteur: **Dr. Abulfadl Mohsin Ebrahim**

Speakers

- Dr. Farhat Moazam
- Dr. Omar Alfi
- Dr. S.M. Mohaghegh Damad

Genetic Engineering, Social Justice, and the Future of Humanity: Confluence of Religious and Secular Concerns

Farhat Moazam

Professor and Chairperson
Center of Biomedical Ethics and Culture, SIUT
Pakistan

Genetic science and related biotechnology can allow better understanding of human diseases, and offer opportunities for finding new ways in which to deal with them. However, recent advances in this rapidly expanding field are leading to ethical and moral concerns many of which are shared by religious scholars that include Muslim *ulema,* and secular bioethicists.

This presentation will begin with a brief overview of the salient features of the technology called somatic cell nuclear transfer (SCNT) or cloning, and the current stance of secular and religious thinkers on the issue of reproductive and therapeutic cloning. The primary focus of this paper however, is to elaborate on the increasing success in employing SCNT to mix somatic cells and genetic material from humans with those of animals.

The focus on producing **human-animal chimeras**, and developing **hybrid embryos** in the laboratory by combining

human embryonic stem cells and animal ova, is a rapidly advancing field in biomedical research. Underlying this technology is a belief that the more "humanized" a research animal which can be produced the greater its usefulness in understanding and tackling diseases. What has received insufficient attention from religious thinkers to date is the challenge of such research to beliefs about what constitutes a "human," potential repercussions for the future of human society as we understand it today, and ethical responsibilities towards animals.

Islam considers pursuit of knowledge and scientific progress to be *fard kifaya*. But *al-qawaid al-fiqhiyya* rest on notions of *'adl* and *qist* (justice and equity), and balance the benefits that accrue to individuals from science against the welfare of society and potential of long term consequences for the human race. These are also values subscribed to by many secular bioethicists who have expressed concerns about lack of guidelines for human cloning which is opening the door to unregulated hybrid embryos and human-animal chimeras. Religious scholars including *ulema* and *mufti* can play an important role by understanding and reflecting on this promising but troubling science, and by suggesting the nature of boundaries that will be necessary to balance its benefits and harms to society.

Recent Research on 'Telomerase' Enzyme and the Concept of Immortality

Omar Alfi

U.S.A.

The human cell contains 46 chromosomes. Each chromosome has a short, and a long arm. At the ends of each chromosome there is a cap, the TELOMERE, that protects the chromosome from fusing with other chromosomes.

As a cell divides to form two cells, the telomere loses a part, and the two new cells have a shorter telomere each. During our life, cells continue to divide, and the telomeres continue to be shorter as we grow older. At a critical level, the telomere is so short, and the cell cannot divide any more. At this phase when a cell dies (from any of several causes) it cannot be replaced. Senility disorders (as Alzheimer's, Parkinson's, heart attacks and others) appear, depending on the kind of cells that died and could not be replaced.

On the other hand, some cells acquire a certain damage in DNA that results in the production of an enzyme, the TELOMERASE enzyme, which rebuilds the telomeres as the cells divide. The presence of this enzyme may result in a cell that can keep dividing endlessly. This is a cancer cell. Some of these cells continued to divide, in tissue

cultures, and outlived the individual they started in. In a way, the individual was mortal, and his/her cancer cells were ' relatively immortal'.

If we can suppress the telomerase enzyme in the cancer cell, the telomere will get shorter as the cell divides, till it reaches the critical level after which the cell cannot divide any more, and a remission may occur.

On the other hand, if we can activate the telomerase enzyme in the normal body cells,without turning them into cancer cells, the cells can continue dividing without reaching the senescence phase, and the life span of the individual can get much longer. If this is achieved together with maintaining the vitality, and productivity of a healthy body, we will have 'relative immortality'.

Recently, progress has occurred in experimental animals, in both areas: taming the telomerase in cancer cells, and activating telomerase in cells of normal tissue. Some of these technical approaches will be discussed.

Comments related to Islam, Society and Ethics will be raised.

Human Cloning From the view Point of Fiqh (shariah) and Ethics

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Muslim Scholars and Islamic official Institutions consider human cloning as opposing religious doctrine, and forbidden. Their Ideas are based upon some theological and juridical arguments, including: posing a challenge to the creative power of God, breaking the tradition of marriage, breaking the tradition of diversity in creatures or species, making changes in divine creatures, game with creatures and so on. They as well refer to some verses of holy Quran, and take consequences against the permission of human cloning.

The author is going to say that the above mentioned arguments are not coincided with the traditional method of Islamic juridical reasoning (*Al-Ijtehad)*

The author offers some general solutions for formulating Islamic doctrines in the field of human cloning.

Key words: Ethics, juridical reasons, Genetics Engineering.

FOURTH DAY
Thursday, 9 February 2006

Topic IV
How and Where do we draw the Lines?

Twelfth Session
Human Being and His Creation where we can draw lines - Islamic, Christian and Philosophical Perspectives

Chairman: **Dr. Abdul Aziz Al-Tewaijry**

Rapporteur: **Dr. Aly A. Mishal**

Speakers

- Dr. Ibrahim Badran
- Bishop Camillo Ballin
- Dr. Jaafar Sheikh Idris

Human Creation and Where and When We Draw The Lines, Islamic Perspective

Dr. Ibrahim Badran

[Not received at the time of the Publishing date of Abstract book]

Where the Catholic Church Stands on Genetic Issues

Bishop Camillo Ballin

Kuwait

1 - The Catholic Church does not accept any technology that jeopardises human life from the moment of conception up to natural death. But the church is not against any technology that keeps man healthy,safe-guards him and cures his diseases.

2 - The teachings of the Catholic Church assert full freedom for man and call it "The freedom of God's children". But this does not mean that he should set off impulsively without any limits or guidelines. More often than not, Man is enslaved by his lusts, passions or circumstances, which impairs his freedom. The aptly free man is he who manages to liberate himself from these weaknesses. In other words, a free man can liberate himself from evil. It is this kind of freedom that helps him make decisions and toil for life. This kind of freedom is essential specially in matters relating to genetic issues where man must be free to preserve and protect human life. There is a rule of thumb in the Bible: "Never do to others what you do not want them to do to you". The individual

subjective judgement should not supersede an ethical ruling; for ethics should constitute a constant frame of reference within which changeable personal circumstances must be judged. For instance, if a girl conceives extramaritally, it becomes a personal situation which is regulated by an ethical principle and not by the personal circumstances of the girl. What is at stake here is a new life we have no right to terminate in order to uphold the girl's reputation. In the meantime, we do not put the girl on trial. On the contrary, we should extend to her special care and show full understanding in dealing with her. Therefore, when we say that extramarital pregnancy is wrong we are in fact condemning the incidence, not the wrong-doer.

3 - Undoubtedly, we wish for science to develop and for medicine to find proper methods capable of curing the diseases that afflict humanity. But the Catholic Church does not allow the use of genes for this purpose simply because they contain a sprouting life we must not stifle or exploit for furthering the objectives of science. The whole thing boils down to this: we have no right, or business, to undermine life no matter how great or important the objective may be.

4 - We must preserve and uphold an ethical frame of reference in light of which any individual circumstance should be considered. Any approach which is not based on it should not be approved.

5 - Which should take precedence: preserving life or

alleviating pain? Medicine should do its level best to save man's life and alleviate his pain, provided that no other life is jeopardised in the process. Let's consider this real-life situation: a pregnant woman who happens to be a cancer case. The question is: should the doctor be allowed to take any measure against the foetus? Is he entitled to terminate the pregnancy so that he can be in a better position to apply whatever method of treatment he deems effective? The principle we adopt is this:"Do not terminate a life to save another". The Italian pregnant woman with a cancer case who had refused to take any medicine that could adversely affect her embryo and died whereas her baby was born intact was consecrated by the Catholic Church to be a Saint. The purpose of medical science is not to combat pain but to respect life. This line of argument leads,naturally, to another controversial issue, namely, uthenasia where we end someone's life, i.e. kill him in order to exempt him from bearing his pains; God assents to a patient's pains and turns them into a spring of life for him, for his family and for the whole world. Faith, any faith, opens up for the patient a vast horizon of support and help that renders him better able to bear his pains. He who acquiesces to God's will stands to be solaced in ways unknown to Medicine.

- The Catholic Church does not approve of research on the foetus or stem-cell technologies unless they are justified by the sole purpose of curing foetuses and embryos. We believe that foetal cells involve a

new life that must not be looked upon as raw material for scientific research. Prenatal screening is not accepted, either. It results in discriminatory preference of one human being over another when in fact we must take both for what they are.

- For the same reason, the Catholic Church is against diagnosis based on genetic evidence. We cannot reject a human being just because he happens to be unexpectedly different.
- The Catholic Chirch opposes reproductive cloning because it violates the system of reproduction ordained by God.
- The Catholic Church is against genetic engineering and encourages foetal treatment as the Church loves and reveres human life and wants to preserve it. Life is in the hands of God.
- The Church does not approve of in-vitro fertilization (test-tube babies) because it stands outside the normal way of reproduction ordained by God.

Our Humanness Unalterable Essence and Changeable Actuality

Jaafar S. Idris

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Developments in the science of genetics have aroused the interest of scientists, as well as the rest of us, in some fundamental questions of our life and given them some urgency.

What does our humanity consist in? Do we have an unalterable nature in virtue of which we can be considered the humans we are, or is our nature a *tabula rasa* on which culture, the environment and now genetic engineering dictate what they want? Do we have a soul, and if so what is the difference between it and our bodies? What is its relationship with the body? It was natural for believers in God to be more concerned with such questions, and to give answers to them based on the teachings of their religions. I am glad to be given the honor of participating in this vital discussion and to be given the opportunity to present what I consider to be an authentic Islamic view on these important issues.

I am concerned here mainly with the question of human nature. If the nature of a thing is the collection of

qualities which make it the thing that it is, then every thing must necessarily have a nature. We might differ about some of the qualities of a thing, whether they can be counted among those that form it its nature, but we cannot say of something that we know and deal with that it has no nature at all, or that its nature is constantly changing. This is a matter of logic. There should therefore be no dispute about the fact that human beings have a nature that makes them the beings they are. There should also be no dispute about the fact that this nature must be fixed, because if it changes then the thing that has the new nature must be something different from a human being, just as water or oxygen must be something different from the water or oxygen that we know and deal with if their nature changes.

The question should not therefore be about whether or not humans have a nature, or whether or not that nature is changing: it should be about the kind of qualities that make us the beings that we are.

We are all agreed that we have bodies, and that these bodies have a nature in virtue of which they need for example certain things for their existence. We are also agreed on the fact that we have certain mental qualities without which we cannot be the human beings that we are. A being that is intrinsically unable to think, or will, or know cannot be a human being even if it had a body that looked exactly like that of a human, and even if it had some of the other mental qualities of humans. Thus if genetic engineering could bring some being like these, we

should not say that it changed the nature of humans, but that it came up with a new being that has nothing to do with us. Assuming this to happen, it will not abolish human beings; normal humans will continue to exist and be reproduced in the natural way they have always been. The question would then be: is it in our interest, as normal humans, to allow something like this to happen?

The answer of a believer in God would be an emphatic no! Why? Because he believes that no being can have a nature that is even equal, let alone superior, to that of a human being. Anyway, this should be the position of a Muslim.

Human Nature

Humans have many qualities that distinguish them from other creation, but these qualities are not of equal importance.

Humans are made of two different entities, body and soul, with two different sets of attributes and functions, but they are in many ways connected and interdependent.

The fact that they are distinct is stated in many Islamic texts:

First, in the creation of Adam, the soul, called in Arabic *rooh*, was breathed into an already created body.

Second, when a human child is born it is born as a living thing but without a soul. The soul is breathed into it when it is about forty days old.

Third, when a person dies, his soul leaves his body.

Fourth, if a person goes to paradise he will have a body with a nature different from his present worldly body, though he will continue to have the same soul.

The Human Soul

Human beings, according to Islam, are born good. This goodness is an attribute of the human soul; it consists in being born with a natural capacity to be aware of the fact that they are servants of God, the sole Creator who alone should be worshipped. All the other good human qualities are related to this basic quality. I mean the qualities of cognition and volition, of morality and prudence, of rationality and of the aesthetic taste, and so on. They are related to it in the sense that they are strengthened by it, but also in the sense that they are avenues that lead to it. They are thus used in the Quran as standards on which it bases its arguments for inviting people to its truths.

All of God's commands and prohibitions in Scripture have their foundation in this original good nature of the human soul. It is because of this that the religion to which Prophets like Muhammad invite people is called the religion of human nature.

Humans, however, are created as willful beings; they are therefore given the choice either to live an actual life that is a reflection of their natural humanness, or to rebel against their human essence and live a life of alienation.

God likes for them to choose to worship Him, and He helps them in many ways to make this right choice:

First, He does not create them neutral between these

alternatives, but makes this choice the natural thing for them to prefer; it is the one that makes them live in peace with themselves.

Second, He makes His whole creation consist of signs of His existence and His attributes of perfection, and provides in it evidence for the truthfulness of the Prophets whom He sends, and the Messages with which they come.

Third, He makes belief in God the only alternative that is compatible with all the good qualities they have: reason, the moral values of justice, mercy, wisdom and so on.

Fourth, He sends Prophets with messages that describe for them in detail the good life that is compatible with their good essence, give them reasons for their being so, and adduces arguments against the alternative of rebelling against their Creator and therefore their own human essence.

Fifth, If they make the wrong choice, still however much their actual life is perverted, their essence remains incorrigible; they always have the chance to make the decision to come back to their it so long as they are alive, and their all-Merciful God will always accept them.

It seems from this that no external factor can change or corrupt the human soul and deprive it of some or all of its good qualities. Only the person himself can corrupt himself by his willful acts.

The Human Body

The soul, we said, is of a nature that is completely different from that of the body. But it needs a body to

make the actual life of the human person an expression of the humanness of his soul. The body that it needs is not however any body; it is a special body that is designed to suit that soul.

a - Though this body is in many ways like that of animals, it is the one with the best form, as the Qur'an says.

b - Because it is a special body it is to be treated with respect even when it is dead. To cut off part of a dead human body, the Prophet tells us, is (as sinful as) cutting it off a living body.

c - When a person dies and his soul leaves his body, that dead body is to be washed and cleaned; it is to be wrapped in clean cloth, and be berried. People are told to stand up when a funeral passes by irrespective of whose funeral it is.

d - Human bodies are not to be mutilated even in war.

e - Because the soul uses the body, many of its acts are attributed to some bodily parts, especially the heart. But the language used leaves one in no doubt that what is meant is not the physical body part.

f - Human beings are advised not to degrade themselves by behaving like animals especially when performing acts of worship. We are told not to raise our voices the way donkeys do. The Prophet saw someone leading another by a rope; he cut the rope and told him to lead him by his hand. He tells us that, when performing prayer, we should not make any act that looks like that of an animal. We are thus told not to

> come down for prostration as a camel does, not to make our acts of prostration like the pecking of a crow, not to sit as a dog sits, and so on. We are even told by the Prophet not to wear beast hide that makes us look like them

This is not to be taken as unfair prejudice against animals; it is only meant to advise the human to behave in the way that suits his human nature. He is however encouraged and even ordered to care for animals and show mercy towards them. The Prophet tells us of a prostitute whom God forgave and even caused to enter paradise because she descended into a well and brought water in her shoes to quench the thirst of an almost dying dog. He tells us on the other hand of a woman who went to hell-fire because she kept a cat that she neither fed nor allowed to seek food for itself. Animal bodies are not to be maimed, neither are their faces to be branded. When the Prophet saw a brand on the face of a donkey, he cursed the person who branded it.

Genetic Engineering

If the human person, body and soul, is the best of God's creation, any tampering with it will only make it worse. We are warned in the Qur'an of making any alterations in God's creation. One reason for this might be the fact which we have come to see by experience that there are close relations and links not only among the constituents of an individual creation, but also among almost all kinds of God's creation.

You might say that we do, we have to, till the land, plant crops, kill animals, dig wells and canals, build bridges, and so on. We do indeed do that, but in doing it we are still working within the natural order, not disrupting it. We do the same when we fix something that goes wrong; we seek cures for our ailments and the ailments of our animals; we might to that end even have to cut off some parts of our bodies. This is because God's creation cannot be perfect in the sense that the Creator is perfect.

Genetic engineering should not therefore aim at perfecting nature; it will only distort it. It should only be resorted to for therapeutic purposes.

As to cloning there is in my view nothing that justifies it and much that is against it. The way a human being is naturally reproduced is a way is a way that is very well connected to nature; it involves sexual urge, close intimacy between two individuals, growth in the uterus of a natural mother, love, suckling, caring and the joy of childish behavior; it has father and mother, brothers and sisters and relatives. But a cloned being lacks most of these qualities and relations. What kind of a creature is that going to be? And what is the need for it? Isn't it really odd that while we try to control natural birth, we encourage un-natural production of creatures that, to say the least, lack some of the qualities of naturally reproduced humans?

FOURTH DAY
Thursday, 9 February 2006

Topic IV
How and Where do we draw the Lines?

Thirteenth Session
Stem Cell Controversy - Islamic, Jewish and Christian Perspectives

Chairman: **Dr. David King**

Rapporteur: **Dr. Malik Badri**

Speakers

- Dr. Ted Peters
- Dr. David Bleich
- Dr. Maher Hathout

The Stem Cell Controversy: Secular Science and Religious Reaction

Ted Peters

Editor

Dialog, A Journal of Theology

U.S.A.

When the plan to isolate human embryonic stem cells was first conceived in 1996, scientific researchers foresaw the importance of incorporating ethical concerns into their work. Since the international controversy broke out in the fall of 1998, three competing ethical frameworks have emerged within which religious spokespersons formulate the ethical issues: (1) the embryo protection framework, (2) the nature protection framework, and (3) the medical benefits framework. Roman Catholic and evangelical Christians tend to work within the first framework; whereas Muslims tend to work within the third. This presentation will compare and contrast the three frameworks with a recommendation for the third, medical benefits.

Stem-Cell Research

Dr. David Bleich

[Not received at the time of the Publishing date of Abstract Book]

Stem Cells and DNA: Modern Ethical Challenges

Maher Hathout

U.S.A.

New progress in medicine, particularly in the area of genetics, is opening a window that was never opened before. This may enable us to see and predict areas of our future, in which God is moving them from the realm of ghayb to the area of human knowledge. Moreover it might enable us to control parts of these areas that one could never have been able to control before.

Like every new ability that is now discovered, from fire to using metal, up to the atomic age, every discovery represents a test for humanity, since it could be used for good or evil purposes, depending on the moral basis and the respect or disrespect for the common good. These discoveries in medicine are no exception to this rule.

Some of the main areas fitting the abovementioned description are: stem cell collection and utilization, and DNA collection, storage and utilization with the possible undermining of individual privacy.

In this presentation, I will briefly describe the main issues of each item with the potential dilemmas facing medical ethicists, then I will focus on the issue of DNA

collection. As a Muslim American preoccupied by issues of human rights, civil liberties and the right to privacy, I intend to offer samples of the wide and intense debate around the issues within the United States. It is quite clear that issues within the States are not exactly domestic or local, but rather precursors to what will take place in our globalized world.

Stem cells: These are the original, primitive cells, at the pre-differentiated stage. They have two important abilities: multiplication and differentiation, that is, taking a course towards being organ cells, like brain cells, heart muscle cells, columnar cells lining the intestines, etc. Usually when they are differentiated, they lose to a variable degree, the ability to multiply or rejuvenate; they are stem cells no more.

The breakthrough in medicine is to get these cells and direct them towards different lines of differentiation, so they can become nerve cells, brain cells, or heart muscle cells, and then eventually replace the cells that have been destroyed irreparably in different organs, such as the brain, heart or nervous system as required. The best source available for us to get these cells is the human embryo. Recently, however, other sources are being entertained; the most promising source is blood from the umbilical cord. Specialists in the field will discuss these different potential options.

The debate erupted around the issue of the embryo, and so in the USA it boiled down to be a debate around abortion, the fight between the so-called pro-life versus the

so-called pro-choice. Then it evolved to be between conservatives and liberals and in election years it becomes a fight between Republicans and Democrats. When science is so politicized, objective, scientific inquiry becomes marginalized.

It is for people of science and conscience to bring the debate back to its legitimate arena, which is the benefit of humanity. In exploring the religious debate about abortion within the three Abrahamic religions, we will notice that within each religion there are: a) multiple opinions (probably with the exception of modern Catholicism), and b) there is a process of evolution. This paper will briefly demonstrate both a and b.

DNA: What DNA is, and its individualistic nature will be explored. DNA is equivalent to permanently available fingerprints and identification cards of every individual from whom we can get any traces of tissue or body fluid. Because of that, it is widely used in criminology, and is admissible in courts as almost irrefutable evidence. In addition, it carries the genetic marks that pass through generations, hence came its use to prove or disprove paternity.

The debate about DNA in the United States is again running on political motives and consideration.

The idea of storing or archiving a huge collection of DNA for individuals or groups who can potentially be subject to scrutiny.

The paper will sample a Congressional bill about the subject.

The debate here is mainly about the right of privacy, civil liberties and the potential abuse by authority, or even the possibility of intended or unintended leaking of such information.

While there are valuable uses of studying DNA to prevent the proliferation of congenital diseases, the current debate is focused on the issues of human rights and liberties.

This paper is not offering answers but inviting all to a collective thinking process to find guidelines based on the purpose of Devine Revelation to realize the benefits of human beings.

FOURTH DAY
Thursday, 9 February 2006

Topic IV
How and Where do we draw the Lines?

Fourteenth Session
Stem Cell, Prenatal Diagnosis and Reproductive Technology - Islamic Perspective

Chairman: **Dr. Khalid Al-Mathkoor**

Rapporteur: **Dr. Abdul Sattar Abu Ghuddah**

Speakers

- Dr. Musa Mohamed Nordin
- Dr. Abdul Aziz Al-Swailem
- Dr. Hanan Hamamy

Islamic Medical Ethics Amidst Developing Biotechnologies

Musa Mohd. Nordin

Consultant Paediatrician & Neonatologist,
President, Federation of Islamic Medical Associations
Malaysia

Heralded by the revelation of the double helical structure of the DNA molecule in 1953, the 21st century is aptly designated the biotechnology century. The 20th century of physics, which saw the transformation of silicon into computing magic, was embraced with enthusiasm by virtually every household. However, unlike her predecessor, the same cannot be said about the advancements in biomedicine.

These revolutionary procedures in biotechnology has probed the outermost boundaries of what is scientifically possible and acceptable. Micro manipulation at the very earliest stages of human development, at the level of the embryo, single cell and genetic structure is undoubtedly a very delicate and sensitive issue with potentially explosive ethical, social, medico-legal and religious ramifications. Hence, the turbulent and not uncommonly hostile controversies that has since evolved.

The breaking news of the cloning of Dolly the sheep

by the technique of somatic cell nuclear transfer in February 1997 unleashed a polarized world view towards the new technologies of human reproductive cloning (1). Eight years post-Dolly, only a few countries have either drafted or enacted laws to bring human genetic and reproductive technology under responsible societal governance. As of November 2003, 77% of countries have not taken action to ban reproductive human cloning. Malaysia is in the final stages of drafting laws to ban the reproductive cloning of human beings.

Apart from a small minority of "rogue cloners" there is an international consensus against the reproductive cloning of human beings. However the opportunity to elaborate an international convention to ban reproductive human cloning was lost when member countries disagreed on the extent of the ban.

Unfortunately, the confusion and disgust at the prospect of cloning and creating babies has been transferred to therapeutic cloning. In therapeutic cloning unlike human reproductive cloning the end point is not cloning a human being. This technology involves the production of human clonal embryos for the purpose of harvesting stem-cells, tissues and organs. This would open the potential of curing a whole host of chronic and debilitating diseases including diabetes mellitus, parkinsonism, myocardial infarction and spinal injuries apart from many other biomedical spin offs.

The source of the totipotent stem cells has however been a source of intense controversy. Stem cells found in

umbilical cord blood, bone marrow and aborted fetuses are generally acceptable from the ethical and moral point of view. Though less plastic, scarce and sometimes quite inaccessible, there have been some success stories with the use of these non-embryonic stem cells (adult stem cells).

The use of embryonic stem cells (ESC) is however fraught with highly charged religio-bio-ethical debate. The source of controversy revolves around the various questions about when life becomes a human life; namely:

1 - Is an ovum and sperm a person?

2 - When do the products of conception become a person?

3 - Does a zygote have a full set of human rights?

4 - Does the foetus have a soul?

This concept of personhood is neither logical nor empirical. It is based on one's fundamental assumptions about the nature of the world. It is primarily a religious or quasi-religious concept.

Those who believe that the soul enters the body at conception regards the fertilized ovum as a dignified human person will full human rights. And therefore would not accept the manipulation or destruction of human embryos, even when their proposed goal is good in itself.

The scientific paradigm defines the pre-embryonic stage as the period from fertilization up to the determinant of the primitive streak at the age of 14 days. The pre-embryo is unable to feel pain or pleasure and therefore has no

moral status. They may be cryopreserved, discarded or used for research purposes.

The Quran is a book of guidance to invite mankind to the truth and salvation. But nonetheless it contains many "signs" which invites mankind to reflect upon his creation and the world that surrounds him. In various verses, it illustrates lucidly both the physical and spiritual dimensions of man's creation. In chapter 23, verses 12-14, the Quran says:

"And indeed We created man from a quintessence of clay. Then we placed him as a small quantity of liquid (nutfa) in a safe lodging firmly established. Then we have fashioned the nutfa into something which hangs (alaqa). Then We made alaqa into a chewed lump of flesh (mudgha). And We made the mudgha into bones, and clothed the bones with flesh. And then We brought it forth as another creation. So blessed be God, the best to create"

In another verse the Quran very clearly revealed another phase of man's being, the process of ensoulment.

"and breathe into him of His spirit" (32:9)

The soul is a metaphysical concept which is fundamental in Islam and it defines a human individual. The majority opinion in Islam accepts the 120th day of pregnancy as the time of ensoulment. Eventhough ensoulment occurs later, the embryo is respected from the onset of fertilization and acquires consideration as a human foetus after implantation.

And based on these fundamental premises, at least four Islamic Fiqh (Jurisprudence) Councils have given permis-

sion for the use of surplus embryos from IVF laboratories for ESC research (2,3,4,5). However, it is not permissible at this juncture, to consciously generate pre-embryos either by conventional IVF techniques or somatic cell nuclear transfer (SCNT) for ESC research.

As at November 2003, 6 (3%) countries have allowed therapeutic cloning whilst 30 (16%) have prohibited it. The 6 countries in favour of allowing therapeutic cloning to proceed within stipulated policy guidelines are China, Singapore, Belgium, UK, Cuba and USA (6).

The Federal Embryo Protection Law (1990) of Germany prohibits both reproductive and therapeutic cloning. This represents the spectrum of countries with "relatively restrictive" laws related to reproductive technologies. Others include Austria, the Scandinavian countries, Ireland, Italy, Netherlands, Spain and Switzerland

The other end of the spectrum is represented by the United Kingdom's Human Fertilisation and Embryology Act (1990) and Human Reproductive Cloning Act (2001) and Singapore's Bioethics Advisory Committee (BAC) Report on "Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning" which was approved by the government on 18 July 2002. The UK and Singapore "more permissive" regulations allows the generation of embryos by both IVF and SCNT technologies if there is a demonstrable and exceptional need which cannot be met by the use of surplus embryos.

The "in-between" policies are demonstrated by the

Canadian's new Assisted Human Reproduction Act (2004) and Australia's Research Involving Embryos Act (2003). They both allow the utilization of surplus IVF embryos for research but prohibit the creation of human embryos for research and SCNT for research and reproduction. The current thinking in our Malaysian National Committee on Human Cloning seems to favour this line of thought and legal framework; which also resonates well with the fatwa (edict) issued by the three jurisprudence councils in Jeddah, USA and Jordan.

Region	Countries	Reproductive Cloning		Research Cloning				IGM	
		Prohibited		Prohibited		Allowed		Prohibited	
	#	#	%	#	%	#	%	#	%
Africa	53	1	2%	1	2%	0	0%	1	2%
Middle East	23	1	4%	0	0%	0	0%	1	4%
South Asia/East Asia /Pacific	33	6	18%	3	9%	2	6%	5	15%
Europe - Eastern	24	14	58%	8	33%	0	0%	9	38%
Europe - Western	24	16	67%	13	54%	2	8%	8	33%
Americas & Caribbean	35	8	23%	5	14%	2	6%	3	9%
World	**192**	**46**	**23%**	**30**	**16%**	**6**	**3%**	**27**	**14%**

Previously it was thought that it would be extremely difficult to develop comprehensive policies to govern human genetic and reproductive technologies. Despite the earlier skepticism, various countries have now shown that it is possible to break the policy deadlock and draft legislation to regulate these new technologies of human genetic modification. Despite their different political and

social experiences, some of the national policies thus available have exhibited a remarkable sharing of core principles; namely:

a - they affirm technologies with a real chance of preventing or curing disease

b - they ban technologies which could harm children or open the door to free market eugenics

c - they ensure research involving embryos is tightly regulated

d - they establish publicly accountable means to review policies & make new ones

e - they pose no risk for reproductive rights

Probably one of the most far reaching thoughts on this highly controversial issue of ESC research has been that propounded by Sheikh Dr. Yusuf Al-Qardawi, a highly respected and contemporary Muslim scholar who related in his concluding remarks after a lengthy juristic deliberation the following position (7):

"If it becomes possible through research to clone organs such as the heart, liver, kidneys or others which may benefit those who are in dire need of them; then this is permitted by religion and the researcher or scientist will receive the reward from Allah. This is because the research will confer benefit on humanity without loss to others or infringing upon them. Therapeutic cloning with this noble research pursuit is permissible and it is encouraged. In fact, in some circumstances, it may become mandatory to enhance this research in accordance with the need and man's research capability and accountability."

Islamic medical bioethics is firmly grounded on the fundamental tenets of the Islamic Shariah (Divine Law). The close collaboration between the scholars of jurisprudence and the scientific and medical fraternity has enabled her to keep abreast of the plethora of advancing biotechnologies.

Despite the wide ranging bio-religio-ethical problems and dilemmas posed by these emerging biotechnologies, Islamic medical bioethics, has provided a "middle of the road" approach moderating between the extremes of conservatism and liberalism. This it does without impeding the genuine and responsible quest for new knowledge and breakthroughs in new research frontiers. It has provided a legal framework for responsible societal governance of human genetic and reproductive technologies and banned all forms of free market eugenics.

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Stem Cells and Cloning Similarities and differences

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Many researchers, ethicist and scholars deal with cloning issues with very high precautions since cloning is unethical and interfere with many religious issues, however when we discuss the stem cells research the positive attitude to the stem cells application will dominate the other issues. In fact there are many similarities issues between cloning and stem cells research. The ethical issues on the cloning and stem cells will be presented. This paper will represent the cloning methods and applications and stem cells resources to highlight the common ethical issues between the embryonic stem cells and cloning to unify and homogenize the religious and ethical stand on the similar issues.

Laboratory and ultrasound prenatal diagnosis: Prenatal Genetic Diagnosis: Scope, Applications and Limitations in Arab countries

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Prenatal diagnosis is recognized as an important option for the prevention of serious genetic diseases for couples with an increased genetic risk in most industrialized countries. Advancing technology in the field of prenatal genetic diagnosis is expanding the capability of detecting specific genetic and congenital disorders in the fetus. Families face a multitude of difficulties when having a severely affected, chronically disabled child, or when faced with several infant deaths due to genetic diseases and congenital malformations. Families seen at our genetic counseling clinic have different problems, different backgrounds, different beliefs and variable financial resources. Each family is thus considered a separate unique entity and counseled on scientific grounds taking into consideration their needs and limitations. There are several ethical, legal, social and religious implications regarding pregnancy

termination of an affected fetus. Some of these implications are unique to Arab and Islamic countries. Clear guidelines for prenatal genetic diagnosis and selective termination of the affected fetus are urgently needed in Arab and Islamic countries in order to help counselors and health care providers in advising families regarding available options. Committees for formulating these guidelines could include health policymakers, health care providers, religious and legal authorities and patients and/or their families.

FOURTH DAY
Thursday, 9 February 2006

Topic IV
How and Where do we draw the Lines?

Fifteenth Session
Challenges of Science, Media and Overview about the Seminar

Chairman: **Dr. Abdul Malik Mansour**

Rapporteur: **Dr. Shahid Athar**

Speakers

- Dr. Mohd. Haitham Al-Khayat
- Mrs. Nadia El-Awady
- Dr. Mohamed Abdul Wahab Galal

Overview of The Seminar

Dr. Mohd. Haitham Al-Khayat

[Not received at the time of the Publishing date of Abstract Book]

The Media and Biotechnologies: Ethical Dilemmas

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Deputy Editor-in-Chief
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Human genetic and reproductive technologies are developing at such a rapid pace that media professionals find it difficult to keep up. Frequently this results in superficial coverage that borders on misinformation. What role can the media play in creating awareness among their audiences that might result in better decision-making processes evolving? What obstacles face the media in providing the coverage that both policy-makers and audiences need? Is the current trend of "Islamic media" up to par with its contemporaries in raising ethical and religious questions as they pertain to human genetics and reproductive technologies?

The Challenges of Science and Technology from an Islamic Perspective

Mohamed Abdul Wahab Galal

Egypt

If the first half of the 20th century was described as the era of physics, the second half could be aptly dubbed the era of Information Technology and Biology. This era is still with us and proceeding with increasing tempo forcing humanity to go out of breath in a bid to catch up with the latest. It is not just a matter of facts, new theories or developing technologies. Rather, it is the onset of serious changes in orientation with respect to society, ethics and law. Unfortunately, these changes are not accompanied by philosophical, religious or legal thinking that measures up to them. So, it looks as though the human ship is drifting into unknown waters.

Although the horizons expanded by Genetic Engineering, Assisted Reproduction Technologies and biological achievements and the vast possibilities they have made available are unprecedented, we had better consult history for indications and lessons that can be of great benefit to us in our handling of and dealing with innovations.

The first lesson is provided by religion. Religious institutions should not repeat mistakes made in the past such as anti-science attitudes which stand in the way of

progress. Religion should also get rid of that stereotypical image which depicts it as conservative, opposing man's liberty, enlightenment and worldly happiness.

Likewise, the history of science contributes many useful lessons. From the history of medicine we can take the example of the attitude of the religious institution in Egypt during the 19th century with respect to dissecting corpses for medical studies at

The School of Medicine established by Mohammed Ali. How did the initial opposition turn into approval?

From the history of Physics let's consider the lesson learnt from the invention of the atomic bomb. This is a glaring example of what might be called "the scientists' naivity". When we read the writings of Einstein and Openheimer, who are the fathers of the invention, we can see that they had bitter feelings of guilt; they believed that they had played into the hands of the political institution. This example proves that the nature of contemporary science and its impact have become so complex that no individual scientist can perceive it, and that science and technology are far ahead while philosophical and ethical views concerning them are lagging behind.

From the history of Economics, the Industrial Revolution sends an eloquent message about the damage inflicted upon the environment in the form of air pollution, the greenhouse effects and kinds of health disorders never heard of before. This example tells us that capitalists and their corporations are driving the world to take risks under the guise of modernity which are cleverly justified by irresistible promotional campaigns that aim only at realizing the highest possible profits.

The most significant lesson, however, comes from epistemology provided by Quantum Mechanics. Research on this branch of modern physics has shown that the natural laws we reach are not the true expression of what nature really is, but only of our perception of it. These laws actually reveal the limitations and shortcomings of our mind rather than the real essence of nature. This view, which sounds critical of our mental powers, sets the boundaries of what the mind can strive to reach and leads us to be aware of where we should not venture. This critical view has been voiced by some philosophical trends since Kant and reiterated by religions since eternity. But it was misunderstood by some conservative thinkers who turned it into a string of restrictions and bans on the mind. This philosophical principle which takes the mind for what it really is should serve as a sort of self-imposed censorship to make sure that science is put to the best possible use and that it is restrained whenever it goes astray. In other words, this principle should be the meeting point between religion and the philosophy of science.

Based on this epistemological stance we will attempt to present in broad lines the jurisprudence relating to problems and dilemmas facing mankind. Like all heavenly religions, Islam has contributed its view of this world as well as of human ontology: where mankind begins and where it ends. Islam has held human dignity in high esteem and made it the basis of Ethics. It calls upon man to be divine and to adopt divine morals. It considers secular natural science, not the religious science as some would like to argue, a way of worshiping God; an oblation. The

reason is that this kind of science is our way of seeing God through his creation. It helps us recognize his greatness and omnipotence. If this is not authentic and practical praise of God, what is?

In the meantime, Islam brings to our attention the fact that no matter how much knowledge we gain and despite our incessant endeavourers to find out about this life and this universe, what we can reach is relatively little and partial. This does not constitute any restrictions on the freedom of research or hurdles in the way of attaining knowledge. If the history of Moslems has witnessed certain acts and incidents which reflect hostility toward science and scientists they should be taken as the result of the decline into which the Islamic societies have gone for reasons that stand outside the scope of this paper. What we are quite sure of is that such acts and incidents are not the true expression of the Islamic ethos and are not corroborated by any attested texts.

In the same vein, we should mention that cutting the relationship between the church and science down to one incident such as that involving Galileo, stands outside historical integrity. Using this incident to come to the conclusion that the church was opposed to science along its history amounts to distorting facts. The matter is not as simple as that. The role of the church and its relationship with science has more aspects and complexities than is insinuated by the stereotypical image given by the ideology of the Enlightenment.

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