New and emerging sciences and technologies, ableism, transhumanism and religion, faith, theology and churches[1]

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Abstract

Today's scientific news seems to become yesterday's news… fast replaced by even more astonishing news. One field of science is chased by another at an ever-increasing speed. We are just coming to grips with issues attached to advances in information and communication technology and along comes biotechnology. Despite the many unresolved issues around bio we've started to hear in the last few years of nano- (N) technology and science and its convergence with bio-, info- and cogno- (BIC) technology and science. The discourse around the convergence of N with BIC has barely started. But along comes the next field… synthetic biology (synbio) which is (a) the design and construction of new biological parts, devices, and systems; and (b) the re-design of existing, natural biological systems for useful purposes.[2] These new and emerging sciences and technologies increasingly enable numerous paradigm changes such as

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[1] A 170 page e-book Wolbring (2007) "World Council of Churches and new and emerging technologies. Able-ism: A prerequisite for Transhumanism" which covers the here outlined topic in more detail is available on the WCC webpage http://www.oikoumene.org/en/programmes/justice-and-diakonia/faith-science-technology-and-ethics.html and at the authors webpage http://www.bioethicsanddisability.org/wcc.html Other writings by the author which cover secular and religious angle of able-ism and transhumanism are among others Wolbring (2007) What Convergence is in the Cards for Future Scientists? http://www.bioethicsanddisability.org/convergence.htm and Wolbring (2006) Nanotechnologie, Behinderte und der ÖRK in Ökumenische Rundschau October 2006 55. Jahrgang Heft 4 page 412-424.
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[2] Wolbring, G, Synthetic Biology 2.0 http://www.innovationwatch.com/choiceisyours/choiceisyours.2006.05.30.htm, 2006

- Moving from Species-typical functioning to Beyond species-typical functioning
- Moving towards the generation of new social groups (techno poor disabled) and towards more ability divides
- Moving from nature based commodities (i.e. cooper, rubber) towards nanoformulated commodities towards atomic commodities (molecular manufacturing)
- Moving from dissecting life towards building life base-pair by base-pair
- Moving towards a transhumanist model of health and impairment
- Moving from curative to enhancement medicine
- Moving from human rights to sentience rights
- Moving from ableism towards transhumanization of ableism
- Moving from the default position that one is healthy till one is ill towards the default position that one is impaired/ill till one obtains the newest bodily enhancements.
- Moving towards the transhumanization of a variety of religious, theological and faith based concepts

These paradigm changes impact on every aspects of the work and self understanding of religions, churches, denominations and faiths from Trade (molecular manufacturing), human security (water, climate, energy, food…), health and healing, justice (ability divide),weapons, peace, poverty reduction, social cohesion, the interpretation of faith, religious and theological concepts, the relationship and reconciliation between different churches, denominations and faiths and in the end every being on earth.

The emerging new realities require that we ask ourselves "What do we want from new and emerging technologies? How do advances in new and emerging technologies change and influence our self perception, our self identity, the quality of our lives, our ability to pursue 'the good life' and our perception of what entails 'a good life'? Answering these questions requires an examination of the complex interdependent fabric of perceptions, values, and choices within different cultural, political, economic, ethical, spiritual, religious and moral frameworks.

This paper will focus on the concepts of ableism and transhumanism and their impact on different churches, denominations and faiths.
In short "ableism is a set of beliefs, processes and practices that produce -based on ones abilities- a particular kind of understanding of oneself, one's body and one's relationship with others of one's species, other species and one's environment and includes one being judged by others"[3]. Transhumanism "is a way of thinking about the future that is based on the premise that the human species in its current form does not represent the end of our development but rather a comparatively early phase. We formally define it as follows: (1) The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the

[3] Wolbring, G, Glossary for the 21st Century, http://www.bioethicsanddisability.org/glossary.htm, 2007.,International Center for Bioethics, Culture and Disability webpage; Wolbring, G, What Convergence is in the Cards for Future Scientists? http://www.bioethicsanddisability.org/convergence, 2007.,Conference presentation Vienna May 2007 hosted on International Center for Bioethics Culture and Disability webpage; Wolbring, G, NBICS, other convergences, ableism and the culture of peace, http://www.innovationwatch.com/choiceisyours/choiceisyours-2007-04-15.htm, 2007.,Innovationwatch.com webpage; Wolbring, G. (2007). World Council of Churches and new and emerging technologies. Able-ism: A prerequisite for transhumanism World Council of Churches, Geneva http://www.oikoumene.org/en/programmes/justice-and-diakonia/faith-science-technology-and-ethics.html and the authors webpage http://www.bioethicsanddisability.org/wcc.html

human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities"[4]

These concepts are conspicuously absent from most discourses religions, churches, denominations and traditional faiths are shaping despite the fact that they
a) are one of the main influences on our self perception, our self identity, the quality of our lives, our ability to pursue 'the good life' and our perception of what entails 'a good life'
b) have a direct impact on the direction and governance of science and technology and vice versa
c) pose numerous challenges to individual churches, denominations and traditional faiths and their membership and the relationship between the different churches, denominations and traditional faiths
d) have an impact on theological and religious concepts
e) have an impact on a culture of peace, poverty reduction, a better situation in low income countries, equity and equality for women and marginalized groups, sustainable development, and a dialogue among civilizations domains which impact on the membership of churches, denominations and traditional faiths

Introduction:

The term 'nanotechnology' was used first to describe a way to manufacture something from atomic molecules (such as the food replicator in many science fiction films where one says, for example, "Coffee" and the machine builds, synthesizes the coffee molecule by molecule)[5]. This facet of nanotechnology is now generally known as molecular manufacturing or molecular nanotechnology[6]. The term nanotechnology itself is nowadays used to mean 'nanoscale science and technology' research and development products, ideas and processes with controlled size below 300nm (some say 100nm). A variety of sciences and technologies are having nanoscale components such as

- molecular manufacturing or molecular nanotechnology;
- nano sciences and technology
- biotechnology and biomedicine, including genetic engineering;
- information technology, including advanced computing and communications;
- cognitive science (neuro engineering)
- synthetic biology which is the design and construction of new biological parts, devices, and systems; and the re-design of existing, natural biological systems for useful purposes.
- certain areas of chemistry and engineering
- material sciences
- longevity/immortality sciences

[4] World Transhumanist Association, The Transhumanist FAQ – A General Introduction – Version 2.1 , http://www.transhumanism.org/index.php/WTA/faq21/46/, 2003.,World Transhumanist Association Webpage
[5] Nanotech NOW. Nanomedicine Glossary. 2005. http://www.nanotech-now.com/nanotechnology-medicine-glossary.htm
[6] Wolbring, G, From Nanotech to Nanoscale Technology and Sciences, http://www.innovationwatch.com/choiceisyours/choiceisyours.2006.07.15.htm, 2006

- modification of animal sciences
- geo-engineering

Many lists of anticipated Nanoproducts exist. The National Nanotechnology Initiative (US) envisioned applications for nanoscale science products in areas such as the environment, energy, water, weapons and other military applications, globalization, agriculture, and health (e.g., more efficient diagnostics and genetic testing, cognitive enhancement; life extension and enhancing human performance in general)[7]. A list of top ten nanotechnologies for development[8] and a list of top ten biotechnologies for improving health in developing countries were recently published[9]. Transhumanists, believe that advances in nanoscale sciences hold the key for extreme life extension to the level of immortality and the achievement of morphological[10], "full reproductive,"(e.g., artificial womb research), and genomic freedom[11].

The U.S. government spent nearly twice as much on nanotechnology in 2004 as it did on the Human Genome Project (HGP) in its peak year. Predictions are that expenditures in Nanotechnology will soon outstrip investments to date in Genomics and Biotechnology[12]. Many middle-income countries such as India[13], China[14] and others[15] are increasingly involved in nanotechnology.

The ever-increasing speed of change in science and technology fields, products, and knowledge and the accordingly faster change in discourses, concepts, trends and areas of action[16] allows for less time to evaluate impacts on human security[17] social structures, social cohesion[18], the social contract, social covenant, and how negative impacts can be mitigated and positive impacts enhanced.

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[7] M.Roco, W. B. e. Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science. 2003. http://www.wtec.org/ConvergingTechnologies/Report/NBIC_report.pdf. Kluwer Academic Publishers, Dordrecht Hardbound.

[8] Salamanca-Buentello, F., Persad, D. L., Court EB, Martin, D. K., Daar, A. S., and Singer, P. A. Nanotechnology and the developing world (2005) PLOS Med 2, 5 e97, http://medicine.plosjournals.org/perlserv?request=get-document&doi=10.1371/journal.pmed.0020097,

[9] Daar, A. S., Thorsteinsdottir, H., Martin, D. K., Smith, A. C., Nast, S., and Singer, P. A.Top ten biotechnologies for improving health in developing countries (2002) Nat Genet. 32, 2 229-232, PM:12355081,

[10] Anders Sandberg. Morphological Freedom -- Why We not just Want it, but Need it. 2001. http://www.nada.kth.se/~asa/Texts/MorphologicalFreedom.htm.

[11] Wolbring, G., (2003) in Living with the Genie (Lightman, A. S. D. D. C., Ed.) pp 139-157, Island Press,

[12] Lux Research. The Nanotech Report 2004 (TNR 2004) , 2004, https://www.globalsalespartners.com/lux/#

[13] Wolbring, G. Emerging technologies (Nano, Bio, Info, Cogno) and the changing concepts of Health and disability/impairment: A New Challenge for Health Policy, research and care (2006) Journal of Health and Development (India) 2, 1&2 19-37

[14] Jia Hepeng. Government raises nano-tech funding, 2005, China Daily, http://www.chinadaily.com.cn/english/doc/2005-06/10/content_450234.htm

[15] Maclurcan, D. Nanotechnology and Developing Countries, Part 2: What Realities? (2005) AZoNano - Online Journal of Nanotechnology, http://www.azonano.com/Details.asp?ArticleID=1429,

[16] Wolbring, G, Scoping paper on Nanotechnology and disabled people, http://cns.asu.edu/cns-library/documents/wolbring-scoping%20CD%20final%20edit.doc, 2006.,Center for Nanotechnology in Society Arizona State University; Wolbring, G. Social and ethical issues of nanotechnologies (2007) ISOFOCUS 4, 4 40-42, http://www.bioethicsanddisability.org/isofocus.html,

[17] Wolbring, G, Human Security and NBICS, http://www.innovationwatch.com/choiceisyours/choiceisyours.2006.12.30.htm, 2006

[18] Wolbring, G, NBICS and Social Cohesion, http://www.innovationwatch.com/choiceisyours/choiceisyours.2007.01.15.htm, 2007

This has numerous consequences for marginalized populations, for individual churches, denominations, traditional faiths and their membership, their relationship with each others and for societies at large.

Furthermore the philosophy of transhumanism and different forms of ableism are influenced by -and are major influences on the visions, developments and consequences of nanoscale sciences and the related discourses, concepts, trends and areas of action.

The purpose of this paper is to expose the reader to the existence of different forms of ableism, the philosophy of transhumanism and transhumanized forms of ableism and their impact on discourses, concepts, trends and areas of action important to churches, denominations, faiths, religions and society at large

The paper contends that there is a pressing need for churches, denominations, faiths, religions and society at large to deal with ableism and transhumanism in all of their forms and their consequences.

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What is ableism?[19]

Ableism is a set of beliefs, processes and practices that produce -based on ones abilities- a particular kind of understanding of oneself, one's body and one's relationship with others of one's species, other species and one's environment and includes one being judged by others. Ableism exhibits a favouritism for certain abilities that are projected as essential while at the same time labelling real or perceived deviations from or lack of these 'essential' abilities as a diminished state of being leading or contributing to the justification of a variety of other isms**.** Every ism has two components: something we cherish and something we do not. The first, second or both parts may be emphasized. Ableism reflects the sentiment of certain social groups and social structures to cherish and promote certain abilities such as productivity and competitiveness over others such as empathy, compassion or kindness (favouritism of abilities). Ableism and favouritism of certain abilities is rampant today and throughout history. Ableism is mostly if at all recognized in the context of disabled peoples. Ableism shaped and continues to shape areas such as human security, social cohesion, social policies, relationships among social groups and between individuals and countries and between humans and non-humans and humans and their environment. Ableism is one of the most societal entrenched and accepted isms and one of the biggest enabler for other isms (e.g. speciesism, sexism, racism, Caste-ism, anti-environmentalism, consumerism, age-ism, GDP-ism, superiority-ism….).

Ableism related to productivity and economic competitiveness is the basis upon which many societies are judged, and it is often seen as a prerequisite for progress.

The direction and governance of science and technology and different forms of ableism have always been inter-related.

Ableism will become more prevalent and severe with the anticipated ability of new and emerging sciences and technologies:

[19] See footnote 3

- to generate human bodily enhancements in many shape and forms with an accompanying ability divide and the appearance of the external and internal techno poor disabled[20]
- to generate, modify and ability enhance non-human life forms;
- to separate cognitive functioning from the human body; and
- to modify humans to deal with the aftermath of anti-environmentalism.
- to generate products atom by atom which moves the trade from nature based commodities towards atomic generated commodities which will change the way we trade

We can already observe a changing perception of ourselves, our body, and our relationships with others of our species, other species and our environment. New forms of ableism (transhumanization of ableism) are now appearing which are often presented as a solution to the consequences of other ableism based isms such as speciesism and anti-environmentalism.

What is Transhumanism?[21]

"Transhumanism is a way of thinking about the future that is based on the premise that the human species in its current form does not represent the end of our development but rather a comparatively early phase. We formally define it as follows: (1) The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities. (2) The study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental human limitations, and the related study of the ethical matters involved in developing and using such technologies[22].
"Transhumanism," transhumanists say, "is entering the mainstream culture today, as increasing numbers of scientists, scientifically literate philosophers, and social thinkers are beginning to take seriously the range of possibilities that transhumanism encompasses. A rapidly expanding family of transhumanist groups, differing somewhat in flavor and focus, and a plethora of discussion groups in many countries around the world, are gathered under the umbrella of the World Transhumanist Association, a non-profit democratic membership organization" [23].

Hughes the former executive director of the World Transhumanist Association[24] concluded in a recent article based on the answers received to a survey of the

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[20] Wolbring, G, Ableism and NBICS, http://www.innovationwatch.com/choiceisyours/choiceisyours.2006.08.15.htm, 2006; Wolbring, G. Emerging technologies (Nano, Bio, Info, Cogno) and the changing concepts of Health and disability/impairment: A New Challenge for Health Policy, research and care (2006) Journal of Health and Development (India) 2, 1&2 19-37
[21] Wolbring, G, Transhumanism, 2006 http://www.innovationwatch.com/choiceisyours/choiceisyours.2006.09.30.htm and footnote 24, http://www.metanexus.net/magazine/tabid/68/id/9930/Default.aspx, 2007.,Global Spirit
[22] See footnote 4
[23] See footnote 4
[24] Hughes, J, The Compatibility of Religious and Transhumanist Views of Metaphysics, Suffering, Virtue and Transcendence in an Enhanced Future, http://www.metanexus.net/magazine/tabid/68/id/9930/Default.aspx, 2007.,Global Spirit

membership of the World Transhumanist Association that a transhumanist has five core value commitments:

- **The Desirability of Human-Enhancement -** attitudes about life extension, intelligence augmentation, cryonics and uploading
- **Humanism** - attitudes about human self-reliance and whether there are divine limits on human reason
- **Technological-Optimism** - attitudes about embracing or banning new technologies, such as nanotechnology, genetic engineering and human enhancement technologies
- **Personhood Ethics** - attitudes about valuing the well-being of all sentient, intelligent beings, including rights for great apes and robots, and conversely not endorsing rights of lower animals, feti or the brain dead
- **Reproductive rights** – liberal attitudes about abortion, human cloning and the genetic enhancement of children

Transhumanization of ableism[25]:

As ableism is so ingrained in most social fabrics it comes at no surprise that transhumanized forms of ableism are developing.

Transhumanization of Ableism (generic form)

The transhumanized form of ableism is a set of beliefs, processes and practices that perceive the improvement of functioning of biological structures beyond typical boundaries as essential.
The transhumanized version of ableism exhibits the favouritism of beyond biological structure typical abilities and perceived biological structures as deficient as being, in need of constant improvement, in a diminished state of being if they are not enhanced beyond biological structure typical abilities

Transhumanization of ableism related to humans

Until now a non- impaired person has been seen as someone whose body functioning performs within Homo sapiens typical parameters. This is changing, however. The ability of new and emerging science and technology products to modify the appearance of the human body and its functioning beyond existing normative species-typical boundaries allows for a redefinition of what it means to be non-impaired[26].

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[25] See footnote 3; Wolbring, G.Emerging technologies (Nano, Bio, Info, Cogno) and the changing concepts of Health and disability/impairment: A New Challenge for Health Policy, research and care (2006) Journal of Health and Development (India) 2, 1&2 19-37 Wolbring, G, KEY TERMINOLOGIES IN THE FIELD OF DISABILITY: Change through NBICS, talk on the 27th July, 2006 at a World Health Organisation meeting, http://www.bioethicsanddisability.org/whatishealth.html , 2006.,International Center for Bioethics, Culture and Disability

[26] Wolbring, G. HTA Initiative #23 The triangle of enhancement medicine, disabled people, and the concept of health: a new challenge for HTA, health research, and health policy, 2005, ISBN 1-894927-36-2 (Print); ISBN 1-894927-37-0 (On-Line); ISSN: 1706-7855 , http://www.ihe.ca/documents/hta/HTA-FR23.pdf,

One transhumanized form of ableism is the set of beliefs, processes and practices that perceive the 'improvement' of human body abilities beyond typical Homo sapiens boundaries as essential. It exhibits the favouritism of beyond Homo sapiens typical abilities and perceived human bodies as limited, defective, in need of constant improvement, as being in a diminished state of being human if they are not enhanced beyond Homo sapiens typical abilities.
There are three kinds of transhumanization of body ability enhancements:

(a) **external** -- by shaping the environment (transhumanized social determinants); (b) **internal reversal** -- by modifying bodily structures in a reversible fashion (transhumanized medical determinant); and (c) **internal non-reversal** -- by modifying bodily structures in a non-reversible fashion (transhumanized medical determinant).

Humans have modified their environment for a long time, in order to gain abilities that are not inherent in their body. This 'ability' to change the environment (transhuman social determinants) is viewed as the basis for the success of -- and essential for -- the *Homo sapiens* species (transhumanization of ableism).

However this is no longer seen as sufficient. In tune with the belief that the human body is deficient (transhuman medical model) -- which previously led to the design of external tools to extend the abilities of *Homo sapiens* (transhuman social determinants) -- we are moving increasingly towards changing the body itself to expand its abilities beyond those that are typical for *Homo sapiens* (transhuman medical determinant).

Internal transhuman interventions are consistent with the trend towards medicalization of the human body -- where variations in its structure and functioning are now more often labelled as deviations and diseases -- with the result that 'healthy' people feel 'unhealthy,' and bad about their bodily structure and functioning' [27]. The transhumanized version of ableism elevates the medicalization dynamic to its ultimate endpoint, namely, to see the enhancement beyond species-typical body structures and functioning as a therapeutic intervention (transhumanization of medicalization) [28].

Enhancement medicine is the new field providing the remedy and maintenance through surgery, pharmaceuticals, implants and other intervention on the level of the body. Science and technology is seen as having the potential to free everyone from the "confinement of their genes" (genomic freedom) and the "confinement of their biological bodies" (morphological freedom) through transhumanized internal medical determinant interventions. Transhumanized social determinant external interventions are not seen as enough anymore[29].

Transhumanized version of ableism related to non-human species

Another transhumanized version of ableism is the set of beliefs, processes and practices which champions the especially cognitive enhancement of animal species beyond species typical boundaries, leading to cognitively or otherwise 'enabled species.' This is seen as a way to alter the relationship between humans and other species, and to change how non-human species are judged and treated. This is often the approach. Instead of questioning the tenets of ableism, one tries to find ways for a disadvantaged group to become as able. "I can be as able as

[27] See footnote 26
[28] See footnote 26
[29] See footnote 26 and 3

you are, I am as able as you are" can be heard quite often, and is used here as a solution for the maltreatment of some animals.

This version of ableism favours cognitive abilities. There are other examples.

Besides racism and speciesism, favouritism towards cognitive abilities plays out in the developmental stages of humans whereby humans prior to birth and for a certain period afterwards are seen as not having full human rights due to their lack of certain abilities. Lack of certain cognitive abilities is also used as an argument to deny some rights to 'cognitively impaired humans.'
This same logic is also evident with respect to artificial intelligence, which may ultimately gain equal status to humans when it is seen as cognitively able enough. Human rights might then become an obsolete concept as once rights might not be based anymore on the fact that one is human but that one has a certain level of cognitive abilities (sentient rights). If it is eventually possible to separate cognitive abilities and consciousness from the human biological body, the resulting entity would gain rights by itself -- independent of the body.

Transhumanized version of ableism related to the environment

The environment transhumanized form of ableism is a set of beliefs, processes and practices which champions the a) enhancement of especially the Homo sapiens beyond species typical boundaries to cope with the environmental challenges to come b) shaping the environment (geo-engineering, gated biospheres…)
This could become especially popular if we reach a so-called 'point of no return,' where severe climate change consequences can no longer be prevented.

Ableism and transhumanism: The case of health

A recent study by the influential Nanotechnology consulting company Cientifica predicts that the market share of nanotechnology applications in the pharmaceuticals and healthcare sectors will increase from 2% today to some 80% of the 2015 US$ 1.5 trillion nanotechnology market in 2015[30].
The numbers might be driven by a variety of developments around the term health.

Medicalization of the term health:

The World Health Organization (WHO) definition of health defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[31]. This model through different wellbeing determinants combined the areas of "medical health" and "social health" under

[30] Cientifica Ltd. Half Way to the Trillion Dollar Market? A Critical Review of the Diffusion of Nanotechnologies, 2007,
http://www.cientifica.eu/index.php?option=com_content&task=view&id=68&Itemid=111,
http://www.cientifica.eu/files/Whitepapers/A%20Reassessment%20of%20the%20Trillion%20WP.pdf,
[31] World Health Organization. WHO definition of health, Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference,New York,19-22 June,1946. http://www.who.int/about/definition/en/ .

the term “health”. This meaning of health would allow for social determinants interventions to increase the social well being of people

However, increasingly societies and policies move away from the WHO definition of health interpreting the term “health” to mean “medical health”/ “medical illness”. “Health” is used in that case to cover the domain of "medical" determinants of "wellbeing." “Social health” is not covered anymore under the term “health.” This medicalization of the term health comes with an increased focus on medical individualistic ‘cures’ and a decrease focus on changing the environment to improve the situation of the human being. This shift in the interpretation of health seems to fit well with the medicalization of the human body[32].

Health and ableism

Many members in society exhibit forms of ableism which favour species typical normative abilities (seen as the healthy state) leading to a negative perception of being ‘less able’ than what is species typical (the disease, defect, disorder state). This form of ableism is often linked to the so called impaired people and the medical model of interventions which tries to fix the ill health of the person through medical/ technological interventions.
This form of ableism is expanding in recent timed. Increasingly one can observe that variations in body functioning which are within the norm of the species are being labelled as "diseases,” (e.g. shyness) generating demand for "medical" products[33]
This traditional form of medicalization artificially assigns a subnormal label toward normal variations of human characteristics. More and more variations of normal characteristics of the human body are labelled as defective and in need of fixing. In a recent issue of the Seattle times one reads:

The number of people with at least one of four major medical conditions has increased dramatically in the past decade because of changes in the definitions of disease. “The new definitions ultimately label 75 percent of the adult US population as diseased," according to calculations by two Dartmouth Medical School researchers.”[34]

This form of ableism also exhibits a rejection of any ability decrease like the one which comes with aging and looks for keeping the abilities of youth throughout life. Age-ism is one form of ableism. Within this ableism ageing is a disease as is death. This form of ableism leads to an increased focus on anti-aging, immortality/longevity research.

Health and Transhumanism:

Advances in science and technology are increasingly creating products to modify the appearance and functioning of the human body beyond existing norms and species-typical boundaries. This enables a model of health in tune with transhumanist philosophies. Within a transhumanist model of health, "health" no longer has the endpoint where someone is healthy if biological systems function within species-

[32]See footnote 26,
[33]See footnote 26,
[34] Susan Kelleher and Duff Wilson. Suddenly sick A special report , 2005, Seattle Times, http://seattletimes.nwsource.com/news/health/suddenlysick/

typical, normative frameworks. In this model, all *Homo sapiens* -- no matter how conventionally "medically healthy" -- are defined as limited, defective, and in need of constant improvement made possible by new technologies. (A little bit like the constant software upgrades we do on our computers.) "Health" in this model means having obtained maximum (at any given time) enhancement (improvement) of one's abilities, functioning, and body structure. "Disease" is identified in accordance with negative self-perceptions of one's non-enhanced body. The transhumanist model of health and disease defines the human body in general as defective, or as a work in progress, elevating medicalization to its ultimate endpoint; namely, to see enhancement beyond species-typical body structures and functioning as a therapeutic intervention (transhumanization of medicalization). This moves medicalization to its logical conclusion by adding the enhancement of body appearance and functioning above species-typical norms and boundaries to the mix. Interventions on the level of the individual that add new abilities or improve on the existing abilities of *Homo sapiens* are seen as the remedy for ill medical health. Enhancement medicine is the new field providing the remedy through surgery, pharmaceuticals, implants and other means. Notions of disease prevention, public health, healthy community, health promotion, and the actions they entail, all change substantially in the transhumanist enhancement model[35]

Transhumanism and Religion:

A recent polling of World Transhumanist Association members revealed that 24% self identify as Religious or spiritual with 6% Spiritual, 4% Protestant, 2% Buddhist, 2% Religious humanist, 2% Pagan or animist, 2% Catholic, 2% Unitarian-Universalist, 2% Other religion, 1% Hindu, 1% Jewish, 1%Muslim[36]. The interest of transhumanists in religions and faith is further outlined by Hughes in a recent paper

> "the World Transhumanist Association sponsored a conference on transhumanism and religion at the University of Toronto in the summer of 2004, which resulted in a special issue of the *Journal of Evolution and Technology*. That conference spawned the Trans-Spirit project and email list, an effort to discuss emerging neurotheological research and possible neurotechnological adjuncts to spiritual ends; this is also the agenda of the Institute for Ethics and Emerging Technologies' new Cyborg Buddha Project (IEET, 2007). In 2004 Unitarian-Universalists formed the Transhumanist UU Network (Hughes, 2005) and in 2006 the Mormon Transhumanist Association incorporated in Utah (MTA, 2007)."[37]

The introduction article "Religion and Transhumanism: Introducing a Conversation" in the special issue on Transhumanism and Religion by the Journal of Evolution and Technology in 2005 describes the history and relationship of transhumanism and religion as follows

[35] See footnote 26,
[36] See footnote 24
[37] See footnote 24

> "Within the past two years a conversation has begun to emerge between members of the World Transhumanist Association and various religious individuals and groups. In part, this has involved transhumanists acknowledging that religion continues to be a significant cultural force, influencing certain public discourses, and so must be taken seriously. It has also involved various theologians and religious ethicists seeing the need to consider and address the emerging technological worldview represented by transhumanism, resulting in a recognition that there is something compelling about the transhumanist vision of the world; touching on a desire for a life that overcomes the brokenness of this world, a place where pain and suffering are eliminated. This is a longing that is articulated in many religious traditions, those that subscribe to a distinctive eschatological belief in a future where humanity is perfected and transformed. However, within these areas of consonance, transhumanism also advocates some notions about the nature of humanity and the role of technology that can be problematic for some (or perhaps many) approaching from a religious worldview. "[38]
> The dialogue represented in this issue traces its roots to 2003, when a group who were part of the Templeton Oxford Summer Seminars in Christianity and the Sciences invited the World Transhumanist Association (WTA) president Nick Bostrom, to an informal conversation on the ideals and values of transhumanism. This meeting provided a helpful interaction, as Bostrom presented the central ideas of transhumanism and its relationship to the idea of a posthuman existence. This discussion also resulted in an informal working paper by this group entitled, "A Platform for Conversation: Transhumanism and the Christian Worldview". This collaborative piece attempted to define transhumanist philosophy and the posthuman vision in order to reflect on the commonalties as well as challenges posed to the Christian worldview. While recognizing shared values within the Christian and Transhumanist narratives (desires for eternal life, humanity being changed into a perfected self and direct involvement in the creative process) it also highlighted the inherent problems of understanding fallible humans acting as co-creators or engineers of their own grace and perfection. "[39]

Hughes article[40] outlined further the commonality and differences between different religions, denominations and faiths and different aspects of transhumanism.

Transhumanism and concepts used in religious/theological/faith discourses

Taking into account the interest of quite a few transhumanist in religions it is logical that transhumanized version of religious/theological/faith/denomination concepts are appearing. Furthermore as many concepts used in religious/ theological/faith/denomination discourses are exhibiting forms of ableism it seems logical that transhumanized forms of ableism are used as the basis to transhumanize these concepts.

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[38] Campbell, H. a. W. M.**Religion and Transhumanism: Introducing a Conversation** (2005) *Journal of Evolution and Technology 14*, 2, http://www.jetpress.org/volume14/specialissueintro.html,
[39] See footnote 38
[40] See footnote 24

Among them are Imago Dei, Blemish, Children of God, dignity, person, Co creator, Creatio Continua, playing God and soul all of which I dealt with in my WCC ebook[41]. To give just one example

A transhumanist Imago Dei[42]

The interpretation of Imago Dei has a long history and many groups have a stake in the interpretation of Imago Dei[43]. The interim statement "A Church of All and for All" which was presented by the Ecumenical Disability Advocacy Network (EDAN) to the World Council of Churches CENTRAL COMMITTEE[44] outlined in article 22-32 EDAN's thoughts on Imago Dei as it relates to disabled people[45].

Transhumanists also put forward a transhumanists angle/interpretation of the concept of Imago Dei. If one looks at how the Irenaean theodicy is described by Hicks a Philosopher of Religion & Theologian[46] and by Hart an Eastern Orthodox theologian[47] *i*t is not surprising that transhumanists might see the Irenaean Theocrisy as a way to add a transhumanist angle to the concept of Imago Dei. As Walker writes:
"The Irenaean tradition in Christian theology understands humans maturing in terms of self-development. I have argued that it is possible to understand this Irenaean process of self-development in terms of becoming godlike."[48]

Walker moves the "Irenaeanism to its logical conclusion" [49] towards a Neo-Irenaeanism[50].

> "There is a third and absolutely crucial step in humanity's progression. We must work towards the identity stage: humans must become gods. The reason is manifest: the real problem of evil is not how to justify the existence of evil, but how to eliminate it. For as we noted above, it is not the mere possession of free will that guarantees the production of evil, rather it is free will in conjunction with our finite nature that leads to the production of moral evil. Thus, it is our duty to attempt to move beyond our merely finite selves, to become gods. When and only when, we have discharged this duty will evil be expunged, only then will the problem of evil be fully answered. [51]."
>
> "In any event, our task as scientists, philosophers, theologians, and indeed as Christians, is to examine ourselves and our understanding of

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[41]See footnote 24;and 1
[42]See footnote 54.
[43]See footnote 54.
[44] EDAN, Interim statement "A Church of All and for All", http://www2.wcc-coe.org/ccdocuments2003.nsf/index/plen-1.1-en.html, 2003.,World Council of Churches webpage Document PLEN 1.1
[45]See footnote 54.
[46] Hicks, J., (1981) in Encountering Evil: Live Options in Theodicy (Stephen T.Davis, Ed.) John Knox Press, Atlanta. http://www.faithnet.org.uk/AS%20Subjects/Philosophyofreligion/irenaeantheodicy.htm
[47] Hart, D. B., "The Anti-Theology of the Body,", http://www.thenewatlantis.com/archive/9/hart.htm , 2005.,The New Atlantis Magazine webpage
[48] Campbell, H. a. W. M.Religion and Transhumanism: Introducing a Conversation (2005) Journal of Evolution and Technology 14, 2, http://www.jetpress.org/volume14/specialissueintro.html, Walker, M, Becoming Gods: A Neo-Irenaean Theodicy, http://www.permanentend.org/evil.html, 2005.,webpage
[49] See footnote 48
[50] See footnote 48
[51] See footnote 48

God, and do everything in our power to recreate ourselves so as to close the gap on this difference. What better way to honour our Father? [52]"

Though Walker thinks there is a way to use the Imago Dei for transhumanist purposes others such as Garner believe that at least certain parts of Imago Dei could also represents a possible point of disjunction with Transhumanism [53]

Theological view of health, disease

A lively secular discourse around the concept of health as outlined above. What is the state of the debate within the religious/theological/denomination/faith discourse? Looking at the incident of appearance of different health related terms in different translation of scriptures highlights the difference in understanding of terms at any given time because translators over the times used their cultural understanding of the terms when they encountered the terms in the scriptures. Table 1) Incident of Health terms in different translations of the scripture[54]

[52] See footnote 48

[53] Garner, S.Transhumanism and Christian Social Concern (2005) Journal of Evolution and Technology 14, 2, http://www.jetpress.org/volume14/garner.html, http://www.jetpress.org/volume14/garner.pdf,

[54] Wolbring, G. (2007). World Council of Churches and new and emerging technologies. Able-ism: A prerequisite for transhumanism World Council of Churches, Geneva http://www.oikoumene.org/en/programmes/justice-and-diakonia/faith-science-technology-and-ethics.html and on my webpage http://www.bioethicsanddisability.org/wcc.html

	Sickness	Health	Disease	Illness	Disability/ Impairment	Curing/ Cure	Healing/ Heal	Physician/ Healer/doctor	Miracle
New International Version	13	18	62	16	0/0	0/34	39/182	5/0/5	42
King James Version	23	17	34	0	0/0	0/9	14/149	11/1/3	37
New King James Version	21	16	25	3	00	0/11	22/189	11/0/0	17
21 Century King James Version	23	16	34	0	00	0/12	15/151	11/1/3	37
Holman Christian Standard Version	20	28	85	16	1/0	1/23	40/179	4/1/7	26
Worldwide English New Testament	7	0	6	0	0/0	0/0	2/130	0/0/16	0
Contemporary English Version	10	48	103	3	0/0	0/13	11/240	0/0/10	133
Revised Standard Version	21	25	95	9	0/0	0/16	34/191	18/3/0	13
New Life Version	47	0	186	0	0/0	0/4	31/245	0/0/12	110
Amplified Bible	19	37	86	8	0/0	5/40	35/163	13/1/1	60
The Message	10	68	89	5	0/0	2/13	39/216	3/3/16	70

It is of interest to note the non-existence of terms such as disability and impairment. However if one takes Pilch's interpretation of the terms sickness, disease and illness[55] one could correlate illness with disability a cultural interpretation of a misfortune and disease with impairment being a biomedical problem.

The difference in the incident of curing and healing is also significant. Pilch interprets the discourse within medical anthropology to mean that **curing** is the outcome anticipated relative to a disease, namely, a successful attempt to gain effective control over disordered biological and/or psychological processes[56] whereby **healing** is directed toward illness and is an attempt to provide personal and social meaning for the life problems created by sickness, whether it is a disease or an illness. [57]

[55] Pilch, J. J.Improving Bible translations: the example of sickness and healing (2000) Biblical Theology Bulletin 30, Winter 129-134, http://www.findarticles.com/p/articles/mi_m0LAL/is_4_30/ai_94332352,
[56] See footnote 55
[57] See footnote 55

Furthermore whether one uses the terms healer/ physician or doctor also has consequences. The role of the healer and the process of healing at the time of Jesus is described by Guijarro[58]

Pope John Paul II defined medicine in 1983 in his address *to members of the World Medical Association as follows*[59]

> "It is necessary first of all to help man to live and to surmount the handicaps which impair the normal functioning of all his organic functions, in their psycho-physical unity."

Peters a professor of Systematic Theology at Pacific Lutheran Theological Seminary and the Graduate Theological Union in Berkeley, California cites from a reprint in the Journal Origins of the 1983 address of Pope John Paul II[60] '

> 'From a Christian perspective, then, health envisions optimal functioning of the human person to meet physiological, psychological, social, and spiritual needs in an integrated manner.''

The quote from Pope John Paul II seems to be consistent with the WHO understanding of health[61].

However the question is: What is optimal? This is not a static concept but a term embedded into societal realities and structures. Indeed a transhumanized version of health would interpret the term optimal different than the late Pope John Paul II. A debate around the interpretation of the term optimum and its boundaries or lack thereof is needed to be able to interpret the quote from Pope John Paul II

The protestant Church of Germany in a publication from 2002[62] acknowledges the reality of science and technology driven reinterpretation of the terms health and disease when they state

> "So wird beispielsweise die sich ausweitende prädiktive genetische Diagnostik, die individuelle Risikoangaben für unterschiedliche Krankheitsanlagen machen kann, Fragen nach der Definition von Krankheit und Gesundheit neu stellen."

> "The increased use of predictive genetic diagnostic and the individual risk assessment for different disease predepositions will lead to the renewal of questions in regards to the definition of health and disease (Translation paraphrased by author) "

They do not state where the concept of health might go, however their publication seems to suggest that the EKD sees the term health within a medical model framework.

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[58] Guijarro, S.Healing stories and medical anthropology: a reading of Mark 10:46-52 (2000) Biblical Theology Bulletin 30, 4 46-52, http://findarticles.com/p/articles/mi_m0LAL/is_3_30/ai_94330270,

[59] Pope John Paul IITHe Danger of Genetic Manipulation Address to members of the World Medical Association (1983) Origins 13, 386-389, http://www.ewtn.com/library/PAPALDOC/JP2GENMP.HTM,

[60] Peters, T.The Soul of Trans-Humanism (2005) Dialog: A Journal of Theology 44, 4 381-395

[61] See footnote 31

[62] Evangelische Kirche Deutschland (EKD) EKD-Texte 71, 2002, Im Geist der Liebe mit dem Leben umgehen Argumentationshilfe für aktuelle medizin- und bioethische Fragen, http://www.ekd.de/EKD-Texte/2059_30634.html, 2002.,webpage Evangelische Kirche Deutschland

It is interesting that the EKD paper states that there is a legal right for freedom of research into decreasing the suffering from diseases and healing of diseases (Art. 5 Abs. 3 GG). That statement opens up all kind of consequences once the health and disease term moves towards a transhumanist model understanding.

Harakas a former professor of theology at Holy Cross Greek Orthodox School of Theology in Brookline, Massachusetts covered health in a paper he wrote for the Greek Orthodox Archdiocese of America[63] which raises numerous questions.

Four issues in the writing of Harakas are of importance
1) Harakas interprets medicine and healing only as dealing with physical wellbeing omitting the social well being. He seems to fit with today's climate to limit the more holistic view of health as outlined in the 1948 definition of health.
2) The concepts of "the healer of soul and body" "care of one's own health and societal concern for public health" are open for interpretation and the transhumanist/enhancement model of health, disease, wellbeing and disability/impairment very likely allows for a serious reinterpretation of the concept "healer of soul and body".
3) Interpreting the concept of 'synergy' to mean that human talents and abilities should be used for the achievement of human potential is up for reinterpretation as the transhumanist model and technological advances change the meaning of 'human potential'.
4) When Harakas talks about the "widest possible distribution of health care and life-protecting facilities and resources, rather than a concentration of such resources for the select few" this statement could be construed to be in sync with Murrays vision of the Disability adjusted life years[64] where one treats the ones the least ill as in this case more people could be treated. His believe that 'very little objection was expressed by the Church" could be interpreted to mean that indeed the Church just goes with the flow leading in the end to the acceptance of the transhumanist/enhancement model of health, disease, wellbeing and disability/impairment.

In Harakas[65] article one reads further

> "Mental health: values, therapies, institutions.
> At the heart of the Eastern Orthodox Christian approach to mental health is the understanding of human wholesomeness in the doctrine of theosis. True and full human well-being is the consequence of our proper relationship with God (Demetropoulos, pp. 155-157). Mental health is one dimension of this total relationship. Since no individual human being perfectly achieves this relationship, it may be noted that, just as we are all in some measure "less than fully human," in the same manner we are all in some measure lacking in full mental health."

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[63] Stanley S.Harakas. "For the Health of Body and Soul: An Eastern Orthodox Introduction to Bioethics". 1980. www.goarch.org/en/ourfaith/articles/article8076.asp. Holy Cross Press, Brookline, MA, Greek Orthodox Archdiocese of America.
[64] Wolbring, G, KEY TERMINOLOGIES IN THE FIELD OF DISABILITY: Change through NBICS, talk on the 27th July, 2006 at a World Health Organisation meeting http://www.bioethicsanddisability.org/whatishealth.html , 2006.,International Center for Bioethics, Culture and Disability and footnote 54
[65] See footnote 63.

This quote has obvious consequences with the rise of the transhumanist models of health, disease, wellbeing and disability/impairment.

The theologian Ronald Cole-Turner states among others

> "It is in the actions of Jesus Christ where we find a framework for evaluating genetic defects. We have the necessary framework for comprehending the notion of a genetic defect. A human genetic defect is that which causes a condition comparable to those which evoked the compassionate intervention of Jesus of Nazareth and which is therefore disclosed as contrary to the purposes of God. Specifically, these defects are skin diseases, mental and neurological disorders, losses in hearing, sight, the usage of limbs among other unnamed diseases.[66]"

Ronald Cole Turner is also quoted by Daly a PhD candidate at the School of Divinity, University of Edinburgh[67]

> "Therefore, what counts as a defect—whether on the genetic or some other level—can be discerned "*in reference to God's intentions*." Therefore, "that which is defective is that which may be changed or altered" by technology. Thus, genetic engineering can be viewed theologically as redemptive and creative technology.[68] p. 92 "

These quotes also have obvious consequences with the rise of the transhumanist models of health, disease, wellbeing and disability/impairment.

Elsewhere[69] I give many examples of how WCC members and committees follow a medical view of disabled people and put a lot of emphasis on using the concept of 'medical reason' and the elimination of diseases, disorders and defects as a justification for the selective usage of science and technology products and applications.

The EDAN report "A Church of All and for All" eloquently identifies (point 13-16) the medical, the deficiency model as being a dominant model in the theological interpretation of the scripture and questions in it's section "Disabilities and Healing" (points 33-50) the medical model of disability and the victims theology and asks for a rethinking of the interpretation of the healing actions of Jesus putting in essence forward a social model of disability interpretation of the healing events described in the scripture[70]. I would add that Hebrews 12:12-14
12 Therefore, strengthen your feeble arms and weak knees. 13"Make level paths for your feet,"[a] so that the lame may not be disabled, but rather healed
could be also interpreted as supporting the elimination of the social barriers over the medical fix.

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[66] Ronald Cole-Turner (1993). The New Genesis: Theology and the Genetic Revolution John Knox/Westminster Press, Louisville, KY

[67] Daly, T.Life-Extension in Transhumanist and Christian perspectives: Consonance and Conflict (2005) Journal of Evolution and Technology 14, 2, http://jetpress.org/volume14/daly.html, http://jetpress.org/volume14/daly.pdf,

[68] See footnote 67

[69] See footnote 54

[70] See footnote 44

From an ableism based blemish towards a transhumanized version of ableism based Blemish?[71]

Step one: The blemish of deviating from a species typical norm

Matthew 5.48 and Leviticus 21.16-23 are often used to exclude anyone with a 'blemish' from priestly service which plays itself out in numerous denominations that disabled people can not be priest within their church. [72]
Luke 5:20,Luke 5:23, Mark 2:1-12 the above and others [73] are often interpreted in such a way that 'impairments' are seen as (a) a punishment; (b) a test of faith; (c) the sins of the fathers visited upon the children; (d) an act of God and as if the Bible regards people with disabilities as unworthy and whose injuries or sicknesses are a punishment for sin. Many question these connections[74]. Even the Gospel of John seems to understand that people might link impairment to sin and tried to dispel that misperception (John 9:1-3) [75]

> "As he passed by, Jesus saw a man blind from his birth. And his disciples asked him, "Rabbi, who sinned, this man or his parents, that he was born blind?" Jesus answered, "It was not that this man sinned, or his parents, but that the works of God might be made manifest in him" (John 9:1-3)."

However the employment of the blemish concept has a new consequence.

Step Two: The transhumanist blemish: The language of perfection[76]

There is more to the language around blemish and sin. It can be seen as part of the language of perfection. What are the consequences of such language of perfection?
What if one takes the language literally and not metaphorical as all the people who believe in the concept of blemish and sin do?
What if one does believe in Anthropomorphism which ascribes God with the physical characteristics of the human body and its properties and assumes that God judges the human body by its 'suboptimum' functioning?

What if one agrees with a language of perfection which defines perfection in terms of independence and completeness and interprets divine perfection as the absolute case of completeness and independence of being? A language which led to the arguments and reasoning's around blemish and sin.

Walker and Campbell believe that "one could understand transhumanism in terms of a perfectionist ethic"[77]. Walker describes the issue of perfectionism in one of his other papers[78].

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[71]See footnote 54
[72] Byzek, J, Keeping the Faith, http://www.newmobility.com/review_article.cfm?id=627&action=browse, 2002.,New Mobility webpage
[73] Nancy Weinberg & Carol SebianThe Bible and Disability (1980) RehabilitationCounseling Bull 273, 273-281
[74]See footnote 54
[75] See footnote54
[76] See footnote54

What are the consequences of the convergence of the acceptance of the anthromorphological language of blemish and sin, the perfectionist language, the transhumanist/enhancement models of health, disease and disability/impairment, the transhumanist interpretation of Imago Dei, Co creation, Irenaean tradition, God's children and perfectionist ethics?

- No one would be without blemish no one could perform a service for God, no one could become a priest and everyone would be a sinner till one reaches the God like state. This is in essence the theological counterpart to the secular interpretation of the transhumanist/enhancement model of health, disease and disability/impairment.
- Parents would be responsible to bring their children to the God like state.
- People would be responsible to bring themselves to a God like state

The scripture parts which are interpreted as supporting the traditional blemish and sin concepts could also be seen as supporting the above three actions and the transhumanized version of blemish and sin.

Matthew 5.48 and Leviticus 21.16-23 do not state how to remove the blemish the sub-perfect appearance morphology of the body. They do no state whether God has to 'fix' them to perfectibility or whether humans can do it by themselves.

The transhumanized version of blemish concept seems to be also in tune with (Genesis 1:26). "Humanity has the mark of God's image and is called to grow into God's likeness "if one accepts the transhumanist version of Image of God.

The scriptures -if one accepts the anthropomorphological interpretation- do not state what the endpoint of perfect would be. Leviticus 17 states "Say to Aaron: 'For the generations to come none of your descendants who has a defect may come near to offer the food of his God".

But defect is a very general term and although in Leviticus 18-20 some examples are given they have to be seen as examples and not as an exhaustive list. In some cases examples of blemish and what would not be perfect are given but in other places no qualifiers are given leaving the terms defect, perfect and blemish open for interpretation.

Cooper offers a second way of interpreting perfection which takes its clue from Christology.

> "Christ-centeredness leads us to a very different story of the nature of God's life and a very different understanding of perfection, dependence, and limitation. It holds that we find the meaning of divine perfection through the life and teaching of Jesus and that we move to perfection in our own lives through Christ and by relating to others as he did. Perfection, here, is not first of all, or ever, a matter of independence or completeness. It means valuing others and attending to others simply because God values them and not because of their achievement or station in life or because of the group to which they belong. When we think of the meaning

[77] See footnote 48,
[78] See footnote 48

> of perfection through this Christological vision, then God's perfection becomes the integrity of steadfast love, especially to the weak and scorned." [79]

This interpretation might allow for a temperance of the transhumanist models based actions and the usage of science and technology which is less focused on changing the morphology of individuals towards a God like state with the accompanying appearance of the techno poor which will be seen even more as blemished and sub-perfect[80] but more on the changing the societal realities of inequities, prejudice and other societal programs.

Interreligious relations & dialogue and the role of transhumanism and ableism

If one reads the document "Fortresses into wellsprings soothing the thirst for spirituality Affirming human dignity my neighbour's faith and mine from the meeting "Religious identities: For better or for worse? An interreligious encounter in Geneva 12-14 November 2005"[81], the results of the survey performed before the conference "Critical moment in interreligious dialogue" which took place in Geneva from 7-9 June 2005"[82], the Introductory remarks by H.H. Aram I*, Catholicos of Cilicia, at the conference "Critical moment in interreligious dialogue" [83] and other numerous writings on interreligious relations and dialogue it seems to be obvious that no real progress can be made till one recognises and addresses the concept of ableism in its numerous forms.

Furthermore the excerpt of a recent paper by the former executive director of the World Transhumanist Association[84] highlights how different faiths, denominations, churches and religions react different towards different aspects of transhumanism as a whole and the different goals of transhumanists.

He writes among others

> "I argue that elements of transhumanism are compatible with interpretations of all the world's faiths, and that these compatibilities are being and will be built upon to create new, syncretic "trans-spiritualities" in which enhancement technologies are selectively incorporated by groups in all the religious traditions. The religious landscape of the future will range from the current

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[79] Cooper, B.The Disabled God (1992) Theology Today 49, 2 173-182, http://theologytoday.ptsem.edu/jul1992/v49-2-article3.htm,
[80] See footnote 54
[81] World Council of Churches, FORTRESSES INTO WELLSPRINGS SOOTHING THE THIRST FOR SPIRITUALITY, AFFIRMING HUMAN DIGNITY , http://wcc-coe.org/wcc/what/interreligious/forbetterorforworse-wellsprings-e.html#commitments, 2006.,World Council of Churches
[82] Courtney T.Goto, Pre-conference survey summary, http://www.oikoumene.org/en/resources/documents/wcc-programmes/interreligious-dialogue-and-cooperation/interreligious-trust-and-respect/geneva-june-2005-documents/pre-conference-survey-summary.html , 2005.,World Council of Churches
[83] H.H.Aram I, Introductory remarks by H.H. Aram I*, Catholicos of Cilicia, 7 June 2005 at The "Critical moment in interreligious dialogue" conference took place in Geneva from 7-9 June 2005, http://www.oikoumene.org/WCC_moderator_H_H_Aram_I.1045.0.html?&MP=935-1037, 2006.,World Council of Churches
[84] See footnote 24

> prevailing bioconservative resistance to an enthusiastic embrace of transhuman possibilities."[85]

Hughes states further

> "Outside of the Abrahamic traditions we see even more openness to the transhumanist project and metaphysics. Shinto and animist traditions, which see spirit in even inanimate objects, have had little problem with the idea of human or animal enhancement, and should have less problem with the idea of spiritual machines. Traditional Hindu (Singh, 2006) and Buddhist theories of ensoulment (Hughes, 2007) certainly assume that a supernatural spirit, separate from the brain, must be united with a biological body, with both breath and a brain. But both traditions also believe consciousness can evolve and migrate from animal to human to demi-god form, with very long-lived bodies, some of whom are human-animal hybrids, have multiple arms and legs, multi-hued skin, and superpowers; within the Hindu-Buddhist cosmology the prospect of the posthuman should not come as too much of a shock. Nor does human evolution threaten the gods in the Hindu or Buddhist traditions; while humans may be occasionally punished for hubris against the gods in stories in both traditions, the soteriological goal for Hindus is to become one with the gods, and for Buddhists to evolve to surpass the gods altogether. Buddhists and Hindus have thus, so far, been more comfortable with transhumanist ideas of biological enhancement, machine intelligence and uploading. For instance, the Dalai Lama has famously opined that human consciousness could be instantiated in a machine (Hayward and Varela, 1992), and is actively collaborating with the neuroscientific investigation of the brain processes involved in meditation. A characteristic Asian metaphysics may contribute today to the greater openness of Asian societies, from India to Japan, to the enhancement project"[86]

These excerpts clearly show that people involved in interreligious relations and dialogue have to address transhumanism in a much more proactive way.

A need to address ableism and transhumanism[87]

Judgement based on abilities is so ingrained in every culture that its use for exclusionary or otherwise negative purposes is seldom questioned or even recognized. In fact, groups who are marginalized due to some form of ableism often use that very sentiment to demand a change in status (we are as able as you are; we can be as able as you are with accommodations).

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[85] See footnote 24
[86] See footnote 24
[87] See footnote 24 and 54

Dealing with Ableism and Transhumanism is essential if one wants to diminish, reverse, and prevent the strife one can expect in regards to the disruptive potential of many nanoscale science and technology products such as the enhancement of animals (which will redefine the relationship between humans and animals), immortality and longevity research (which will redefine intergenerational relationships), molecular manufacturing of material from the atom level (which will redefine the trade system as we have today), and products intended to modify the appearance and functioning of the human body beyond existing norms and species-typical boundaries (which will redefine self identity and how we see other people, other species, the environment and ourselves).
Without dealing with the tenets of ableism and transhumanism one can not achieve poverty reduction; peace; better living standards (especially for traditionally excluded segments of the population); empowerment of people; dialogue among civilizations; dialogue and integration of mainstream science with traditional, local and indigenous sciences of diverse cultures; diversity; sustainability; and distributive justice**.** Without tackling ableism and transhumanism no real and durable sustainable equity and equality for any country, group, or individual will be achieved.
I propose the new field of Ability Studies[88] a discipline where the preceding challenges could be studied and which could help deal with the challenges ahead of us.

Ability Studies investigates: (a) the social, cultural, legal, political, ethical religious and other considerations by which any given ability may be judged, and which leads to favouring one ability over another; (b) the impact and consequence of favouring certain abilities and rejecting others; (c) the consequences of ableism in its different forms, and its relationship with and impact on other isms; (d) the impact of new and emerging technologies on ableism and consequent favouritism towards certain abilities and rejection of others; and (e) identification of the abilities that would lead to the most beneficial scenario for the maximum number of people in the world.

Ability Studies includes among others:

- the traditional disabled
- the techno poor disabled
- people who gain enhancements
- other non human targets for ability modifications
- new life forms

and looks at areas such as:

- ableism supported prejudices
- ableism differences between cultures
- ableism-driven judgement of countries
- ableism and development
- influence of ableism on numerous concepts such as biological diversity, cultural diversity, the culture of peace, and interpretation of documents treaties, and laws.
- relationship between ableism and transhumanism

[88] See footnote 24 and 54

- relationship between ableism, transhumanism and religions, denominations, churches, faiths and theological concepts

But independent of ability studies, religions, denominations, churches and faith have to identify and face their own ableisms as they might make it impossible to question transhumanism. If one's ableism makes it untenable to question transhumanism one has to look at what a transhumanized world would look like for one's members and the world and one's relationship to other denominations, churches, religions and faiths. One has to perform impact foresight exercises. These exercises and the discourse can't be just between academics but has to be much broader. It can't be a top down approach by academics and policy people towards the people. It should be a bottom up discourse. The discourse can't be just between the academic 'experts' and the 'experts' from religions, theologies, faiths, denominations and churches but it has to be a broad bottom up discourse

As one reads in a recent publication of the World Council of Churches:

> "Context matters for both faith and science. In assessing research agendas and technologies, it is both reasonable and necessary to start again and again from the very simple question: Why are we doing this? Given the pragmatic, result oriented and often utilitarian ethics of the dominant technological culture, the question can be rephrased in these terms: What is the problem this technology (or science) is supposed to address? Who defined the problem and constructed the solution, and to what end? Is the 'problem' simply being defined according to the (commercial) 'solutions' that are available or that would be most profitable to those offering them? If context matters, we need to ask again and again not only Who will benefit? but also Who is most likely to lose out?"[89]

[89] Working Group on Genetic Engineering of the Justice, P. a. C. T. W. C. o. C. &. W. A. f. C. C. (2006). Science, Faith & New Technologies: Transforming Life Volume II Science, Faith & New Technologies: Transforming Life Volume II Genetics, Agriculture and Human Life Discussion-Document World Council of Churches & World Association for Christian Communication , http://wcc-coe.org/wcc/what/jpc/pa-booklet-bio.pdf