

Different cultures, One world

Dialogue between Christians and
Muslims about globalizing technology

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General introduction

Henk Jochemsen and Jan van de Stoep

Dialogue

In our globalizing world community, societies and governments face major problems, if not crises. Today, they are often shaped by the three Fs: finance, fuel and food. These refer, respectively, to the financial and economic crises that have permeated our lives in 2009, to our dependency on fossil fuels that are gradually depleting and whose by-product (CO₂) is partly responsible for negative climate changes, and to problems with food security that are likely to be aggravated by climate changes and by the use of biomass for energy production. In addition, international security is an issue, in part because there are fundamental cultural and religious differences between groups of people living together in the same country and in different countries. Not astonishingly, this has resulted in extensive discussion on the role of religion in public life in pluralistic democratic societies. Hence, in Western civilization, we see that religion has become a subject of public debate that is broader than the political debate on government policy regarding immigration and cultural minorities. In the Netherlands, this can be observed in, for example, the Scientific Council for Government Policy (WRR) report on (religious) faiths in the public domain (Van de Donk et al. 2006) and in the Netherlands Study Centre for Technology Trends (STT) publication on technology and religion (Van Well 2008).

In the context of the latter project, Professor Egbert Schuurman, former chair of Reformational philosophy at Wageningen University and Research Centre (WUR), studied the writings of Muslim scholars on modern Western culture and technology. His valedictory address at WUR in September of 2008 focused on this topic (Schuurman 2008).¹ In that address, he, firstly, contended that the crises mentioned above are closely associated with scientific, technological and economic developments in our industrialized world and, secondly, proposed a different cultural paradigm. He also indicated that much of the Islamic critique of modern Western culture is similar to his own work. This led him to propose the initiation of a dialogue between Muslim and Christian scholars on modern Western culture and in particular its technicistic character.

The proposed purpose of this dialogue was to explore the possible ways in which we can mitigate tensions between Western and Islamic civilizations and together seek a peaceful solution to the present crises. In our globalizing world, we are all neighbours and all responsible citizens. We thus all have a responsibility to deal with international crises and tensions in the most peaceful manner possible. This applies especially to those in

¹ For a summary of this address, see Chapter 2 in this book.

academic positions. However, this responsibility does not require us to seek consensus at the level of religions. That is not realistic. It does implore us to engage in cultural dialogue with one another. This cultural dialogue should take all participants' religions seriously and acknowledge their differences while dealing with those differences in ways that are respectful.

Project

In reaction to Schuurman's plea, some organizations took the initiative to start a project that sought to initiate cultural dialogue between scholars from Christian and Muslim backgrounds. The Foundation for Reformational Philosophy and the Islamic University of Rotterdam were responsible for the realization and content of this project, and were supported in this endeavour by the Lindeboom Institute and the Institute for Cultural Ethics, both in the Netherlands. The project was directed by a steering committee consisting of Egbert Schuurman (chairman), Emin Akcahuseyin (Islamic University of Rotterdam), Peter Jansen (project secretary), Henk Jochemsen (editor), Jan van de Stoep (editor) and Hillie van de Streek (Foundation for Reformational Philosophy).

In this project, a number of Christian and Muslim scholars were asked to read and react to the Schuurman's farewell address while keeping the following questions in mind: (1) What is your opinion regarding Schuurman's analysis of the crisis of Western culture?; (2) What is your opinion of his alternative, namely the garden model?; (3) What other models/metaphors are offered by or can be formulated on the basis of Muslim or Christian sources?

The project participants were acquired through convenience sampling. In essence, we sought out and approached a number of scholars from diverse professional and national backgrounds. The Christian scholars were predominantly contacted by the Foundation for Reformational Philosophy while the Muslim scholars were largely selected by the Islamic University of Rotterdam. We endeavoured to involve female scholars but, unfortunately, none were able to participate.

This project sought not to reach full consensus on the issues at stake but rather to initiate an open and scholarly debate in which perspectives could be communicated and ideas could be exchanged. Although no policy recommendations were expected, they were more than welcome. Interestingly, some degree of consensus on how cultural development should proceed did arise (see Chapter 13).

The responses to the three questions posed to the participants varied extensively and reflected a number of different approaches. A preliminary draft of all participants' contributions was produced and discussed extensively at a working conference held in the Netherlands in June of 2009. That conference was marked by kind and respectful collegiality and resulted in the editors asking many of the contributors to revise or elaborate their paper. Unfortunately, not all the authors in this project could participate in the conference but their ideas have nonetheless been incorporated in one way or another. Revised contributions were subsequently edited and, when changes were extensive, sent back to the author for approval. The resulting product is this publication. Below, we briefly summarize the various chapters in order to provide you with an impression of this compilation and how it is structured.

Contributions

Immediately following this general introduction (Chapter 1) is a chapter by Egbert Schuurman. In this chapter (Chapter 2), Schuurman presents the main elements of his valedictory address. As these elements are the points of departure taken in the subsequent chapters and because the other chapters are essentially a response to Schuurman's valedictory address, it is imperative that Chapter 2 be read prior to reading any other chapter.

Following Schuurman's chapter is a contribution from professor Duran (Islamic University of Rotterdam). In this chapter (Chapter 3), Duran positions Schuurman's approach to technology in a broader discussion on the philosophy of technology by referring to the work of Habermas, Marcuse and Weber. He then compares Schuurman's perspective on Western culture to that of the famous Muslim scholar Bediuzzaman Said Nursi and outlines interesting similarities between the two.

The following chapter is a paper by the American scholar James Clement van Pelt (Yale University). In this chapter (Chapter 4), van Pelt elaborates on Schuurman's criticism of technology. He presents an imminent criticism of technological developments and the dominant position of technology in modern society. In his view, this is problematic and dangerous. He subsequently argues that our culture needs to rediscover the importance of a number of values that, according to him, the three Abrahamic religions (Judaism, Christianity and Islam) share.

In Chapter 5, Schuurman's successor at the Delft University of Technology, Marc J. de Vries, expands on Schuurman's lecture and discusses the relationship between technological developments in Western culture and Christianity. He refutes the contention that Christianity has introduced a utopian attitude in Western technological developments and argues that Christianity actually teaches modesty in our pursuit for perfection. He further claims that this modesty should also characterize our application of Schuurman's garden model in modern culture.

The chapters described thus far are characterized by direct interaction on the part of the author with Schuurman valedictory address and subsequent elaboration on certain aspects. The chapters that follow are slightly different in their approach. They tend to first select a view or thesis posited by Schuurman and then further develop it in the context of a given philosophical or theological framework.

In Chapter 6, René P.H. Munnik (University of Tilburg) presents a Roman Catholic perspective on technology. He argues that technology is, in principle, positive but agrees with Schuurman that the expectations we hold with respect to technology must be put in perspective. He additionally makes some interesting remarks on Schuurman's garden model.

The four chapters that follow contain contributions by Muslim scholars. These contributions mainly convey an Islamic approach to certain problems associated with modern cultural developments and suggest solutions that are in accordance with Islamic teachings.

In Chapter 7, Muslim theologian Ahmed Akgunduz, rector of the Islamic University of Rotterdam, argues that ecological concern is an integral part of Islamic faith.

He uses the historical example of the Ottoman Civil Code (Istanbul 1314) to demonstrate how environmental concerns in that historical context were elaborated such that they became concrete legislation for the protection of the natural environment and the promotion of cleanliness in public life.

Similarly, in Chapter 8, Pakistani scholars Abdul Majid (Society for Interaction of Religion, Science and Technology and the Hazara Society for Science-Religion Dialogue) and Fazli Karim (Hazara Society for Science-Religion Dialogue) elaborate on the topic of human responsibility for the natural environment by referring to Islamic teachings on this issue. They join De Vries in his rejection of the thesis that religion is anthropocentric and thus responsible for the exploitation of nature. They assert that, in Islamic teachings, God is seen as the Creator and Sustainer of the world in which signs of God can be observed. Human beings are vicegerents that are accountable to God with respect to how they treat nature. In their view, the garden model can adequately guide human actions with respect to nature.

In Chapter 9, the American Muslim scholar Necati Aydin (Florida State University) moves our attention from the natural environment to the inner environment of human beings. He asserts that, in order to attain more respectful and sustainable governance of the natural environment, human beings must reject Enlightenment teachings regarding humanity and develop a different view of mankind. Building upon an anthropological model proposed by Muslim theologian Bediuzzaman Said Nursi, Aydin presents a perspective that may help to define the changes that should accompany a shift in the predominant paradigm of our culture.

Chapter 10 then turns back to the philosophy of technology. Its author, scientist Emin Akcahuseyin (Islamic University of Rotterdam), elaborates on some of the thoughts presented by Aydin and Akgunduz in earlier chapters and in other publications. In this chapter, Akcahuseyin asserts that Islam is not anti-technology at all as some might erroneously conclude from earlier chapters but rather supportive of the development of science and technology. An important caveat, however, is that science and technology be developed within the context of a framework of fundamental values, particularly those put forth by Islam. In essence, Akcahuseyin conveys agreement with Schuurman's central thesis.

Two subsequent chapters deal with the relationship between Islam, on the one hand, and Western culture and Christianity, on the other. In Chapter 11, Christian scholar Gert-Jan Segers (Dutch Christian Union political party), who for several years lived in a predominantly Islamic country, discusses Schuurman's appeal to Christians and Muslims to join forces in dealing with the crises of our time. Do Christianity and Islam as it manifests itself in the international community have enough in common to make this kind of cooperation feasible in the context of a democratic society? According to Segers, such cooperation would require the fulfilment of a number of conditions, not least on the part of Islam.

Chapter 12 then offers an Islamic perspective. In this chapter, Malaysian Muslim scholar Abdelaziz Berghout (International Islamic University) discusses the possibility of international cooperation and exchange between Islamic cultures and other cultures. He claims that peaceful cooperation and exchange will only be possible when both Islamic and Western culture change and become more respectful towards one another. He summarizes main elements of an Islamic view of the world and of technology, and argues that a better

understanding of this view, both in Muslim and in Western societies, could enable more productive cooperation. He further contends that this kind of cooperation is imperative “for the sake of God, humanity and the protection of our planet and civilization”. In our view, Berghout’s appeal further encourages us to continue the cultural dialogue we started and hope to further with this book.

The compilation concludes with an epilogue written by the editors. In this epilogue, we seek to firstly identify some of the main overarching elements that have surfaced in a number of the contributions and then place them in the broader context of public debates, especially the debate regarding the position of religion in the public domain in pluralist democratic societies. We hope that this book contributes to a climate of respectful dialogue between groups of people that adhere to different religions and/or worldviews. True tolerance allows for disagreement as long as it is respectful and seeks possibilities to further peaceful and responsible cultural development that supports the fundamental freedoms of modern democracies.

We want to finish this introduction by expressing our sincere gratitude to the Noaber Foundation for its financial support, to all the participants in this project for their efforts and contributions and to the (other) members of the steering committee for their constructive guidance. We are most grateful to Peter Jansen, researcher and lecturer at Ede Christian University of Applied Sciences, who served as project manager and coordinated the organizational aspects of the project with the utmost accuracy and efficiency. Lastly, we thank Sarah Stutterheim for thoroughly editing all the chapters in a quick and precise manner.

References

- Donk, W.B.H.J., van de, Jonkers, A.P., Kronjee G.J. & Plum, R.J.J.M. (eds.) (2006) *Geloven in het publieke domein. Verkenningen van een dubbele transformatie*, Amsterdam: Amsterdam University Press.
- Schuurman, E. (2008) The Challenge of Islam’s Critique of Technology, valedictory address, Wageningen University, September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>
- Well, M.D.J. van. (ed.) (2008) *Deus et machina. De verwevenheid van technologie en religie*. Den Haag: STT.

Towards a cultural dialogue between Christian and Islamic scholars

Egbert Schuurman

Introduction

As far as I can see, for many years, Islamic and Christian scholars have not discussed their position on or view of technology and its cultural influence. That this is happening now in this publication and that it happened at the meeting held to prepare for this publication is important because the influence of modern technology and the spiritual-historical background of technology have generated problems that have been discussed by both Christians and Muslims. Problems relating to technology as well as serious tensions between Islam and the West make this kind of dialogue imperative.

This project is, in a certain sense, an experiment. Both the views of Islamic scholars and the views of Christian scholars are rooted in their religious convictions and although the views are linked historically, their content differs to such a great extent that religious dialogue may appear to be very difficult. However, this project is not about religious dialogue but rather about *cultural dialogue*. We discuss the influence of science and technology on the global culture and the problems and threats posed by the 'technological culture'. Given that we all share a religious background, albeit different religions, we may agree more on the problems of current culture and the background of these problems than we initially thought.

When I gave my farewell lecture entitled *The challenge of Islam's critique of technology*, I did so with the conviction that, firstly, Christians can learn something from the Islamic critique of technology and, secondly, a Christian-philosophical critique is not very well known in the Islamic world. My lecture was thus an effort to let Christians and Muslims become better acquainted with one another.

The main purpose of my farewell lecture was to plea for a shift in the cultural paradigm of the West in order to further peace between Islamic and Western culture. We all live in the same world, in the creation of God. In my studies, I have come to the conclusion that Christians and Muslims can find and understand each other in this suggestion for a shift in the cultural paradigm. I do believe that a cultural dialogue as envisioned here can be successful, especially if we are able to adopt a historical perspective regarding science and technology and explore similarities in the Christian and Muslim critiques of the overwhelming influence of the Enlightenment. Hence, the broader setting for this dialogue is provided by the question: Is it possible to decrease tensions between the Western world and the Islamic world by promoting another, more responsible direction with regards to technology and its influence on society?

In this chapter, I outline some major elements from my farewell lecture so as enable the reader to better understand the view of culture and technology that the other authors have been asked to respond to from their own corresponding perspectives.²

The technological world picture

To start, I would like to call the dominant way of thinking about things in Western culture ‘technical thinking’. This way of thinking is rooted in the autonomy or acclaimed self-sufficiency of the thinker. It does not recognize the limits and limitations of human thinking. In such thinking and doing, every non-scientific authority is dismissed. With that, the definitive breach from God as the Origin of all things is accomplished.

Whatever does not fit into the technological model is usually disregarded or forgotten. As the purview of technical thought expands, the extent of reality shrinks. What remains is taken to be a conglomerate whole that is open for technological improvement. This overextended, technical way of looking at things translates into a technological world picture to which our culture has become enslaved.

This world picture is a human construct that functions as a cultural paradigm — a type of ethical framework within which people think and act. It sets the norms; priorities, values and standards of excellence are derived from it. Whatever science can analyze and explain, whatever it can manipulate, fits into this picture of the world. What science cannot analyze or manipulate does not fit. This picture of the world has, with time, come to define the development of Western culture and it continues to characterize the current globalization.

There should be no misunderstanding however: technology and the technological world picture are not the same. The problems do not lie with technology as such but with the technological world picture.

This picture of the world, derived from technical developments, has far-reaching influence throughout and beyond the scope and realm of technology. Not only has it impacted our relationship to nature and the environment, relationships in human society are coloured by it as well. By using technology, the technological world picture strives to dominate and control both nature and society. Technological-economic powers in particular are the driving forces behind this picture of the world and yet we all breathe its air.

This picture of the world is actually a scientific, technical take on the world. The picture it presents reflects the image of abstract science, emphasizing functionality, rationality and universality. As such, it tends to reduce and level out reality. Sometimes its destructive influence even affects nature, from ecosystems to the biosphere, as well as society and the social environment.

² The valedictory address is available on the internet: Schuurman, Egbert (2008) The Challenge of Islam’s Critique of Technology, valedictory address, Wageningen University September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>

The reigning cultural paradigm of technological-economic growth poses many problems in the West, especially given that we are now experiencing so many crises — the climate crisis and energy crisis for instance. We are trying to solve these problems with the same means and the same methods that caused them in the first place!

The current ethical orientation: Its priorities, values and standards

Thus, the technological world picture generates a breadth of problems. That is not all. It is also usually decisive in defining desirable ethical solutions. Because of the technical way of thinking, there is a good deal of coherence in the most current approaches to these matters. In other words, the technological picture of the world defines contemporary ethics as well. I have sometimes called this ‘technical ethics’. Ethics becomes a technique because people want to streamline and guide the technical development. In the ethics of technology, the ‘control-technical perspective’ is then dominant. People restrict their attention to the adverse symptoms of an otherwise limitlessly developing scientific-technical control. In doing so, this ethics does bring relief to some of the problems technical developments create.

Attaining power over reality is the implicit priority of this ethical stance. It follows closely on the heels of technological innovation. Values behind this project include economic self-interest (greed) and an across-the-board increase in consumption. The presumed outcome will find humankind front and centre, in control, as lord and master of technical progress. What this will do to us as individuals or as a society, let alone how this will affect the environment, are questions few take time to even ask.

We continue to encounter more problems in which the technological world picture and the ethics that accompany it fail us. This is especially clear when we look at problems related to preserving biodiversity and sustainability. Recent decreases in biodiversity are shocking. Within the time span of a single generation, the number of species has been halved. This must surely be the result of looking at living reality from a predominantly technical perspective.

The technological world picture also stands in the way of resolving growing concerns about climate change. Our way of dealing with creation prevents us from gaining a new perspective within which we can revise the problematics of this impasse. The ethical reduction these involve is scarcely discerned.

Anthropological, cosmological and ethical deficiencies

In my estimation, current views about technology, generally speaking, suffer from an anthropological deficiency, a cosmological deficiency and an ethical deficiency.

A human being is seen as self-sufficient. Conceptions about the cosmos are often very limited because justice is not being done to the multifaceted depth and breadth of reality. Reality is often reduced to the world that science and technology aim to control — to a positivistic cosmology, a view of the cosmos to which technology is the key. This lopsided take on the world does not do justice to the many-sided dimensions and coherence

of reality in its fullness. It pays no attention to its dependence on and orientation with respect to its divine Origin. It pays no heed to the transcendental direction of everything.

In addition to a cosmological shortfall, there is also an ethical deficit. The world around us is considered to consist of things that can and should be manipulated. Scientific-technological thinking reduces everything to the status of useful object. The unique value and meaning of things is dissolved into the use or benefit that that reality has for humankind. This ethical deficiency can best be characterized as the lack of love because justice is not done to the peculiar nature, individuality or uniqueness of things.

Covering the deficits

When we acknowledge that reality is a created reality, we know that the anthropological, cosmological and the ethical deficit resulting from a reductionistic-scientific approach to reality cannot be solved by more science or more technology. What we need is a vista and a vehicle that embraces more dimensions — something that provides a more comprehensive, holistic approach. The reality is a created reality. Mankind is created in the image of God. An anthropology and a cosmology grounded in such a view clearly will lack the deficiencies referred to earlier.

The most intimate involvement of God with created reality is characterized by His love. Accepting this unity in love removes the ethical deficit of love. With good reason, the command to love God and one's neighbour is at the core of all of the directives, virtues, commandments, values and norms.

A renewed cultural picture

Is there a picture of reality more basic than what science and technology (or the economy) can provide that can help us understand how to reorient ourselves with respect to technological development? Over against a technological approach, a more organic one seems necessary. Responsible cultural development evokes an image reminiscent of the earth as a garden, tended by humans with the goal of creating a 'communal home' within which nature, technology and culture are in harmony, a garden in which there is a meaningful place for everyone living and everything that lives. Foremost in that picture is an integral coherence in which every thing participates, all the while retaining its own individual value or nature. Before getting involved in scientific-technological activities, one needs to respect this intrinsic value of things. Every human activity should begin with caring contact and respectful treatment.

The metaphor of a garden developing in the direction of a communal home also expresses the human connection with and dependence on the whole of the creation. Reality is given to us. We are not its lord or master but creation's guardians and caregivers. We are allowed to unpack and unfold creation. Just as we carefully unwrap a precious gift, we should treat the gift of God's earth with a sense of awe and gratitude. A change in attitude and behaviour is called for.

This image of the garden is also clearly linked to the original meaning of *oikonomos* (*oikos* house + *nemein* to manage). Caring, keeping, cherishing and protecting go hand in

hand with cultivating, harvesting and producing. In the cultural paradigm of the managed garden, accelerated increases in scope and scale will be transposed to levels that will benefit the coexistence of human beings and the creation. The carrying capacity of nature will be respected and the goal of long-term occupancy will set the direction for sustainable cultural development. Sustainability is possible within the metaphor of the garden. Technology, along with the economy, need not travel the road of manipulation, extortion and pollution. Responsible cultural development means living off the interest on the capital given to us. It does not allow us to touch or deplete the capital sum itself. This notion of living off the interest fits well with the concept of human beings as stewards. Ecology, technology and the economy will be in equilibrium as long as the natural cycles are not broken and the natural resources do not dry up. The whole earth will come to be seen as one big garden city.

An ethics of responsibility

Which ethical approach is best suited to remove the described ethical deficit of love in the current ethics of technology? An ethics of responsibility is, in my opinion, the most suitable approach for an ethics of technology because it integrates ethos, intention, virtues, values and norms in a coherent way.

The word *responsibility* — in the sense of being accountable *for* and accountable *to* — is very apt because it also indicates that everyone involved in scientific-technological development must act as steward with reference to one another. In the image of the garden that is being developed into a communal home, the primary concerns are to make and keep it habitable, to provide the basic necessities of life and to alleviate the needs and suffering of all people.

It was a great surprise for me to discover that, in Islamic thinking, the garden model is also known and that each human being is seen as a vicegerent. How have Muslim scholars reacted to the cultural development in the West I just described? Let me say here a few words on what I discovered, as said, to my surprise.³

The critique of Islamic ideologists

One of the most influential Islamic thinkers of the past century, the Egyptian writer Sayyid Qutb, championed a pure Islamic community as a defence against encroaching Americanism which he interpreted as the empty, idolatrous materialism of the West (Buruma & Margalit 2004: 36, 116 f., 124 f., 131). In the course of his life, the behaviour of the West made him more and more bitter, causing him to be opposed to every form of accommodation. Like all dreams about purity, his ideal of spiritual communion was a fantasy which bore within it the germ of violence and destruction. Qutb became the founder of an Islamic ideology that challenged the main ideologies of the West. His rejoinder to Western arrogance was Islamic intolerance (Huntington 2001: 333). His objectives were the purity of Islam and the destruction of the West. Qutb is a representative of radical Islam

³ For a more extensive presentation and discussion, see my valedictory address.

that does not flinch from the use of violence in opposing the West. In fact, he advocates it! (Sayyid Qutb 1990) In him, the cultural dialectic has become the engine of destruction.

Fortunately, there are also reformists,⁴ Muslims who aim at harmonious co-existence. One of them is Mohammed Iqbal, a writer from Pakistan. Iqbal is no occidentalist. He critiques the West from a Muslim perspective. In particular, he criticizes the unbridled development of science and technology, the financial power of capitalism, the inherent forms of economic exploitation and the secularism attendant upon it. He blames Western influence for detaching people from Allah — thus putting his finger on the worst effect of the Enlightenment — and causing them to serve idols of their own making. Hence, he is very critical of Western arrogance, Western imperialism and public morality in the West. Nevertheless, Iqbal does not distance himself from science and technology (Buruma and Margalit 2004: 122, 152). On the contrary, for his ideas on that score, he takes as his basis the familiar Muslim concept of the Unity of Allah. That unity has to be reflected in human society in the form of harmony, expressed in justice, equality, solidarity and care for nature and the environment. Thus, in keeping with the spirit of early Islam, he advocates important reforms in science and technology, hoping in this way to reduce the cultural tensions (Iqbal 1971).

In the same vein, the Pakistani Muslim Mohammed Abdus Salam, a winner of the Nobel Prize for physics, has made a plea for accepting technology. In a very readable paper published in 1983, he states that Allah has placed everything on earth “at the service of” man (Abdus Salam 1983). Muslim scholars are to acquire insight into the world and thus into Allah’s plan. Science must be an integral part of the human community for the purpose of promoting material well-being. Accordingly, Salam orients himself to the universality of science and technology. Their successes should be a cause of gratitude to Allah and of greater conformity from now on to Allah’s will. In order to learn about the proper motives for pursuing science and technology, Salam wants to go back to the early beginnings of Islam when the torch of scientific and technical development was passed on from generation to generation. For him, therefore, Islam is essential for the correct motivation and ethics of science and technology. In this way, this Muslim scholar has spoken about the relation or interaction between religion and technology in words which are new in the present day Muslim world and which are seldom if ever heard in the Enlightenment thinking of the Western world.

Perspective

The similarities that I note between certain Muslim and Christian scholars provide a good basis and a good perspective for our cultural dialogue. The outcome may be that we, in the future, can discuss some consequences of the new cultural paradigm in more detail. I would like to suggest that, in a next stage of this dialogue, we discuss problems concerning ecological, social or culturally adjusted technologies, technology in relation to healthcare and ecological or organic agriculture. Such agriculture does not require us to revert back to primitive forms of agriculture but rather makes use of biology which is, in essence, the

⁴ Not all Muslim scholars like the word ‘reformist’ as it may suggest that ‘reformists’ plead for a reform of Islam, which is not the intention. Reformists argue in favour of a renewed relationship between Islam and industrialized society.

science of all that lives. Other topics such as genetic modification are very current and also worthy of discussion.

I want to emphasize that it is important to employ a model other than the technological model, particularly when living organisms are involved. It would be ideal to develop an organic paradigm for evaluating new possibilities. With such a paradigm shift, life would be better because the organic model takes life as its point of departure whereas the technological model ignores life as a phenomenon distinct from inorganic matter. We need structures *for life* and for honouring such structures. Structures for life are at stake everywhere!

References

- Abdus S., Mohammad (1983) *Science and Technology in the Islamic World*, keynote address delivered at the Science and Technology Conference, Islamabad, 1983.
- Buruma, I., Margalit A. (2004) *Occidentalism: The West in the Eyes of Its Enemies*, New York: Penguin.
- Huntington, S. (2001) *The Clash of Civilizations and the Remaking of World Order*, New York: Penguin.
- Qutb, S. (1990) *Milestones*, Indianapolis: American Trust.
- Iqbal, M. (1971) *The Reconstruction of Religious Thought in Islam*, Lahore: Shaikl Muhammad Ashraf.

A Muslim perspective on Schuurman's garden model at the crossroads of the secular/post-secular society

Bünyamin Duran

Abstract

There is a close connection between current technology and the secularization process. According to some scholars, current technology is the result of the instrumental rationality of the bourgeoisie class who instrumentalized all human and natural sources to attain power and money. In order to enable new social and cognitive change towards alternative ideas, especially religion-oriented ideas, Jürgen Habermas developed a new social-political framework in which religion-oriented ideas can also present themselves. Meanwhile, philosopher Egbert Schuurman developed a garden model which offers a new alternative to the current technology-driven culture that has become detached from ethics. Interestingly, Muslim theologian Bediuzzaman Said Nursi has also put forth many ideas that are similar to those of Schuurman.

Introduction

In this article, I aim to analyse Schuurman's garden model (SGM) in the context of its specific historical background, namely critical theory, which has its roots in the work of Max Weber and Jürgen Habermas. I also want to reconcile Christian and Muslim approaches to the technological world picture by referring to the Muslim thinker Bediuzzaman Said Nursi and comparing his ideas with those of Schuurman.

My starting point is the relationship between the secularization process and technology, and its positive and negative consequences for human beings and nature. Regarding the negative consequences of technological development resulting from secularization and the instrumental rationalization process, I will attempt to establish a connection between the Habermasian post-secular model of culture and Schuurman's garden model. As such, I will endeavour to engage in the democratic and intellectual deliberation from the perspective of Christian and Muslim religious communities. At the same time, I want to be clear that the project that has generated this publication transcends the role given to religious communities in Habermas' post-secular society. This paper is not simply intellectual dialogue but rather intellectual and scholarly cooperation in a cultural engagement.

In order to establish a framework for Schuurman's garden model, we must first briefly explore the secularization process and its dimensions.

Secularization

The term 'secular' has various dimensions, some of which are directly concerned with industrialization, rationalization and urbanization processes; others are concerned with minimizing the church's influence on culture and society at large, and in the public sphere (Turner 1991: 134-135). Secularity has been characterized by scholars as: 1) a plurality of worldviews; 2) autonomous rationality; 3) religion being part of culture; and 4) religion being a privatized phenomenon (Ziebertz & Riegel 2008: 29-30; Duran 2008: 61-62). According to Habermas, the word 'secularization' is nearly synonymous with rationalization (Habermas 2003). The secularization process has had very positive outcomes including economic development, urbanization, democratization and political freedom (Habermas 1984: 165-166). However, here, I want to focus on the destructive rather than positive aspects of secularization.

One of the negative aspects of secularization is a new polytheism. According to Weber, the cognitive-instrumental rationalization, namely instrumentalization, of all social and natural sources by capitalist strata for the attainment of money and power has led us to a new polytheism: "Many old gods arise from their graves, disenchanted and in the form of impersonal forces; they strive to gain power over our lives and resume again their eternal struggle with one another" (Weber 1992: 180). This new polytheism results from the differentiation of value spheres, leaving each sphere to function according to its inner logic independent from a 'higher designer' as presented in religious-metaphysical worldviews. As such, no inner connection between value spheres can be made. Instead, there are antagonisms among them. As the Hellenic man at times sacrificed to the gods of his city, so do we; only now, in a way that is disenchanted and denuded to the mystical but inwardly genuine plastic of that earlier behaviour. This worldview today determines, with irresistible force, the lifestyles of all the individuals who are born into this mechanism, not only of those directly concerned with economic acquisition. Perhaps it will so determine them until the last ton of fossilized fuel is burnt. The person who adapts himself to this atmosphere is a "specialist without spirit, sensualist without heart" (Weber 1992: 182).

In fact, the modern bourgeois world is dominated by orders of life in which the two complexes of instrumental rationality — the economic and political subsystems — dominate. The specialist and hedonist are best adapted to the ice cold atmosphere of the economic and political subsystems of late capitalistic society. Is the ice cold secular atmosphere an eternal fate of mankind? Or is there an alternative social system of action? What does the post-secular society promise us in this context?

Post-secular society

The term 'post-secular' was first employed by Habermas in his definition of the new relationship between religion and other sectors in society. In contrast to a secular society, post-secular society grants religion the same status as other sectors. In this society, religion does not have the right to claim superiority over other spheres, as was the case in the Middle Ages. We know that Habermas is not a religious philosopher but rather a secular one. The essential question here is thus how can a secular thinker develop a theory which promises positive expectations for a religion-oriented community?

Despite being a secular thinker, Habermas is a philosopher that endeavours to create new social openness for religious-oriented views in the secular democratic process. In this context, his theory of post-secular society is very important. In addition, his enormous project, communicative praxis, is quite sensitive with regard to religious worldviews and systems of interpretation and orientation (Siebert 1985): “Indeed, there is a claim which asserts that the new paradigm of communicative praxis is a remembrance of the Judeo-Christian messianic, eschatological-apocalyptic brotherly-sisterly communication community” (Siebert 1985: 22). Thus, Habermas, although not a religious person, has fulfilled a decisive role in the debate that has enabled the appearance of religion-oriented views in the secular public sphere.

We know that, in post-secular theory, the core theme is social cohesion rather than religious epistemic and eschatological salvation. Habermas is interested in religion and religious community only as a means to attain social cohesion in society. Habermas is fully aware of the destructive outcomes of polarization between secular and religious communities. In order to minimize this gap, he has developed a theoretical framework in which all citizens have equal political rights based on the principle of liberal ethics of citizenship. In this so-called post-secular political and cultural framework, not only secular communities but also religious communities function freely. According to Habermas, this is the core of civic solidarity (Habermas 1996: 329f; Habermas 2003).

In addition, Habermas is fully aware of the importance of religious values in advanced capitalist civil society. He contends that religion can play a substantial role in global capitalism. In his view, religion can prevent citizens of modern post-secular societies from being overwhelmed by the all-encompassing demands of vocational life and worldly success. Religious convictions encourage people to treat each other as ends in themselves rather than as mere means (Wolin 2003).

Habermas further endeavours to reconcile secular and religious communities. Because secular communities see religious views and argumentations as archaic relics of pre-modern societies that continue to exist in the present, they understand freedom of religion as the natural preservation of an endangered species. From their perspective, religion no longer has any intrinsic justification to exist. However, for Habermas, this approach to religious traditions and convictions is no longer appropriate. Religious traditions can forcefully articulate moral institutions with regard to communal forms of a dignified human life. As such, religious presentations of relevant political issues can become serious candidates for possible truth contents that can then be translated from the vocabulary of a specific religious community into a generally accessible language (Habermas 2009). Hence, Habermas invites secular society to open its mind to the possible truth content of those presentations and even enter into dialogue from which religious reasons may very well emerge in the transformed guise of generally accessible arguments (Habermas 2009).

In short, Habermas, although not a religious philosopher, has the social prestige and capacity to play a very crucial role in attributing legitimacy to religious argumentation in the public sphere.

Marcuse-Habermas conflict on technology

In order to ground Schuurman's approach to technology in his garden model, it is important to investigate the Marcuse-Habermas discussion on technology. Habermas developed his own ideas concerning technology when he dealt with Marcuse's view on technology and science. Marcuse argued that modern science and technology are the project of the bourgeoisie class and that science and technology have essentially been developed to control mankind and nature. According to Marcuse, instrumental rationality has been nothing but a manifestation of political power hidden behind the guise of rationality (Habermas 1968: 34f). According to Habermas, Marcuse sought to develop a new model of technology based on Jewish-Christian mysticism, in which communication between men and nature is possible without exploitation and control (Habermas 2007: 37f). In contrast to Marcuse, Habermas has asserted that technology is a generic project, "a 'project' of the human species as a whole", not of some particular historical epoch like class society or of a particular class like the bourgeoisie (Feenberg 1996). A question that arises, in this context, is what are the implications of that view for Schuurman's garden model?

Schuurman's garden model

It appears that Schuurman has been affected deeply by both Marcuse's and Habermas' view of technology. However, this does not imply that Schuurman has simply repeated what Marcuse says. First of all, Marcuse is a secular philosopher whereas Schuurman's philosophy is religiously rooted. Second, Marcuse is a Marxist thinker whereas Schuurman's thinking is based largely on protestant convictions. There is no doubt in Schuurman's mind regarding whether modern problems are the outcomes of the secularization process. He claims that this is indeed the case and that these problems are hidden behind the facade of modern technology and the mask of autonomous individual freedom. According to Schuurman, not only the public sphere but also the worldview of many Christians has been secularized and Enlightenment trends have been uncritically adopted. As a consequence, resistance to the absolutization of science has gradually disappeared. Given that spiritual climate, positivism and pragmatism have been in a position to easily undermine any resistance to the unhindered scientific-technological control of reality.

In contrast to Habermas' view, Schuurman agrees with Marcuse that modern technology is *not* "a 'project' of the human species as a whole." Rather, it is a class ideology grounded in secular worldviews (Schuurman 2008). In my opinion, the main distinction between Marcuse's and Schuurman's view of technology is that Marcuse sees it to be the result of an ideology of a predominant class whereas Schuurman considers modern technology to be rooted in a particular approach to and view of the world. This does not entail a complete rejection of technology as such. In fact, Schuurman distinguishes between technology and the 'technological world picture' (TWP). The former is not seen as problematic while the latter is viewed by Schuurman as a destructive power insofar as it controls and enslaves Western culture. According to Schuurman, the norms of the technological world picture are effectiveness, standardization, efficiency, success, safety, reliability and maximum profit, with little or no attention to the costs to humanity, society,

the environment and nature. This kind of technology is characterized by cosmological and ethical deficiency (Schuurman 2008). Furthermore, he argues that the technological world picture has not only shaped our relationship to nature and the environment, it has also shaped relationships within human society. Through technology, the technological world picture strives to dominate and/or control both nature and society. Technological and economic powers in particular are the driving forces behind this technological world picture, and we all breathe its air.

One can trace the philosophical and sociological roots of Schuurman's technological world picture to the notions of Weber's 'new polytheism', Horkheimer's 'instrumental reason', Adorno's 'fully administered society' and, lastly, Marcuse's 'ideology of technique'. This does not mean that Schuurman is an intellectual who only proposes abstract speculations; rather, he suggests a model that posits a solution to the problem of current technology. His model, the so-called 'garden model', is very similar to what Marcuse developed in 1950s, in which human beings and nature can coexist in harmony. The garden model is presented as an embodiment of the notion of 'enlightenment of the Enlightenment'. The central content of this notion is that we acknowledge that there is more than just matter, that there is a spiritual dimension and that we live in a created reality in which a breach occurred between God and humankind. Furthermore, this notion requires that we acknowledge the perspective of the Kingdom of love and peace because restoration has been made possible in Christ. His is a Kingdom in which nature and culture will be filled with the glory of God. This religious recognition cannot but throw new light on the ethics of technology (Schuurman 2008).

In brief, Schuurman offers a view of technology that is liberated from both human absolutizations and human fears. This technology offers greater opportunities for living: it will reduce physical toil, push back natural disasters, conquer diseases, expand social security, widen communication, multiply information, augment responsibility, vastly increase material welfare in harmony with spiritual well-being and abolish alienation from self, nature and culture. All this is given in the disclosure of technology as part of the unfolding of the whole of creation whose ultimate destiny is found in the Kingdom of God — the re-created universe (Schuurman 1972: 425).

A very peculiar characteristic of Schuurman's garden model is that he invites Muslims to participate in a moral and intellectual cooperation, together rethinking and trying to resolve our common problems. In fact, this project began with his invitation and my positive response to that invitation.

Nursi's perspective on technology

Bediuzzaman Said Nursi (1878-1960) views technology from a number of different perspectives. First of all, he sees technology as a means by which human beings can improve their lives. Technology also serves to attain justice and security, and to eliminate ignorance, poverty and hunger. As such, he sees technological and scientific development as a significant task for human beings. He goes further by interpreting the miracles of prophets as guidance for technology. According to Nursi, the Upholding the Word of God (*I'la-i Kalimatullah*, namely *jihad*) can currently be fulfilled only with material and technological development. The rejection of material development is thus practically

synonymous with the rejection of fulfilling the task of *jihad*. He says, “We shall wage *jihad* with the weapons of science and industry against the most dangerous enemies of Upholding the Word of God, which are ignorance, poverty and polarization” (Nursi 1960: 64; Nursi 1991: 26; Duran 1997).

Consequently, Nursi views technological development as the culmination of the human species. There is no clear distinction between technology and the technological world picture in Nursi’s teachings. However, he does distinguish between technology itself and technology’s uses. He thus approaches modern civilization from this perspective.

Critique of modern civilization

Nursi can be viewed as a Muslim intellectual who belongs to a critical tradition. He treats Western civilization not as a homogenous phenomenon but as a very complex one. According to Nursi, Western civilization is not all evil. It has, in fact, brought many benefits to humanity. Nursi very interestingly divides Europe into two categories, namely a ‘good Europe’ and a ‘bad Europe’: “The former follows the sciences that serve justice and activities that are beneficial for society through the inspiration it has received from true Christianity. This Europe will not be addressed further. The second Europe will. This second Europe is a corrupt Europe which, through the darkness of the philosophy of naturalism that considered the evils of civilization to be its virtues, has driven humankind to vice and misguidance” (Nursi 2000: 159-160).

Bediuzzaman Said Nursi has held that European societies replaced divinely-guided Christian ideals with the philosophical principles of the Enlightenment, thus focusing on the freedom of the individual, dismissing the formative role and rights of society and reducing religious faith to a private, personal commitment with no voice in the autonomous spheres of politics, economics and social relations. In fact, Nursi shares many ideas with Schuurman regarding the secularization of Western culture and its consequences. He is fully aware of the fact that, in the absence of positive cooperation between Muslims and Christians, it is very difficult to solve the problems that have emerged from radical secularization. Therefore, he calls for cooperation between these communities. As many scholars have pointed out, Nursi is one of the pioneer thinkers of our century because he has recognized that the task of formulating a critical approach to the values of modernity should be carried out together by Muslims and Christians (Michel 1999: 13; Vahide 2002: 344; Valkenberg 2006).

Nursi’s critique increasingly addresses the main foundation of Western civilization, namely the bourgeoisie system of action that is based on non-religious instrumental rationality. For Nursi, Western civilization is established on five negative principles:

1. Its point of support is power, the mark of which is aggression;
2. Its aim and goal is benefit, the mark of which is jostling and tussling;
3. Its principle in life is conflict, the mark of which is strife;
4. The bond between the masses is racialism and negative nationalism, which is nourished through devouring others; its mark is collision; and
5. Its enticing service is inciting lust and passion and gratifying the desires but lust transforms man into a beast.

In contrast, the civilization which the Qur'an desires comprises the following:

1. Its point of support is truth instead of power, the mark of which is justice and harmony;
2. Its goal is virtue instead of benefit, the mark of which is love and attraction;
3. Its means of unity are the ties of religion, country and class, instead of racialism and nationalism, and the mark of these is sincere brotherhood, peace and only defence against external aggression;
4. In life, the principle of mutual assistance applies instead of the principle of conflict, the mark of which is accord and solidarity; and, finally,
5. It offers guidance instead of lust, the mark of which is human progress and spiritual advancement (Nursi 2001: 548).

It is clear that Nursi treats technological development itself as a positive issue but its use for the sake of controlling men and nature as something negative.

In fact, the content of Nursi's conceptions is closely related to that of critical theories such as Weberian 'iron cage', 'loss of freedom and meaning' (Weber 1992: 55f); Marxian 'commodity fetishism' (Habermas 1981: 357); Lukacsian 'reification' (Habermas 1981: 355f); and Schuurmanian 'ethical deficiency' (Schuurman 2008). In short, Nursi's assessment of modern technology and its consequences is similar to Schuurman's in several respects. However, a full comparison would require additional detailed study.

Conclusion

This article can be summarized as follows. We are living in a secular society in which religious and mystical powers have largely lost their impact. As a result, Western culture is shaped by instrumental rationality, the ideology of the bourgeoisie class. This has led society to a new polytheism and reification. We are now, in a broader sense, bearing witness to a heartless world. Schuurman's garden model can be seen as a heartfelt call to change the current materialistic culture into a new culture marked by universal solidarity and brotherhood and a loving relation with nature. This call invites people to turn to the Kingdom of God by reorganizing the policy of technology and submitting to an ethics of responsibility. Schuurman, as a protestant thinker, is not alone in this field. He has strong intellectual and theological roots that are, as posited by this paper, supported by thinkers in both the West (Weber, Marcuse, Horkheimer and Adorno) and the East (Nursi).

This project is very new attempt to together as Christian and Muslim scholars enter into the public sphere of Habermas. I truly hope that other projects will follow this positive initiative and demonstrate that religious worldviews do indeed offer solutions to modern antagonism.

References

- Duran, B. (2005) Cooperation in interreligious learning and teaching, based on common Abrahamic principles, in D. Polefeyt (ed.) *Interreligious Learning*, Leuven: Peeters Un.
- Duran, B. (2008) Islam and Muslim in post secular society, in Z. H. Georg and U. Riegel (eds.) *Europe: Secular or post-secular?* Berlin: Lit Verlag.

- Duran, B. (1997) Bediuzzaman, The Awf Work Ethic, and Upholding the Word of God, in S. Vahide (ed.) *Third International Symposium*, Istanbul: Sözlür.
- Habermas, J. (1984) *The Theory of Communicative Action*, v. I, (translated by T. McCarthy), Boston: Beacon Press.
- Habermas, J. (1984) *The Theory of Communicative Action*, v. II, (translated by T. McCarthy), Boston: Beacon Press.
- Habermas, J. (1996) *Fact and Norms*, (translated by W. Rehg), Cambridge MA:MIT.
- Habermas J. (2003), Faith and knowledge, in J. Habermas *The Future of Human Nature*, Cambridge UK: Polity Press.
- Habermas, J. (2009) *Religion in public sphere*, available at http://www.sandiego.edu/pdf/pdf_library/habermaslecture031105_c939cceb2ab087bdfc6df291ec0fc3fa.pdf
- Habermas, J. (2007) *Deoloji' olarak teknik ve bilim*, (translated by M. Tüzel), Istanbul: YKY.
- Michel, T. (1999) Muslim-Christian Dialogue and Cooperation in the Thought of Bediuzzaman Said Nursi, in S. Vahide (ed.) *Bediuzzaman Said Nursi in the view of Western Writers*, Istanbul: Sözlür.
- Nursi, B.S. (2001) *Letteres, 1928-1932*, (translated by Ş. Vahide), Istanbul: Sözlür.
- Nursi, B.S. (2000) *The Flashes Collection*, (translated by Ş. Vahide), Istanbul: Sözlür.
- Nursi, B.S. (1995) *Munazarat*, Istanbul: Yeni Asya.
- Nursi, B.S. (1960) *Divan-i Harb-i Örfi*, Istanbul: Yeni Asya.
- Nursi, B.S. (1991) *Muhâkemat*, Istanbul: Sözlür; Istanbul: Yayınevi.
- Schuurman E. (2008) *The Ethics of Responsibility as a Comprehensive Approach: An Application to the Ethics of Technology*, available at <http://www.metanexus.net/magazine/tabid/68/id/10889/Default.aspx> (Metanexus Institute).
- Schuurman, E. (1972) *Techniek en Toekomst. Confrontatie met wijsgerige beschouwingen*, (PhD thesis), Assen: Van Gorcum.
- Siebert, R.J. (1985) *The critical theory of religion: The Frankfurt School*, Berlin: Mouton.
- Turner, B. (1991) *Religion and Social Theory*, London: Sage.
- Vahide, S. (1992) *Bediuzzaman Said Nursi*, Istanbul: Sözlür Neşriyat
- Valkenberg, P. (2006) *Sharing Lights On the Way to God, Muslim-Christian Dialogue and Theology in the Context of Abrahamic Partnership*. Amsterdam-New York: Rodopi.
- Weber, M. (1992) *The Protestant Ethic and the Spirit of Capitalism* (translated by T. Parsons), London: Routledge
- Wolin, R. (2003) *Jürgen Habermas and Post-Secular Societies*, available at <http://habermasians.blogspot.com/2003/10/jrgen-habermas-and-post-secular.html>

On the brink of the volcano: Convergence, ephemeralization and the telos of technology

James Clement van Pelt

Abstract

As the grand convergence of global systems and cultures continues to accelerate, civilization faces the growing threat of a cascading collapse catalyzed by technology, avoidable only by minimizing causes of disaffection and reorienting technology's purpose. Tools and technology originate in the embodiment of spirit and its drive to extend into the world but the exclusively human capacity to conceive of limitlessness drives the futile quest to transcend all limitation by technical means — to “be as gods”. The toxic misuse of technology's power now decimating the biosphere is the outcome of the scientifically unsupported, theologically distorted, morally untenable human self-concept as the supreme species limitlessly entitled to anything the earth has to offer, at whatever cost to the other species. Fidelity to science, to religion's call to stewardship and to the survival of civilization require that humanity reconceive itself as the guiding intelligence of all embodied life, awakening to its common purpose: to restore and safeguard the planetary commonwealth of all who share Earth's lands, waters and skies. Fully accepting that destiny could redeem civilization, motivating its transformation to sustainability and environmental harmony, thus heeding the ancient charge: “Therefore choose life”.

The ‘bottleneck’ is what I believe humanity's in right now.
—E. O. Wilson⁵

Introduction

Having reflected gratefully on Egbert Schuurman's prophetic valedictory essay (2008), I find myself pondering whether the gravity of his warning that civilization itself is teetering “on the brink of a volcano that is about to erupt” (Schuurman 2007: 77) is fully appreciated — that literally everything we value is at mortal and imminent risk. After three decades as a professional technologist and twelve years exploring the social and spiritual implications of technological development, I find his warning to be neither hyperbole nor metaphysics; instead, his essay can be understood as a meditation on how humanity has arrived at the brink and what can still be done about it.

⁵ Interview with Edward O. Wilson conducted by Ben Wattenberg, PBS Think Tank television program, 12 December 2002. Transcript is available at www.pbs.org/thinktank/transcript1021.html

My response is to consider, from an insider's view, how and why technology poses the threat of driving history towards a series of events equivalent to what evolutionary biologists call a 'bottleneck': a period of extremely adverse conditions survived only by a small fraction of a vast and varied population. The convergence of technological systems is one part of the unprecedented convergence of cultures and also the convergence of environmental, social and political crises: resource exhaustion, habitat destruction, climate disruption, ozone depletion, desertification of land and seas, proliferation of nuclear weapons, overpopulation, regional pollution, antibiotic resistance, economic instability, extreme poverty, local wars, culture clashes, failed states and so forth, all converging into a single menacing complex of mutually reinforcing challenges.

Although simultaneous crises have always been with us, this grand convergence is unique in that previously discrete crises interact like falling dominoes, requiring only a catalyst to converge finally into a single overwhelming mega-crisis. The catalyst needs only an agent and a means to set the dominoes falling. Jihadist terrorists, racist militias, criminal anarchists and other disaffected individuals and groups are poised to act as the agent but random factors — a solar flare, accidental damage to a critical system, a programming error, etc. — could also serve. The means to initiate the cascading failure that would catalyze the bottleneck is being made available by the dynamics of technological development. Such a crucible would amount to history's culmination, bringing either the onset of "a new Heaven and a new Earth" resembling the brightest visions of the prophets or a global downfall presaged by their darkest revelations.

In the first part of this article (section 2), the nature and scope of this peril is described.⁶ In the second part (section 3), the spiritual character of technology is explored to determine how the peril is to be met. In the conclusion (section 4), a model to supplant the reigning technological paradigm is outlined briefly, founded on a reorientation of human purpose towards serving as the intelligence of the planetary commonwealth in the service of all beings who share the Earth.

*While the sand slipped through the opening,
And their hands reached for the golden ring,
With their hearts they turned to each others' hearts for refuge,
In the troubled years that came before the Deluge.*
—Jackson Browne⁷

Ephemerization, catalysis and cascading cataclysm

In his 1964 magnum opus *The Technological Society*, French social critic and Reformed theologian Jacques Ellul uses the word 'technique' to signify the abstract meaning of what is now usually called technology. For him, technique is the integrated set of all specific

⁶ As noted below, the dynamics of technological development entail an ongoing process that can be called ephemerization, so named by Buckminster Fuller, whereby technical means become increasingly transient and insubstantial. Performance tends to improve as physicality is minimized, reducing resistance, inertia, entropy, waste and attendant costs. An example is communications technology, which has evolved from the solidity of carvings on stone tablets that can last for millennia to the ephemerality of microwave signals that invisibly saturate the air and are gone in an instant.

⁷ Jackson Browne, "Before the Deluge", *Late for the Sky*, © 1974 Elektra/Asylum Records

methodologies, components and systems, organized and united by the principle of progressively optimized efficiency — a streamlined, symmetrical, harmonious quality expressed by the adjective ‘elegant’ or, more recently, ‘cool’. Technique operates in ways that impose a mechanistic efficiency on the systems it affects. It includes their human ‘components’ and, in the process, “eliminates or subordinates the natural world and does not allow this world to restore itself.” (Ellul 1990:79)

Applied as technology, technique develops to maximize production and meet market demands and, in doing so, establishes a positive feedback loop — a self-reinforcing chain of events in which advances in one area enable progress in others. Upgrade by upgrade, inefficiency is squeezed out, sources of inertia and resistance are attacked and neutralized and a kind of evolutionary process gathers speed and power and inertia over time, culminating in the reshaping of everything “over, under, around and through” us day by day.

The constant pull towards maximum efficiency entails specific consequences. Systems tend to converge into more and more densely integrated systems; formerly discrete kinds of systems converge into complexes — economic and political, military and industrial, legal and financial, cultural, medical and educational operations and so on — which then integrate into mega-systems. This recursive process is continually expanding and minimally constrained because of its innovative and abundant production. The result is a positive feedback loop that accelerates beyond anyone’s control. In a speech on globalization and national security delivered on the 15th November, 2000 to military and foreign policy analysts and broadcast on the C-SPAN cable network, Thomas Friedman, the essayist and author known for popularizing convergence in *The World is Flat*, addressed this directly. There he said that he was asked by the editor of Egypt’s equivalent of *Business Week* whether the West could be prevailed upon to slow down the ‘runaway train’ of technological development to enable developing economies to catch up. His answer: “The problem is there’s nobody driving. ... Find me the engineer; I’ll slow down the train.” It cannot be slowed down because no one is driving. The driving force, in Friedman’s view, is technological innovation, itself guided by science and driven by the inchoate demands of the market.

Buckminster Fuller, perhaps the twentieth century’s best-known and most passionate proponent of industrial technology, defined its essence in 1922: to “do more and more with less and less until eventually you can do everything with nothing” (Fuller 1981:122).⁸ This he saw as an ongoing process, which he called ephemeralization — meaning the process whereby technical means become decreasingly physical and increasingly ephemeral — transient and insubstantial. Performance tends to improve as physicality is minimized, reducing resistance, inertia, entropy, waste and attendant costs. An example is communications technology, which has evolved from the solidity of carvings on stone tablets that can last for millennia to the ephemerality of microwave signals that invisibly saturate the air and are gone in an instant. As portrayed in the prophetic 1959 film *Forbidden Planet*, the end of this process is reached when physical instrumentality has been minimized to nil.

The efficiencies and economies of scale achieved through ephemeralization enable technological products to become cheaper, easier to acquire and more intuitive to control,

⁸ In this book, Fuller recollects the history of his usage of “ephemeralization” beginning in 1922.

thus multiplying the ways and means by which technologies can be accessed and acquired. The blessings of technology thereby proliferate.

At the same time and for the same reasons, ephemeralization has its down side: the Pandora's box of destructive technological power is flung open to all. As digital, pervasive, integrated and ephemeral components supplant more substantial instrumentalities, systems lose robustness and become increasingly susceptible to disruption and failure. Frangible systems converge and interact with others, increasing overall complexity and making it all the more likely that any such disruption will cascade across multiple systems.

An example is a cascading failure of electrical power generation installations rolling across vast regions after an event as minor as a tree falling across a critical power line. One power plant is shut down after another as the resulting overload is automatically switched from each one to the next. A cascading financial crash, often caused by little more than a random fluctuation in the collective mood that destabilizes an already precarious economic system, illustrates the syndrome even more vividly and expensively.

Ironically, the more rapidly technology develops, the smaller is the relative percentage of effort devoted to shoring up and 'failsafe-ing' systems at their points of potential failure, which often cannot be identified beforehand. Designed into today's complex systems are increasingly advanced security measures, the most advanced being those that protect financial and military operations; but innovation and expansion tend to outpace them. A system's defences may be doubled in effectiveness during the same period, its overall complexity and scale increase a hundredfold. The more protected a system becomes, the more enticing it appears to 'crackers', perversely eager to prove their skills by penetrating its firewalls and passing codes and filters to crash it. The more prominent and essential a system becomes, the more complex it is likely to be and thus the more vulnerable to attack by those who would disrupt it for their own purposes — enemies (state or stateless), extreme anarchists and criminals of all kinds. Errors in design or programming, malware that surreptitiously assumes control of millions of computers via the internet and merely random events can also disrupt.

As convergence and ephemerality increase exponentially, it is logically inevitable that, at some theoretical point, practically any disruption, intentional or not, could initiate a catastrophic cascade, bringing down not just the systems immediately affected but also the entire complex of converged systems and with them potentially the infrastructure of the entire social order.

As the ephemeralization of systems continues to accelerate, the odds increase that a malicious catalyzing event will set off a much more terrible set of consequences than even the perpetrators contemplate, collapsing system after system like dominoes until the entire socioeconomic edifice is brought down. On September 11th, 2001, the world got a taste of the increasing asymmetry between the force needed to set in motion a cascading failure and the eventual consequences of the resulting chain reaction, which, in that event, far exceeded the expectations of even the conspirators.⁹

Yet as Professor Schuurman observes, the "Jihadist terrorists", however adept in their destructive uses of technology, are "only the most powerful and the most dangerous expression of the spreading counter-movements ... today found around the world"

⁹ A videotape made of a conversation involving Osama Bin Laden immediately after the fall of the World Trade Center revealed that none of the conspirators had the slightest idea that such a grand result was possible; see Tanner 2009: 279

(Schuurman 2007: 77). They are perhaps the most visible subset of the growing number of affinity groups ever more alienated and disaffected from the triumphal march of technological civilization — meeting secretly, demonstrating openly, praying devoutly or staring angrily at their video screens. Inhabiting not a state but a state of mind, they are more pervasive and harder to neutralize or even to identify than those who identify themselves publicly as ‘Jihadists’.

The way out of the deadlock will be found through selflessness. The only alternative that can bring a solution will be to stop hating and to love, to stop wanting and to give, to stop dominating and to serve (Cf. Schuurman 2007:82). It is a message consistent with all three Abrahamic religions, but the growing fragility of technology gives it a harder edge. On the brink of the volcano, the charge of the Prophet Moses becomes our charge as well: “Life and death, blessing and curse, are set before you. Therefore choose life, that you and your descendents may live.” As technological civilization hurtles towards its crucible, that admonition can be taken literally.

We are lived by forces we scarcely understand
—W.H. Auden

The telos of technology and its spiritual challenge

In his contribution to this conversation, René Munnik begins with the Roman Catholic definition of technology and develops it to its profoundest depths, in effect aligning it with the most profound of Augustine’s Confessions: *Nos fecisti ad te et inquietum est cor nostrum donec requiescat in te* — “We are made for you and restless is our heart until it rests in you” (see Chapter 6). What Professor Munnik names as the ultimate motivator underlying the technological paradigm, “the human uncontrollable desire”, is the primal longing in each soul for the restoration of that originary union — the longing that humanity perversely or obviously attempts to satisfy through domination and through liberation from all restraint.

The perspective that technology is, in essence, a spiritual phenomenon carries with it the implication that the dis-ease infecting technological civilization is not curable by treating symptoms, through ameliorations such as solar panels, hybrid cars, organic farming, tree planting, recycling, carbon credits, condom distribution, land trusts, environmental controls, etc., however conscientiously applied. Such symptomatic relief is necessary but cannot cure.

In its fundamental nature, technology is rooted in the physical embodiment of spirit. Every embodied being lives its life by extending its being into the faculties provided by its physical body. Many creatures extend their being yet farther by annexing inert objects — rocks, sticks, strands, the remains of other creatures and so on. A bird poking an insect out of a hole while gripping a stick in her beak or a primate carefully selecting a series of particularly shaped stones to form a set for accomplishing a series of related tasks offer proof that non-humans make and use tools and even systems of tools. For humans and non-humans alike, the experience of tools is the same: all become extensions of the user’s being, projected into the world in ways that overcome physical limitations. Scientist-philosopher

Michael Polanyi named this ‘indwelling’: persons indwell their bodies and thence their tools, attending *to* the object of their interest by attending *through* their tools, subsidiarily.

Referring to Polanyi’s *Scientific Thoughts and Social Realities*, physicist Yu Zhenhua observes that, normally, we do not attend to our body as an external object but we always rely on our body as a means for our intellectual and practical control of the outside world. Polanyi generalizes this point and says, “We may identify, therefore, our knowing of something by attending to something else with the kind of knowledge we have of our own body by dwelling in it” (Yu Zhenhua 2005: 9).

Technology, rather than being exclusive to or definitive of humanity, is a continuum that begins with embodiment itself, relating us in the most fundamental way to the other species facing mortality along with us. From our bodies, we extend their being into tools, making them a part of us and us a part of them. Thence, we come to indwell systems of tools, i.e. technology.¹⁰

What is it that distinguishes human technology from its precursors, other than degrees of complexity and scope? What makes the qualitative distinction between a hungry primate reaching into an anthill using a straw to extract the ants and a lonely human reaching wirelessly into cyberspace to commune with a loved one on another continent? Why is the development of technology so much more absorbing for humanity — so much more integral to human being?

The Genesis story shared by the Abrahamic religions draws the line differentiating humans from all other terrestrial embodiments of being. In Genesis 3, the story of Adam and Eve symbolizes the advent of the first humans to manifest our defining trait: “For [when you gain the knowing] your eyes will be opened and you will be as gods, understanding good and evil.” (Genesis 3:5) That promise, passed up the chain of being from animal consciousness to Eve to Adam, can be articulated as: by their own outreaching, extending themselves into the physical world, mortals can transcend the limits imposed by their physicality. To be tempted by that promise requires a power available only to humans (as far as we know): the power to comprehend *limitlessness* — to grasp that more and more (of anything) can lead to more and more, and then more and more, without end. To conceive limitlessness is to know something of the divine, if only its shadow. From the human perspective, it is the possession of limitlessness that distinguishes divinity from mortality — which entails freedom from any and all bounds imposed by physicality, hence immortality and hence the unlimited power to instantly actualize one’s intentions unimpeded by physical inertia or even by the need for physical instrumentality. From this soaring perspective, even God becomes defined by limitlessness, as “that than which nothing greater can be conceived” (Anselm, Avicenna).

The primal desire innate in all animals, whether human or non-human, — that there be no impediment to fulfilling one’s immediate desires — becomes transformed when experienced by a being capable of conceiving of limitlessness. That knowing initiates the quest for limitless wealth and unlimited power, limitless beauty and absolute perfection, limitless discovery and unconstrained innovation, limitless conquest and endless empire, limitless freedom and ruthless domination, limitless truth and infinite justice, limitless progress and optimal efficiency — the scope of the quest is... limitless. It is that same

¹⁰ This is an experiential rather than an ontological description and not a claim of substance dualism. The dynamics of an embodied entity’s phenomenological and experiential encounter with physicality do not necessarily imply a substance dualist ontology.

knowing that engenders the human presumption that technology can advance indefinitely to solve all problems, even those caused by technology itself, and that the resources and capacities to do so can be extracted inexhaustibly from the lands, seas, skies and the denizens thereof.

The technological dynamic of always striving to “do more and more with less and less” puts technology on a trajectory that ends only in limitlessness. Whether one realizes this or not, each time one uses technical means to overcome obstacles and effect intentions, and then feels drawn towards the horizon of ever better means (new! improved!), one is in quest of limitlessness: omnipotence, omniscience and omnipresence; the power to do everything while requiring nothing; in other words, the power to actualize all desires without the need for physical instrumentality — *to be as gods*. Offered this choice prior to his gaining moral insight, Adam is too naïve to discern the cruel twist: though a mortal may strive to be *as* a god, a mortal can never *become* a god. A mortal cannot transcend mortality to achieve limitlessness. Because entropy is of the essence of physicality, mortality is of the essence of physically embodied being (“From dust you were made...”) and thus limitedness is of the essence of mortality. In his naïveté, unaware that his being lives eternally in the midst of God’s becoming, Adam and his descendents choose the self-separation from God that occurs whenever the quest to be *as gods* supplants the experience of abiding *with God* in caring for each other and for God’s garden world.

Thus technology is telic — proceeding towards its *telos*, meaning the outcome entailed by its fundamental nature from its very beginning. The technological *telos* is unattainable because, as in relativity theory, approaching the asymptote of limitlessness generates an equal and opposite tendency towards disruption. As the converged mega-system of technological civilization approaches the asymptote of limitless power from limitlessly ephemeral instrumentality, it simultaneously approaches the asymptote of infinite fragility. Somewhere between there and where we are now is the practical limit of technological progress, beyond which lies the chasm.

If technology is not to drive civilization and its environment into unsustainable fragility and ultimate cataclysm, its all-consuming positive feedback loop must be contained and redirected by some guiding influence. That benign constraint cannot result from a reactionary Luddite suppression of technology, which is bound to produce its own reaction. What has to be supplanted is the subconscious striving for *omnipotence* — the “Monster of the Id”¹¹ in whose image technology now too often configures itself. Only a *conscious* purpose with the power to inspire a new paradigm for a sustainable, fulfilling world system can do so.

¹¹ Phrase from science fiction film *Forbidden Planet*, dir. Fred M. Wilcox, screenplay Cyril Hume, story Irving Block (Metro-Goldwyn-Mayer, 15 March 1956).

*A very Faustian choice is upon us: whether to accept our corrosive and risky behaviour as the unavoidable price of population and economic growth or to take stock of ourselves and search for a new environmental ethic.*¹²
—E.O. Wilson

*We are stardust — we are golden — billion-year-old carbon,
And we've got to get ourselves back to the Garden.*¹³
—Joni Mitchell

Conclusion

Beyond the technological paradigm: The planetary commonwealth

By updating both the idea of nature and the self-concept of humanity to reflect the freshest scientific findings, the most sensitive ethical insights and the wisest spiritual counsel, conditions could be propitious for the emergence of a truer model to guide us through the crucible. The three ideas discussed previously — critical frangibility, the lure of unattainable limitlessness and the kinship of living beings — suggest three objectives to guide that endeavour.

Critical frangibility

The threat that the increasing vulnerability to disruption as technology advances will catalyze a cascading collapse of civilization can be met sustainably in only one way: by alleviating, insofar as possible, the motivation for any person or group to bring down what they perceive to be the apparatus for injustice, ruthlessness, indifference and corruption. The new model must therefore provide that justice, integrity and caring for all persons are to be so deeply ingrained in every social institution and interpersonal encounter, so pervasively throughout the world, that alienation and disaffection in general are minimized.

This objective comes first because it is prerequisite and *sine qua non* for a sustainable technological civilization. Although strong security measures are needed to guard civilization's technical edifice, none can be so perfect as to obviate the need for this florescence of justice and mercy. And although such measures are mandated by every faith and every moral and ethical code, self-interest has heretofore enjoyed the luxury of routinely trumping and trampling on the moral imperative. What is required for our collective survival is to act from the realization that self-interest is now perfectly aligned with the moral imperative.

The lure of limitlessness

Achieving a sustainable civilization requires living within the limits imposed by our mortal finitude and planetary resources. That, in turn, dictates the second objective: a worldwide

¹² Journal of Soil and Water Conservation, 05/01/06, available at <http://www.jswnonline.org>

¹³ Joni Mitchell, "Woodstock", © 1969 by Siquomb Publishing Company.

rectification in the ways most human beings sustain themselves and their families, pursue happiness and define fulfilment. For the peoples of the developed nations, such a rectification implies a drastically curtailed dependence on acquiring and consuming material goods and cheap energy, and a repurposing of those whose employment depends on the produce-consume-discard economic paradigm. For the peoples of developing nations, that entitlement carries with it the responsibility to drastically curtail birth rates (as with China's one child policy) in exchange for the assurance of a universal social safety net, since the established fact is that a reliable social welfare system and sufficient material sustenance are the only guarantors of achieving the significant, enduring and voluntary reductions in human birth rates required for a sustainable planetary ecosystem.

The kinship of living beings

The first two objectives enable the third: the awakening of humanity to its unique, noble and destined purpose. For the first time, humanity is in a position to understand that its collective mission — the reason for having evolved from the elements of this planet — goes beyond survival and reproduction, domination and control, the limitless pursuit of ultimately worthless worldly rewards, and the ultimately futile pursuit to “be as gods”.

Reconceiving both the natural and human worlds — constituting the one and only known biosphere in the universe — as a single community of mortal beings, each of whom is entitled to a share in the pursuit of happiness, reveals Nature in her true glory. Nature is not a verdant recreational preserve or unfenced zoological garden between our cities nor is it a teeming impersonal force whose legions are at war with humanity. Instead, it is an ecological commonwealth encompassing humanity as one species among millions of others engaged in the most wondrous miracle imaginable: the confluence of fiery spirit with the remains of stellar explosions in just the way that brings forth life on Earth.

Humanity is the species most capable of comprehending and appreciating that miracle. That fact alone should point to a purpose beyond the mundane. It is of the essence of the new paradigm that humanity realize its destined role as a special and integral part of the ‘natural’ commonwealth of all beings — special not in privilege and dominion but rather in capacities and responsibilities. ‘Commonwealth’ in this expanded context refers to the interdependence of all living beings in their natural harmony — a balance to be restored, safeguarded and enhanced by the governing intelligence native to the Earth that we call humanity.

Neither science nor religion dictates that humanity's destiny is to be the species whose intelligence brings on a planetary mass extinction — a cataclysm that has not happened for many millions of years yet is already underway. Such an outcome of the human story exposes the failure of something essential to the reigning paradigm — the meaning it ascribes to *homo sapiens imago Dei*.

If it is not to implode, that paradigm can only be burst from within, as a cocoon is split open during metamorphosis when the being inside reveals itself transformed or dies in the attempt. A paradigm cannot burst itself; revolutionary ideas must be put forward so that the Spirit can charge with passion and commitment — ideas that, once articulated, become self-evidently the next step in the long Spirit-led progression towards humanity's salvation.

It is professor Schuurman's insight that the supplanting paradigm will “differ from the previous [paradigm], yet [incorporate] the old in a process of transformation...” (76) The

new paradigm, implying as it does a continuum uniting humanity in the entire body of life, positions homo sapiens as the head that guides and heals the body of life instead of the ravaging beast that consumes it. The conceptual reintegration of the being of humanity into the being of nature requires a fundamental revaluation of the very idea of 'species', as the world has struggled to reevaluate the concepts of race and gender that have facilitated exploitation from time immemorial. Species must no longer be understood as the grounds for privileging humanity to do what it will with all other species.

Such a revaluation does not contradict the special spiritual status ascribed to humanity by the Abrahamic religions, intertwined as it is with our special responsibilities of stewardship and our God-given capacity for especially conscious discourse and communion with the Divine. That will become evident in the means by which the various religions and worldviews, in all their differences and particularities, find common ground to sanctify a new paradigm through which their faithful can survive and find fresh meaning in their faith.

To actualize this vision involves the globalizing of human purpose — an unprecedented transformation equivalent to the shift ages ago from hunter-gatherer to agrarian culture. A decisive transformation is indeed already underway but is not one favourable to life. Some scientists have named the present geological era the *Anthropocene* because of its anthropocentric character — because humanity rather than geology or climate or cosmos is now determining the fate of the Earth. At present, 'Anthropocene' has a shameful definition: the fleeting epoch during which the intelligence of one species perpetrates the Earth's sixth mass extinction while extinguishing its own culture. Yet 'Anthropocene' could come to mean something entirely different — something noble, even redemptive: the time marked by the awakening of Earth's planetary intelligence, just in time to circumvent catastrophe and ensure the safeguarding of all life.

Although the model presented here seems implausible given the ugly reality of the course of history, it derives plausibility from the likelihood that 'choosing life' in this particular way may be the only alternative to plunging the world into a depthless dark age that would surely efface all but the most minuscule traces of science and crumbs of culture, once and for all enshrouding the great religions in a contemptible tyranny of taboo and superstition. Truly, we would be the children of Sisyphus.

The array of human intelligences — intellectual, emotional, physical, spiritual, each illuminating the others — has been the source of so much shameful devastation and revolting venality for so long, and now such incalculable danger; yet equally the source of so much power and so many marvels, of such insight and beauty. It is human beings who are most gifted to mirror God's love for this rich, beautiful, delicate and precious world and all who share its lands, waters and skies. It is we who hold the fate of the Earth in our nimble grasp, gifted as we are with the technical means to assure the planetary commonwealth's healing and harmonious continuation. Bound to Nature yet uplifted by Spirit, divinely called to choose life by serving rather than destroying it, humanity is commissioned to care as no other species can for life's only known harbour in the cosmos — this small blue planet, still steeped in its dream.

References

Schuurman, E. (2008) The Challenge of Islam's Critique of Technology, valedictory address, Wageningen University September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>

Ellul, J. (1964) *Technological Society*, New York: Alfred A. Knopf, first edition.

Ellul, J. (1990) *The Technological Bluff*, Grand Rapids, MI: Wm. B. Eerdmans.

Friedman, T.L. (2005) *The World is Flat*, New York: Farrar, Straus and Giroux.

Fuller, R.B. (1981) *Critical Path*, New York: St. Martin's.

Meher Baba (1967) Travail of the New World Order, in: *Discourses* Vol. III, New York: Sufism Reoriented; Originally written and published in 1941-1942.

Yu, Z. (2002) Two Cultures Revisited: Michael Polanyi on the Continuity Between the Natural Sciences and the Study of Man, *Tradition and Discovery*, 28 (3), 6-19.

Tanner, S. (2009) *Afghanistan: A Military History from Alexander the Great to the War Against the Taliban*, Cambridge: Da Capo, April 27.

Structures for an imperfect life: The development of ‘evil-proof’ technologies

Marc J. de Vries

Abstract

Our world is a garden that God has asked us to care for but we must recognize that this garden is an imperfect one. It is not the same as the Garden of Eden described in the first chapters of the Bible. According to the Bible, this imperfection will remain until God restores perfection. We must, therefore, consider imperfection in our development of technology. When we develop new technologies, we need to consider not only how they will be used by those with good intentions but also how they will be used by those with evil intentions. This implies that certain limits may need to be put on technological developments.

Introduction

In this book, the metaphor of the garden is used to indicate that the reality in which we live is something God cares about and that we have a calling to care for that reality. The term ‘garden’ immediately brings images of the ‘Garden of Eden’ to mind. In this chapter, I want to show, however, that the garden we are dealing with is not perfect. We are not living in Eden anymore. We are living in an imperfect garden in which we, as caretakers, are also imperfect. Therefore, in seeking structures for life, we must realize that this life is an imperfect life and that we should include the notion of imperfection when we consider how to deal with technology in our current society.

In his valedictory address, *The Challenge of Islam's Critique of Technology*, Egbert Schuurman shows how both Islamic and Christian scholars have critically analyzed technological developments in Western industrialized society and culture. The Islamic critique ought to differentiate between the decadence that is caused by secular thinking in the Western world and the role of Christianity. In this paper, I want to show that the Christian critique of technology has a special dimension that secular critique does not, and that this dimension can be used to refute secular thinkers' contention that it was Christian religion in particular that caused the problems related to technological developments in Western culture. I also want to show that this view offers an alternative route for the responsible development of technology in which the notions of judgment and imperfection are taken into account. First, however, I want to demonstrate how the critique made by phenomenologists and neo-Marxists fall short, as does the critique of Christianity as the cause of technological development made by an often-quoted non-Islamic author, David Noble.

A critical response to technological developments

Schuurman's main point of critique is that, in the Western world, secular thinking has led to a loss of real meaning and that the ideal of mastery and control has come to dominate our ways of being. Rather than fulfilling the real meaning of life by obeying God's will, humans have chosen to be autonomous rulers over creation. Schuurman also mentions Heidegger as a critical philosopher with whom several Islamic scholars have agreed (Schuurman 2007). Heidegger was not a Christian philosopher, although some Christian philosophers have adopted his ideas and continued thinking along the same lines. One of these philosophers is the American philosopher, Albert Borgmann, who has expanded the idea of alienation through technology. Borgmann uses the term 'device paradigm' to describe how powerful devices have become in the provision of certain commodities and how that power has decreased our direct contact with reality. We no longer experience direct contact with our surroundings by going into the woods and chopping down trees in order to heat our homes. A single tiny movement is all that is needed to adjust the thermostat after which the temperature almost immediately rises. Borgmann's solution is what he calls 'focal activities' — activities that bring back physical effort and greater direct contact with reality. In Borgmann's extension of Heidegger's thinking, the limitations of this approach are even more evident than in Heidegger's writings. Only our personal experience with reality can determine our quality of life and the role of technology in it. However, enriching personal experience is too poor a solution for the problems we face today. The internet appears to increasingly fulfil that function in spite of philosophers' efforts (e.g. Hubert Dreyfus) to show that the lack of bodily experience seriously limit this experience. As such, phenomenology seems to fall short in offering a real alternative.

Others, like Andrew Feenberg, have chosen the path of neo-Marxism and focus on the social rather than the personal dimension. Feenberg argues that technological developments should be realized in two phases. The first is a phase of primary instrumentalization in which a social problem is decontextualized and treated as a technical problem for which a solution is designed. The second is a phase of secondary instrumentalization in which the solution is decontextualized and in which users can sometimes completely redefine the solution according to the social power structure at hand. This approach also has serious limitations, especially given that what currently dominant social powers want is not necessarily good. Clearly, both the phenomenological and the neo-Marxist approaches are limited by the fact that their criteria for good technological development are derived from a this-worldly perspective, either from individuals or from social organizations. A more fundamental shift in thinking is therefore needed, as Schuurman (2008) also argues. However, several secular scholars believe that Christianity cannot provide an alternative solution because, in their view, it is religion itself that has caused these problems. Before I can outline a solution suggested by Christian faith, I must first refute this contention.

A false image of the role of religion: Striving for perfection

Schuurman mentions that there is a heightened interest in religions because people acknowledge that religion can bring to our attention neglected fundamental questions. However, this interest in religions has also led some scholars to view religion as the main cause of problems. With respect to environmental problems caused by technological developments, Lynn White has argued that, according to Christianity, it is God's will that humans exploit nature. There is some truth to his critique, namely that Christians have indeed cooperated in the exploitation of nature. However, I would contend that, in doing so, they have forgotten that God's command to rule over nature was regulated and limited by the command to care for it. As such, Christian 'dogma' (the term that White uses) does not allow for the unlimited exploitation that White claims it does.

More fundamental is David Noble's view on religion as the driving force behind technological developments in the Western world. He claims that it is, in particular, the religious ideal of perfection that motivated not only non-religious people but also Christians and other religious groups to develop technology to an unlimited extent. In his book entitled *The Religion of Technology*, he argues this both from a historical and a systematic perspective. However, as far as Christianity is concerned (and most of his examples do deal with Christianity),¹⁴ his argumentation is seriously flawed by his selection of examples. Rather than quoting authors in mainstream Christianity, he uses sects and subcultures to provide evidence for his view. He thus fails to capture the essence of mainstream Christianity that puts emphasis on the fact that, after the fall of man in paradise, realizing an ideal world was no longer a possibility. Let me further elaborate and demonstrate how the very same religious perspective can help us avoid the pitfalls of the overzealous efforts to attain perfection that Noble ascribes to religion and, in particular, to Christianity, and that has also impacted non-religious technologists.

In Genesis 3, we read that, when Adam and Eve failed to obey God's command to abstain from eating the forbidden fruit, they were driven out of Eden and told that, from that day on, their labour would be met with resistance by the created reality, that the earth will bring forth thorns and thistles. We do not read that God withdrew his command to care for and maintain the created world. I contend that humans are still called to manifest that which God had intended for the created world. However, after the fall of man, the earth became cursed by God because of humans' transgressions. The bringing forth of thorns and thistles mentioned in Genesis 3 does not merely reflect a natural cause-and-effect relationship. In my view, more is at stake here. The thorns and thistles are God's punishment for sin — his judgment. The same can be observed in the Book of Revelation. In Chapters 6 and 8, we read about disasters that strike the earth, disasters whose resemblance to current environmental problems is striking. Here, too, we read that these disasters are not merely the result of natural cause-and-effect relationships but that they are reflections of God's judgment. This does not imply that cause-and-effect relationships play no role but it does imply that more is at stake.¹⁵

¹⁴ In his chapter on space travel, for instance, he focuses on the Christians working at NASA. Also, when he discusses Von Braun, he claims that the religious foundations for Von Braun's motivation were explicitly Christian (Nobel 1999: 127). Likewise, in other chapters, he starts by focusing on Christians and then moves on to non-Christians that have been impacted by the religious zeal for perfection.

¹⁵ Although Schuurman, in his valedictory address, refers to Iqbal and his view that harmony, justice, equality, solidarity and care should be reflected in human society, he does not mention if Iqbal, or others, also acknowledge the impact of sin on this.

Clearly, this is in striking contrast to the Islamic view regarding imperfection. According to Islam, imperfection was part and parcel to creation from the very beginning because only God is perfect and God did not want humans to be able to compete with him. Therefore, humans were made imperfect in that they were not granted the same knowledge and capabilities as God. Further, the Islamic perspective claims that imperfection was present from the beginning in that humans have always been influenced by both good and evil. It is therefore the task of humans to fight the bad and strive for the good. Sin is thus the result of poor decision-making in this dilemma between good and bad. Perfection only exists in God's nature, not in human nature. Unlike Christianity, Islam does not recognize the concept of original sin. Consequently, according to the Islamic perspective, imperfection does not have a negative connotation and is not related to the nature of humans.

Not only the Book of Revelation but also several other biblical passages clearly indicate that it is only through God's final intervention that a new state of perfection can be realized.¹⁶ No human effort can change that. Certain religious movements claim that human efforts should be directed towards bringing back the perfect world but these movements are characterized by a rejection of the incredible impact of sin and subsequent judgment. It is unfortunate that Noble draws on these religious movements to support his position, particularly because these movements are not reflective of mainstream Christianity. Mainstream Christianity has always acknowledged that human efforts cannot undo the brokenness and imperfection of the created reality that is present. Only Christ's return can fix that brokenness and that imperfection.

Imperfection appears in several ways. First and foremost, it is reflected in humans' knowledge. The knowledge humans have regarding reality, thus the knowledge they use to determine how to best respond to God's call to develop cultural activities, is limited, not only because humans do not have God's omniscience but also because their knowledge is distorted by sin. We, as humans, tend to claim 'knowledge' about that which we wish to be true because it fulfils and fits with our (sinful) needs. This is not the same as seeking knowledge in an effort to find truth. Second, our cultural labours are driven by the wrong motives. As Schuurman (2007: 8-9) previously indicated, we seek to dominate and control rather than love and serve. This desire to dominate and control can be taken to its limits when humans strive for perfection. In fact, when we strive for perfection, we essentially attempt to undo God's judgment, not through Christ who came to carry away sin and judgment (according to the Christian perspective) but by our own efforts. In the transhumanist movement, this struggle for perfection even includes efforts to attain immortality that, according to the Bible, humans were denied by God in Paradise after the fall¹⁷ It is as if these transhumanists think they can order the guardian angel at the gate of Eden¹⁸ to step aside and let man take the fruit from the tree of life on his or her own account. This very much resembles the efforts of humans to build a tower on the plain of Shinar — the tower of Babel, as we usually call it.¹⁹

Towards structures for an imperfect life

What should our response to this be? How should we proceed? How can we respond to God's call to cultivate his created world and, at the same time, avoid the pitfall of trying to undo

¹⁶ E.g. 1 Cor. 13:9-12 and 1 Cor. 15:50-52. It should also be noted that, until Christ returns, God can even use the suffering and problems we face as a result of his judgment for good purposes. This, however, is not discussed further in this paper.

¹⁷ Francis Fukuyama (2004) presented a critique of the values held by transhumanism and contends that the notion of mortality is vital to being human.

¹⁸ See Genesis 3.

¹⁹ See Genesis 11.

God's judgment passed after our fall? This may appear to be a very difficult question but, in fact, any engineer should have enough experience to know the answer. An engineer knows that his or her efforts should not be aimed at realizing the perfect product but at finding the right trade-off (Dosi 1982, De Vries 2009). Most of what engineers do is focus on finding the right balance between what is desirable from a perfectionist point of view and what is feasible from a practical point of view. Denying the latter is perhaps the most serious obstacle to the former. Rather than ignoring the imperfection of reality, the engineer deals with it.

The question is thus not: How can I make the product perfect? The question is: What imperfections still allow for an acceptable situation in which humans can safely and comfortably live and experience the sense of reality in spite of its brokenness? From the perspective of Reformational philosophy, the answer is as follows:²⁰ An engineer has to study the product from as many different perspectives as there are aspects of reality. Aspects include the physical, the biological, the psychological, the social, the economic, the legal, the aesthetic, the ethical and the belief or trust aspect, to name just a few. Each of these aspects has laws that govern the behaviour of the product. For example, the physical laws govern the product's physical behaviour, the economic laws determine if the product will be economically acceptable and the psychological laws determine if the user can work with the product. Thus, each aspect contributes something to a list of requirements. Every engineer knows that it is impossible to find one single design that matches all the requirements emanating from the whole spectrum of aspects. What the engineer has to do is find the trade-off that allows for the most crucial requirements to be met and that subsequently allows for as many of the other requirements as possible to be met, if not fully then at least partially.²¹

This impossibility reflects our human nature. We are not like God. We are limited in our knowledge and capabilities. Because of our sin and God's subsequent judgment, reality no longer allows for perfect solutions. The engineer must recognize that imperfection is the result of sin and that humans do not always think and act according to God's will. Therefore, in designing a product, the engineer must consider what can happen when that product ends up in the hands of a (morally) bad user. In other words, we need to consider just how much (technological) power we want to put in sinful human hands. Also, because we recognize that sin yields imperfection and we know that we are inclined to hold things to be true not because they are inherently true but because they serve our sinful purposes, the engineer must acknowledge that he has to reckon with both imperfections that are part of our original human nature (being less than God even before the fall) and with imperfections that are the result of our sinful thoughts and deeds. There may even be a need for technologies that are not aimed at fulfilling human needs but rather at reducing the effects of sin. An example is technologies that can identify and punish criminals. In the metaphor of the garden, these technologies could be termed technologies for removing weeds.

Although this may seem to be common sense, it nonetheless requires a 'paradigm shift' that is similar to what Schuurman suggests on page 14 of his valedictory address. Kuhn, in his writings on paradigms, uses the term 'incommensurability' between paradigms to indicate that, although terms may seem the same in different paradigms, often the paradigms are so fundamentally different that the terms need to be redefined. An example of such a term in the context of what is discussed here is the term 'sustainability'. In the Brundtland report, sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987: 24). Literally taken, this suggests a perspective of eternity because it posits that each subsequent generation will have all the resources necessary

²⁰ See also Chapter 2 of my book entitled *Teaching about Technology*.

²¹ Here I differ from Andrew Basden who, in his presentation of Reformational philosophy, defines the 'shalom principle' as the fit of the product with all aspect laws. See <http://www.dooy.salford.ac.uk/shalom.html>

to meet their needs, of which survival will, of course, be the most basic. Clearly, this suggests a utopian view of immortality, not unlike that of the transhumanists. This is problematic from a Reformational perspective in which sin and judgment are acknowledged. As such, the term sustainability requires redefinition. We must acknowledge that the quality of the environment will inevitably deteriorate despite of our efforts because of God's judgment (Book of Revelation, Chapters 6 and 8). We will reach a point at which not all needs can be met. Consequently, the question should not be how can we undo this process of deterioration but rather how can we use natural resources in such a way that a responsible trade-off between preserving as much as possible and using what is really needed can be reached? This kind of perspective does justice to the reality of God's judgment and yet endeavours to obey his call to cultivate the created reality.

This perspective also acknowledges rather than ignores the laws that God has laid down in reality. Today, we see numerous efforts to circumvent the laws of creation, particularly in virtual realities. In artificial environments, the ideal often is (or perhaps 'was' given the difficulties that have already become evident) to 'turn off' laws that limit our opportunities to realize perfection simply by reprogramming the simulation. I can change my character if I do not like my current one by redefining my avatar. In principle, I can 'undo' all actions that have negative effects by resetting the program. This is not possible in physical reality and perhaps that is why virtual reality is so popular. Virtual reality can also yield psychological problems when people discover that at least part of their life occurs outside of their virtual world.²² At the same time, the virtual world is as real as the rest of the world in that it employs and involves real minds that cannot fully ignore their nature and that are still subject to the laws of reality. The extent to which the relationship between real and virtual worlds is complicated is exemplified by the difficulties that occurred when efforts were made to apply the normal, 'real' legal system to crimes committed in virtual worlds. In the end, ways were found to apply laws to this new domain, thus demonstrating that the ideal of being able to function in a virtual world in which the laws of physical reality do not apply was unrealistic. Even in virtual reality, we must learn to live with imperfection because this is the necessary result of the human fall in paradise. From a Christian perspective, it is only new life in Christ that can bring perfection but not before he returns to earth. Until then, we must seek acceptable trade-offs as beings that are responsible to God. We must seek responsible structures for not a perfect but rather an imperfect life.

References

- Borgmann, A. (1984) *Technology and the character of contemporary life: A philosophical inquiry*, Chicago: University of Chicago.
- Dosi, G. (1982) Technological paradigms and technological trajectories, *Science Policy*, Vol. 11, 147-162.
- Feenberg, A. (1999) *Questioning technology*, London: Routledge.
- Fukuyama, F. (2004) Transhumanism, *Foreign Policy*, 144: 42-43.
- Noble, D. (1999) *The religion of technology: The divinity of men and the spirit of invention*, New York: Penguin.
- Schuurman, E. (2008) The Challenge of Islam's Critique of Technology, valedictory address, Wageningen University September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>
- Turkle, S. (1995) *Life on the Screen. Identity in the Age of the Internet*, New York: Simon and Schuster.

²² Turkle (1995) believes that virtual reality has therapeutic value in the treatment of psychological problems but also indicates that the same medium can be used as an escape from the problems of real life.

Vries, M. J. de (2005) *Teaching About Technology: An Introduction to the Philosophy of Technology for Non-Philosophers*, Dordrecht: Springer.

Vries, M.J. de (2009), The translation of user requirements into technical specifications, in A.W.M. Meijers (ed.) *Handbook for the Philosophy of Technology and Engineering Sciences*, Ch. III.4, Amsterdam: Elsevier.

White, L. T. (1967) The Historical Roots of Our Ecologic Crisis, *Science*, 155 (3767), 1203-1207.

World Commission on Environment and Development (1987) *Report of the World Commission on Environment and Development: Our Common Future*. Published as Annex to General Assembly document A/42/427, Development and International Co-operation: Environment August 2, 1987.

Against the Promethean presumption: A Roman Catholic assessment of technology

René P.H. Munnik

Abstract

In this chapter, the main features of a Roman Catholic perspective on technology are presented. Technology is, in principle, seen as something good, as an expression of human desire and human freedom. At the same time, technology is profoundly ambivalent in that it can never provide an adequate answer to the human desire and longing for salvation and happiness. Dismissal of this ambivalence will likely result in a technicist 'intoxication with total autonomy.' This Roman Catholic perspective deals with some aspects of Schuurman's critique of technology.

Introduction: Two basic presuppositions concerning technology

In July 2009, the Vatican released Pope Benedict XVI's third encyclical letter, *Caritas in Veritate* (CiV). This letter contained an interesting sixth chapter entitled 'The Development of Peoples and Technology' (CiV §68-77) that corresponds, to a large extent, with Schuurman's position on technology. In this contribution, I will consider Schuurman's critique of the dialectical tensions of Enlightenment thought between control and human freedom, and discuss a Roman Catholic perspective on these issues.

To start, I want to cite two prayers that are part of benedictions for technical artefacts. These are taken from the *Rituale* of the Roman Catholic Church.

You are blessed and laudable, Lord our God. You supply in making perfect all of creation by the ingenuity and the labour of man. You reveal your greatness and goodness in the inventions of man. We ask You for all those who will use these technical devices for their good and prosperity, that they will acknowledge that You are admirable in your works and that they will be determined to serve You ardently (De Benedictionibus 1985, n. 693a).

And

Lord, omnipotent God, Creator of light, Source and Origin of all men. Pay attention to your servants who have construed this (nuclear) power plant; that they search unremittingly for your countenance beyond the darkness of this world, lest they may approach to You, inexhaustible Light in which we live, move and exist (De Benedictionibus 1985, n. 693b).

These benedictions comprise at least two fundamental presuppositions concerning technology and its outcomes.

First, technology and technical artefacts are valued as something good, at least in principle. The appreciation of technology is expressed once again when the priest prays, "By the labour of his hands, by the works of technology, man cooperates with the Creator in order to make the

earth a more dignified dwelling place for humanity” (*De Benedictionibus* 1985, n. 685). This appreciation of technology corresponds entirely with the Pastoral Constitution, *Gaudium et Spes*, which affirms that the monumental effort of technology can be (and by no means automatically is) a means for man to “relate himself and the totality of things to Him Who has to be acknowledged as the Lord and Creator of all. Thus, by the subjection of all things to man, the name of God would be wonderful in all the earth” (*Gaudium et Spes* 1965, n. 34). According to this document, this is a real possibility, provided that man acknowledges God as the Creator of all things. Nevertheless, it is a quite remarkable statement. Is it not so that the “subjection of all things to man” points more to man being a ‘will to power’ and ‘the measure of all things’ than to the outcome that “the name of God would be wonderful in all the earth”? Clearly, this presupposition requires further reflection.

Second, although *Gaudium et Spes* affirms that technology is good in principle, it also emphasizes that technology can never realize the ultimate destination of mankind nor can it provide an adequate answer to mankind’s ultimate concerns. As such, CiV §14 and §70 characterize technology as ambivalent. This becomes very clear in the benediction for the nuclear power plant when it directs attention almost immediately from the power plant and the electrical light it produces to the inexhaustible Light which is God. The message here cannot be misunderstood: human beings should never idolize technology by rendering it the honour of being the exclusive answer to their ultimate concerns. As a possible means for well-being, technology possesses its proper goodness at the level of physical existence but this is only a precondition for the real destiny of man — a meta-physical destiny — because the ultimate goal of human existence is to see God. I will take these two presuppositions as the starting point for my considerations.

Two considerations and a Catholic perspective

The *Rituale Romanum* calls technology a means for cooperation with the Creator because it discloses and realizes new possibilities. Again, there are two points to be considered here.

First, technological development comprises a cumulative exploration and realization of possibilities in the absence of proper clues regarding the limitation of such exploration. Thus, it creates the expectancy of a never-ending transgression of given borders. Technology continually gathers novel possibilities that transcend given facts.

Second, by disclosing possibilities and realizing them, technology creates a new human reality. Our current world is permeated through and through with technology, not only because we depend on it for our basic needs like food and housing but also because technological development has introduced novel needs and expectancies (e.g. mobility, information, and telecommunication) along with the possibilities they create. The technological emancipation from given facts involves necessarily a dependency on technology itself. In fact, ‘technotopia’ has become our habitat and our second nature.

There is good reason to ask if this technological development can be considered a means for cooperation with the Creator. Should we restrict technological development? And if so, what standards should we apply if technology does not offer them itself? *Caritas in Veritate* states:

Even when we work through satellites or through remote electronic impulses, our actions always remain human, an expression of our responsible freedom. Technology is highly attractive because it draws us out of our physical limitations and broadens our horizon. But human freedom is authentic only when it responds to the fascination of technology with decisions that are the fruit of moral responsibility. Hence the pressing need for formation in

an ethically responsible use of technology. Moving beyond the fascination that technology exerts, we must reappropriate the true meaning of freedom, which is not an intoxication with total autonomy, but a response to the call of being, beginning with our own personal being. (CiV §70)

This is a resolute rejection of the technicist idea of an unbounded autonomy that aims for absolute freedom by means of total mastery and control over nature. According to the encyclical letter, such freedom can never be authentic because authentic freedom implies moral responsibility as a “response to the call of being, beginning with our own personal being”. This position corresponds relatively well with Schuurman’s Reformational stance, although I presume that Schuurman would prefer to emphasize the biblical roots of human responsibility. Nevertheless, the Roman Catholic perspective does require some clarification, which I will endeavour to provide. Below, I discuss some distinctive features of the Roman Catholic perspective on technology by asking three questions. The answers will hopefully enable us to gain a more adequate understanding of the meaning of technology from a Roman Catholic perspective. The questions are:

- (1) Is it true that technology is simply an expression of our responsible freedom?
- (2) What are the consequences of technology in the context of human free will?
- (3) In what sense can our own personal being be the normative instance of technology?

Is it true that technology is simply an expression of our responsible freedom?

If technology was simply an expression of our responsible freedom, technical artefacts would do nothing more and nothing less than exactly what we want them to do. But do they? According to David Collingridge (1980, 11), modern technology suffers from a ‘dilemma of control’. Collingridge claims that, although the design of new technology can be easily modified during its development, this capacity to correct or modify is relatively meaningless given that it is impossible to anticipate the (social) consequences of that technology in the future. Future possibilities are simply too uncertain. However, once the real consequences and the undesirable side effects of that technology become apparent, correction and modification become urgent. Unfortunately, by that time, the technology in question has become so embedded in society that correction or modification is extremely hard to accomplish. An example of this is the millennium problem, which could have easily been avoided if technicians had only known beforehand.

The control dilemma implies that it is naïve to think of technology only in terms of mastery and control because the factual results of a technological innovation can differ substantially from the conscious motives behind its design. Above all, technology is a *venture* that may be motivated by a desire to control things and processes (for the good) but which is, in fact, always risky and uncertain. One never knows what Pandora’s box keeps in store. This insight should make us modest and prudent. There is no reason to believe perfectness can be attained through technology. The Roman Catholic perspective thus fully agrees with Schuurman that the idea of total mastery and control, as well as the idea of a totally autonomous ‘negative’ conception of freedom, is an important element in the contemporary cultural paradigm. CiV §14 speaks of a “dangerous technocratic ideology” while the dilemma of control emphasizes that it is not only a dangerous but also an illusory ideology.

What are the consequences of technology in the context of human free will?

Caritas et Veritate states that humans can freely relate to technology. But do we? According to Martin Heidegger we do not. His perspective is that human beings are radically historical beings, thrown in a contingent horizon of 'understanding of being' from which they interpret themselves and the world. In the case of modern man, this horizon of 'understanding of being' is the technological disclosure of reality. There are two matters of importance to be noted here. The first is that, according to Heidegger, the technological disclosure of reality is a *possibility* not a necessity. However, within the perspective of technology, this status as a possibility is concealed; it appears to be the *only* possibility. This reveals the ultimate danger of technology, namely that man, soaked in his activity of producing, forgets his essential openness to let things reveal themselves, thereby alienating himself from his own essence. The second matter of importance is that a disclosure of reality other than that of technology is also possible in, for example, art or poetry. However, this kind of disclosure it is not available or producible. According to Heidegger, this means that, within the framework of technology, we are free in the sense that we are able to realize available possibilities but we do not possess the ability to be free in a sense other than just that. Every attempt to overcome the technological framework by making other lifestyles and existential relations to reality available (e.g. in New Age thought) merely perpetuates the fact itself, namely that they are made *available*.

Caritas in Veritate articulates 'the problem of technology' quite differently. Like Heidegger, it is aware of the fact that man can become alienated from himself through technology. However, it contends that this dangerous possibility is based on a fundamental misapprehension of the free relationship to technology that man has *always* had. The difference between the *Caritas in Veritate* and Heidegger's perspective is rooted in philosophical anthropology. For Heidegger, human existence is radically *historical*. Modern man is thrown into a technological disclosure of reality which, in turn, determines his apprehension towards himself, his world and even God. It is possible to be aware of this but impossible to release oneself of this. In contrast, the Roman Catholic perspective sees human existence as something that is characterized predominantly by its *metaphysical* status. To be human means to be driven by a longing to understand the meaning of life — a longing that is constituted by a desire that cannot be silenced as long as it has not yet become at ease with a reality that transcends all making and producing. The peculiar nature of this metaphysical desire reveals itself in the awareness that no manmade reality can satisfy. The human soul seeks to come home and leave the alienation of the world which is paradoxical when this world manifests itself more and more as man's own fabric. This awareness can be hushed temporarily by the glorious promises of technology (the delusion of a Brave New World without any distance, resistance, suffering and death). It can also be temporarily blinded by enthusiasm about things achieved (a real technological appropriation of well-being and safety). However, as an existential undertone, this awareness cannot be silenced forever. It is not only at the core of the dynamics of technology — 'This product proved not to be *It*, what we all hoped for. So let's make things better' — it is also at the core of the intuitive knowledge that no human project can adequately correspond with the metaphysical desire of man. This intuitive knowledge reveals the fundamental freedom of man in relation to technology. No man who recognizes the inexhaustibility of his own desire can identify himself without hesitation regarding the things technology promises. Technology is fundamentally deficient.

In what sense can ‘our own personal being’ be the normative instance of technology?

Roman Catholic documents usually define technology as “the domination of man over nature” (Civ §69). However, this kind of definition is fairly stylized. In the real world, technology also implies domination of some people over others, as well as domination of anonymous technical artefacts over man. Let us, for a moment, turn to common speech and ask how plausible it is to assume that technology is basically human domination over nature.

Insofar as human beings are part of nature, they fall within the domain of the manipulated. This is most obvious in medical technology where the human body is considered to be repairable and (re)constructible machinery. You might say that these technologies concern the body that humans *have* and not the flesh that they *are*. However, this contention assumes a kind of objectification and dissociating relationship between man and his own body. In a somewhat superficial way, this from-its-body-dissociated man might be called *spirit*. If this makes sense, then technology is rather *the domination of spirit over matter* than the domination of man over nature. This definition requires, however, further qualification. After all, the spirit has its material, i.e. empirically objective, and therefore technologically controllable, aspects. In commercial strategies, thought control and biofeedback therapies, people attempt to make the spirit do what they want it to do. It is thus plausible that technology is *the domination of the will over (material, mental, natural, and cultural) reality*.

Let us take this notion yet one step further. Is the will exempt from manipulation? Is a marketing strategy nothing more than an attempt to manipulate the will of consumers in order to maximize the profit of producers? Such efforts are about a seducing, about the ‘stronger’ will, about dominating someone ‘weaker’ that cannot resist temptation. However, at this point, we come to a stop because seduction is an exertion of power over another. The question is then what renders this possible? There must be something in the heart of man that may not be stronger but is certainly more fundamental than any (strong or weak) will — something that motivates the seductive act of the strong and makes the weak vulnerable to seduction, something that generates a tendency to both the former and the latter. This tendency in the heart of man can only be a transcendental desire which in and of itself is not the object of an earlier disposition of the will. It precedes every objective will, be it strong or weak, directed to ‘this’ or ‘that’. It is a desire from which no human can dissociate himself because it constitutes what human beings basically *are*. Of course, these other instances — nature, matter, the body, the spirit and the will — belong essentially to man but they also bear the character of something from which the self can distance itself. They can be objectified and pondered but this does not apply to the transcendental desire that makes man ponder. It constitutes his basic relationship to other things, to other people and to himself. And so, at the end of this ‘reduction’, I arrive at a conception of technology as *the domination of human uncontrollable desire over controllable reality*. This perspective calls for a few qualifications and clarifications.

First, the above conception of technology is not ‘realistic’. In technology, this desire is *expressed* and partially answered but never satisfied. Moreover, technology, as it currently exists, is also a means by which the desire of one can frustrate the realization of the desire of another. Additionally, every technological innovation opens new doors for injustice and suffering. In short, the fact that humans are constituted by desire justifies nothing in itself and everything that human beings undertake can fail in all sorts of ways. However, these considerations cannot deny the kind of dynamics that underlie technological development. They are fuelled by desire.

Second, the fact that the uncontrollable transcendental desire dominates all our actions does not mean that this desire automatically seeks domination. Rather, it means that every form of domination and control is motivated by desire. And this is something quite different. At this

point, two anthropological perspectives stand radically opposed to one another. When the ‘controlling desire’ is identified as ‘the desire to control’, technology appears to be an expression of the ‘will to power’ and the desire to control is considered the basis of human will and actions. In radical opposition to this Nietzschean perspective is the perspective of the Roman Catholic Church and Schuurman’s Reformational position. Schuurman would likely claim that human freedom can only be authentic within the normative structures of reality. Roman Catholicism agrees but would surely add the eros-theme and claim that technology expresses human desire — a *desiderium naturale* or ‘natural desire’ — that is motivated by an aim that transcends all production and domination. It is a desire that is silenced only by the immediate presence of its primary object and that object can only be the Motive *sui generis*, an ‘unmoved mover’.

Third, the idea that, in his engagement with technology, man bears responsibility for himself and his fellow man needs to be qualified. Technology finds its motive in the desire that man essentially *is* and it is *justified* insofar as it helps us to realize what the desire seeks to attain. This is not the same as ‘what people actually want’. From the Roman Catholic metaphysical perspective, the transcendental desire aims at perfections that are desirable in and of themselves: *to live, to know and to be known, to love and to be loved*. The realization of these perfections never fully succeeds, not through technology nor through anything else. The desire can be misunderstood (e.g. as the ‘will to power’) and the outcomes of technology — however noble their motives may have been — can become horrifically counter-productive.

Nevertheless, you may ask how this desire can be met, if not through technology nor through human initiative. Given the boundless transgression of borders which characterizes technological development, we can claim that this desire can only be met in a reality that in itself is unlimited. Religious vocabulary forces itself upon us. The transcendental desire is for *id quo maius cogitari nequit*, for ‘something which more perfect cannot be conceived.’ This is the notion of God according to Anselm of Canterbury. It is possible to contend that this transcendental desire expresses the initial object of every human desire because it is *there* and nowhere else. It is where its restless quest comes to find peace. In short, technological development is a quest that is based on a desire that is rooted in a ‘lived’, unreflective search for God. Technological development can take the form of a boundless transgression of borders because the quest for God is in its heart from the start. However, if technology is misunderstood as the *adequate* answer to this desire, it becomes an idol of the worst sort. It becomes a truly Promethean presumption.

A new cultural paradigm

At the end of his valedictory address, professor Schuurman proposes an alternative for the dominant ‘machine model’ and its accompanying tendency to control and manipulate nature. The alternative he proposes is a ‘garden model’ in which man acts responsibly towards the Creator and in the service of life. The Roman Catholic perspective on technology is in complete agreement with Schuurman’s perspective emphasizes two additional things.

The first concerns the concept of ‘life’ contained in the phrase, ‘Christians are responsible for the service of life’. The Roman Catholic perspective on technology agrees with Schuurman that life does *deserve* to be protected but would add that this applies only to the *metaphysical* significance of life, i.e. its significance within the analogical hierarchy of being... life... knowledge...love. This analogical hierarchy means that ‘being alive’ is more perfect than ‘just being there’, that ‘being gifted with reason’ is more perfect than ‘being alive’ and that ‘being gifted with love’ is more perfect than ‘being gifted with reason’. The reason for this is that ‘life’ — taken only in a scientific/biological (or vitalistic) sense and not in this metaphysical sense (as perfection) — is an utterly ambiguous concept. Schopenhauer’s pessimism is grounded in the notion of a fundamental ontological and malignant ‘zest for life’. On the other

hand, Nietzscheans celebrate 'life' as the 'will to power'. Both are equally right because biology reveals 'life' as a struggle for the maintenance of life and an ongoing battle of one life form against another.

The second Roman Catholic addition is the consequence of the first. The Roman Catholic perspective would contend that the 'garden model' should be considered a normative ideal and not simply a given fact or a descriptive model. The appreciation we owe to nature as creation should not blind us from the fact that nature is a battlefield of conflicting struggles for life. For believers, the beauty of nature may refer to the goodness of God but, behind the façade of that beauty, nature is the arena of endless struggle and suffering for living creatures. The attempt to eliminate all struggle and suffering in the name of perfection may prove to be just as Promethean as our attempts to attain total control.

References

- Caritas in Veritate* (2009) Encyclical Letter of Pope Benedict XVI, English text available at http://www.vatican.va/holy_father/benedict_xvi/encyclicals/documents/hf_ben-xvi_enc_20090629_caritas-in-veritate_en.html
- Collingridge, D. (1980), *The Social Control of Technology*, New York: St. Martin's.
- De Benedictionibus* (1985) (*Rituale Romanum ex decreto Sacrosancti Oecumenici Concilii Vaticani II instauratum auctoritate Iohannis Pauli II promulgatum*), Vatican City. Translations mine.
- Gaudium et Spes* (1965), English text available at http://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_cons_19651207_gaudium-et-spes_en.html

Cleanliness is half of religion: Ecology and responsibility in Islamic history

Ahmed Akgunduz

Abstract

Ecological concern is an integral part of Islamic faith. Every individual creature is a sign of God and, by its very being, manifests and reveals His majesty and mercy. The universe is a vast factory in constant operation that is swept and cleaned by God, its owner. The Ottoman Civil Code (Istanbul 1314) is, as far as we know, the first documented legal code that showed ecological concern. It contained restrictions and rules for the preservation of the environment. Unfortunately, Muslims today often neglect these rules.

Introduction

We can see cooperation and mutual help in the cosmos among creatures that attempt to maintain their existence and, if they are animate, their lives, and to fulfil their functions in the midst of constant change and revolution. For example, the elements hurry to aid animate beings, the clouds to help the vegetable kingdom, the vegetable kingdom to help the animal kingdom and the animal kingdom to help the human kingdom. Milk flows from the breast like the spring of Paradise to nourish the infant. The fact that the needs of animate beings are supplied and that they are sustained in a way that transcends their capacity from unexpected places, the replenishing of the body's cells with particles of food directed by their Sustainer and so used in His merciful hands — all of these and numerous other examples of the truth of cooperation demonstrate the universal and compassionate lordship of the Sustainer of all Worlds, Who administers the cosmos like a palace and garden.

This universal cooperation and mutual help are visible throughout the cosmos. Comprehensive equilibrium and all-embracing preservation prevail with the utmost regularity in all things from the planets to the limbs and bodily particles of animate beings, whose adorning pen ranges over the whole gilded face of the heavens, the decorated face of the earth and the delicate faces of flowers, the order that prevails over all things from the Milky Way and the solar system down to plants such as corn and pomegranates, the assigning of duties to all things from the sun and the moon, the elements and the clouds, down to honeybees. All these great truths testify to, and their testimony forms, the second wing of the testimony offered by the cosmos.

We could say that the cosmos is a divine garden and everything in it has been created to maintain order in this garden. In this chapter, we draw from the Qur'an, Islamic tradition and Islamic codes of conduct to demonstrate that ecological concern is an integral part of Islamic faith.

The Qur'an

The Qur'an has been a source of inspiration, illumination and guidance for Muslim philosophers, theologians, Sufi masters, scientists, jurists and ordinary Muslims who accepted it as their sacred revelation, in addition to other works and different paths of thought that may be found in the Islamic tradition. It could be said that the Qur'an has been regarded by Muslims as a book of law, prayer, wisdom, worship and invocation. In short, it is a unique and comprehensive sacred text that contains whatever pertains essentially to the human condition. For this reason, it is unanimously considered by Muslims and non-Muslims alike to be the most fundamental basis for both the faith of the individual Muslim and what is called Islamic civilization. Muslims naturally believe that the Qur'an can and should continue to play such a role today in our quest for living a meaningful and ethical life. As is clear from the records of history, the Qur'an has played this role in the life of Muslims from the very beginning of revelation by providing a comprehensive, integrated and holistic worldview based on the unity of reality (*tawhid*) (Özdemir 2003: 1).

Few are aware that the Qur'anic verses that describe nature and natural phenomena outnumber those dealing with commandments and sacraments. In fact, of the more than 6,000 verses in the Holy Qur'an, some 750, one eighth of the Book, exhort believers to reflect on nature, to study the relationship between living organisms and their environment, to make the best use of reason and to maintain the balance and proportion God has built into His creation. The earth's resources — land, water, air, minerals, forests — are available for our use but these gifts come from God with certain ethical restraints imposed upon them. We may use them to meet our needs but only in a way that does not upset the ecological balance and does not compromise the ability of future generations to meet their needs.

If we read the Qur'anic verse, "And the earth We have spread wide; and how well have We ordered it" (51:48), we can imagine and believe that the universe is a vast factory in constant operation and the earth a hotel and guesthouse that is continually being used by different people. Generally, factories, hotels and guesthouses that are used in this way become very soiled with filth, debris and rubbish, and dirt accumulates in all parts of them. Unless they are looked after with care and cleaned and swept, they cannot be occupied. Human beings are overwhelmed by the dirt. The factory of the universe and the guesthouse of the earth, however, are entirely pure, clean and spotless, and completely unsoiled, untainted and fresh. There is nothing unnecessary, nothing that is non-beneficial. There is not a random piece of dirt to be found. Even if some is apparently found, it is quickly thrown into a transformation machine and cleaned.

This means that the One Who looks after this factory does so very well. And its Owner is such that He sweeps and cleans and orders the vast factory as though they were small rooms. In relation to the size of this huge factory, no dirt or rubbish is left over at all. Indeed, considering its size, its cleanness and tidiness are remarkable.

That is, this palace of the world and the factory of the universe display the greatest manifestation of the Divine Name of the Most Holy (*Quddus*). Here, it is not only the carnivorous cleaners of the seas and the eagles of the land that obey the commands proceeding from that sacred cleansing but also the cleansing agents that dispose of corpses like worms and ants. As the red and white blood corpuscles flowing in the body obey those sacred commands and clean the body's cells, so breathing purifies and cleans the blood.

And like the stars, elements, minerals and plants obey the command to clean, so all particles and atoms obey it. They achieve cleanliness within the astonishing upheavals of change and transformation. They never congregate anywhere unnecessarily and get in the way. If they themselves do become soiled, they are cleaned quickly. They are impelled by wisdom to acquire the cleanest, neatest and most gleaming states and the most beautiful, pure and subtle forms.

Humankind should obey the command of God and act according to the Divine Name of the Most Holy (*Quddus*) (Nursi 1996: 396-397). To save the environment and to follow the laws of ecology is a religious task for Muslims.

One immediate conclusion, from an environmentalist perspective, is that every individual creature or being's own ontological existence is a sign of God and by its very being manifests and reveals His majesty and mercy. Therefore, every creature deserves attention and consideration because of its relation to the divine. A sincere follower of the Qur'an is always aware of the fact that "Our Lord is He who gave to each (created) thing its form and nature and further gave (it) guidance" (20:50)

There are many *hadith* and other reflections on ecology in Islamic books. In this connection, it might be important just to recall a prophetic attitude that reflects the Qur'anic spirit very clearly and powerfully. Muhammad attached great importance to the moderate use of water and forbade the excessive use of it even for ritual washing, calling such use "detestable" (*makruh*). He prevented people from using too much water even for something like washing when preparing to enter the divine presence for prayer (Akgunduz 2009: 13 ff, Özdemir 2003: 1).

Five basic elements

Islamic faith considers the creation of the universe to be an open book, a guide inviting observation that increases the faith of the observer and leads him to the point of unshakeable faith in the Great Creator of this existence. Islam also holds that all creatures in the universe each have their own lives, their own procreation, their own language and mode of communication, and their own senses, which are particular to each kind of creature. So each glorifies and worships its Lord in its own special way.

Humans should realize that Islam has set restrictions and rules for the preservation of the environment so that it can be protected from the behaviour — and stupidity — of some people who treat it with ignorance and irresponsibility.

First, Water. Some legal principles from the Ottoman Civil Code about the use of water by human beings are:

- 1231. No person may cause the water from a newly constructed room to flow into the house of some other person.
- 1232. The owner of a house that is burdened by a right of sewage may not stop the right of flow, nor may any person who purchases such house do so.
- 1233. The owner of a sewer that runs through the house of another must, if the sewer becomes full or breaks, thereby causing great injury to the owner of the house, remove that injury.
- 1262. Watering means taking one's turn in making use of water to water crops and animals.
- 1263. The right to drink consists of the right to drink water.
- 1264. Any person may make use of air and light and of seas and big lakes.
- 1266. All persons and animals have the right to drink water that has not entered into the possession of any other person.²³

Second, Vegetation. According to the Ottoman Civil Code:

- 1234. Water, grass and fire are free. The public are joint owners of these three things.
- 1235. Water flowing underground is not the absolute property of any person.

²³ *Majallah al-Ahkâm al-Adliyyah* (Istanbul, 1314).

1236. Wells that have not been made by the labour of any particular person, the benefit of which may be enjoyed by the public, are the jointly owned and free property of the public.
1237. Seas and large lakes are free.²⁴

Third, the Earth. One tradition states: “Whoever cultivates a piece of land not belonging to anybody becomes most worthy of owning it.”

1273. If a person cultivates a piece of land and leaves the rest, he becomes the absolute owner of the part he cultivates but not of the remainder. But if he leaves a portion vacant in the middle of the part he has cultivated, that portion becomes his.²⁵

Fourth, the Animals.

Fifth, Air or Atmosphere. There are many legal rules relating to keeping air clean and preventing air pollution:

1198. Any person may raise the wall of his property owned in absolute ownership to any extent he wishes, and may do anything he desires, providing that he does not cause his neighbour any great injury. The latter cannot prevent him from doing so.

1199. Great injury consists of anything that causes damage to a building, that is to say, that weakens it and causes it to collapse or makes it impossible for it to be put to the use for which it was originally intended, as in the case of a dwelling house.

Environmental institutions in the history of Islam

There have been many institutions in Islamic history that have been interested in ecology, either officially or unofficially. The following sections summarize some historical developments regarding ecology in Islam.

Hisbah and muhtesib

Hisbah is an Islamic doctrine about maintaining order according to the laws of Allah. This doctrine is based on the Qur’anic expression, “Enjoin what is good and forbid what is wrong”. It includes the following major aspects: 1) an obligation of a Muslim; 2) an obligation of a state to ensure that its citizens observe the *hisbah* and the *shari’ah* law in particular; 3) in a broader sense, *hisbah* also refers to the supervision of commercial, guild and other secular affairs.

The person in charge of the *hisbah* duty was called a *muhtasib*. Traditionally, a *muhtasib* (*al-Muhtasib*) was appointed by the *caliph* to oversee the order in marketplaces, businesses, medical occupations, the environment, etc. The *muhtasib* was literally a judge (*qadi*) who made decisions on the spot, in any place at any time, as long as he protected the interests of the public. His responsibilities were almost open-ended so that the foregoing principle of enjoining what is good and forbidding what is wrong could be implemented. There were some qualifications and requirements for this job; this position was not open to everyone. As full judge(s), the *muhtasib* and/or his deputies were required to display the high qualifications of being wise, mature, pious, well-poised, sane, free, just, empathic and learned scholars (*faqih*). The *muhtasib* also had to have the ability to ascertain right from wrong and

²⁴ *Majallah al-Ahkām al-Adliyyah*.

²⁵ *Majallah al-Ahkām al-Adliyyah*; *Arazi Qanunnamesi*, dated 1274/1858, *Dustur*, I. Tertib, v. I, pp. 165-70..

the ability to distinguish the permissible (*halal*) from the impermissible (*haram*). Hence, the *muhtasib* was entrusted to secure the common welfare and to eliminate injuries to society as a whole even if this honourable task required him to take a stand against the government in power. In short, the *muhtasib* had to be appointed (fully authorized), pious and just.

In the modern system of public law, *hisbah* is maintained by municipalities and district attorneys, police and public safety organizations, environmental protection units and some financial, commercial, industrial and economic departments of states.

The nature of the *muhtasib*'s tasks was comprehensive. It comprised practically all aspects of society as well as everything in day-to-day life. This was not restricted to fellow human beings but also extended to damage caused by animals. Cases of environmental pollution were not excluded either. The administration of judiciary premises was another area of concern for the *muhtasib* when, for example, a judge's unnecessary anger led to an irrational judgment. Viceroys who acted on behalf of the *caliph* were also accountable to the *muhtasib*. Additional tasks included supervising the application of the law, observing the ban on exports, inspecting the employment of young children, conducting postal duties, providing general health services, keeping the streets and cities clean and other similar public services.²⁶

The first legal code relating to ecology in history

Detailed information on animal rights and the preservation of water, weather and forests can be found in the books of *fiqh*. In the past, Islamic societies exhibited concern for social and ecological issues because this was built into the very fabric of their religion. The Ottomans, for example, engaged in practices of a resoundingly ecological nature. The quintessence of ecology was, of course, expressed in the Qur'an: "Eat, drink, but do not waste" (7:31).

In accordance with the Islamic precept to show compassion and tolerance towards not only human beings but all of God's creatures, the Ottomans saw to it that hungry wolves in the wild were fed carrion. This not only protected villages from being raided but prevented the predator from joining the 'endangered species' list because, in the Islamic view, "every living being is precious." The means for this was a unique institution they called 'the foundation'. Thus, the Ottomans had foundations for the preservation of birds, cats, dogs, wildlife, etc. A delicate ecological sensibility informed all their actions (Bayman 2003: 15-16). In essence, Islamic law, which took the motto, "Cleanliness is half of religion," as the most significant principle of life, set a fine example with respect to the cleanliness and preservation of the environment.

Fatih Sultan Mehmet published a charter on the cleaning process of the Haliç. According to this charter, he forbade farming in Kağıthane and turned the area into a forest to protect the Haliç from pollution. He codified some articles in his *waqfiyyah* on cleaning streets in Istanbul (Akgunduz 2009: 154-159).

In the Ottoman State, cities, townships and villages had special attendants charged with maintaining order and security as well as physical and spiritual cleanliness. These attendants were called *subashi*. Those in villages and towns were called *il subashis* and those in larger cities *shahr subashis*. *Subashi* worked under *qadis*, were partly municipality officers and essentially conducted the work of today's *zabitas* (police) and security officers.

What is quite astonishing is the fact that the Ottoman State, unsatisfied with merely employing special officers for environmental cleanliness and the protection of homes, also

²⁶ *Qanunname* of Tawqii Abdurrahman Pasha, pp. 504ff.; *Taqwim al-Waqayi* (First Ottoman Official Gazette), no. 2 (I. Arrangement); for detailed information see Ergin, *Majallah al-Umur al-Baladiyyah* (A Law Book for Municipal Affairs), v. I, pp. 335-58, 360-61, 934ff., 1414-58, 1459-1507, 1508ff.; Mehmed Galib, '*Ikhtisab Aghalighi*', TOEM, no. 9, pp. 569-84, no. 10, pp. 640-48; Kazıcı 1987: 73-207.

established a regulation concerning the special principles that had to be fulfilled in order to keep the environment clean. This regulation stipulated a garbage collector called *çöplük subaşı*. The first regulation regarding the cleanliness of the environment was prepared 460 years ago in 1539. Below, I will shortly quote one of the two regulations concerning environmental garbage collection.

Because of their simplicity in style, it is, quite evidently, impossible to compare the provisions of ordinances that are quoted directly here below to those of today's legal regulations regarding environmental protection. The times and locations have, after all, changed. All the same, it is quite interesting that there were some provisions in that 460 year old ordinance that can be applied even today. Examples are that the surroundings of houses and shops should be kept clean (Clause 1), that rubbish seen lying around should be cleaned up by those who live in the area (Clause 2), that public places like baths and inns must be kept clean (Clauses 3-4) and that tradesmen must dump the remnants and filthy water from their shops in remote empty areas outside the city (Clauses 6-7). Most importantly, coachman were not allowed to park their carriages in front of houses and shops but rather in special parking lots as modern drivers do with their cars (Clause 10). It is obvious that these articles are valid even today.

Below is a citation from the *Code for Environmental Cleanliness*, which was prepared for the *çöplük subaşı* of Edirne during the reign of Sultan Sulaiman the Lawmaker:

The regulations for the cleanliness of the streets and markets of Edirne²⁷

First and foremost, every person or institution is responsible for keeping the environment clean and they should be checked.

Whoever throws rubbish away in neighbourhoods, streets, bazaars and markets and be identified by the riverhead, those people are to clean up this trash.

The institutions that leave waste water in the vicinity should be checked by the *subashi* and should not allow such to become an obstacle for the people in the street.

The *subashi* must determine who threw the rubbish away. Initially, those closest to the rubbish will be held responsible. If it has been made clear that they are not responsible, they should help in finding the guilty party.

Paint, bleach, blood, waste and other rubbish must not be thrown in the paths of people and should not bother anyone. These things must be disposed of in desolate places.

Institutions that produce and sell food items should take care to clean them.

Animals should not be fed in a public place. If they urgently need to be fed, the owners should move them.

Coachmen are not allowed to park their carriages in places where people may be disturbed and made uncomfortable. If they hitch their animals, they are responsible for cleaning up the animal waste.

The graveyard should also be kept clean and discarded rubbish and dead animals should be removed from it. (Akgündüz 2009: 161-168).

²⁷ Bâyezid Veliyüddin Ef. no. 1970,Vrk. 127/a-128/a. Akgündüz 1993: 540-544.

Conclusion

It should be apparent that nature has been entrusted to us because we are God's vicegerents on earth. We are not the lords of nature and the world. The world is not our property. It is not at our disposal and is not to be used haphazardly and irresponsibly. On the contrary, nature was created by and belongs to God. What is important, in the Qur'anic context, is that we are responsible and accountable for our actions here on earth. This means that we are accountable for all that we do, be it good or bad. All things were created by God, are maintained by Him and will return to Him. However, the point of particular interest for humankind is that humans will also return to God and are accountable to Him and Him alone.²⁸ Ecological concerns exist in the main Islamic texts and legal codes but Muslims today neglect these rules. In order to protect the environment, Muslims should refer first to their religious rules. Imams, spiritual leaders and Muslim politicians should focus on reviving Islamic principles regarding ecology and should cooperate with national and international organizations.

References

- Akgündüz, A. (1993) *Osmanlı Kanunnameleri ve Hukukî Tahlilleri*, v. 6, İstanbul, pp. 540-44.
Akgündüz, A. (2009), *İslam ve Osmanlı Çevre Hukuku*, İstanbul: OSAV.
Bayman, H. (2003) *The Secret of Islam: Love and Law in the Religion of Ethics*, Berkeley: North Atlantic.
Kazıcı, Z., (1987) *Osmanlılarda İhtisab Muessesesi*, İstanbul.
Nursi, B.S. (1996) The Thirtieth Flash, The Divine Name Of Most Holy, in *The Flashes*, İstanbul: Sözler, pp. 396-398.
Özdemir, İ. (2003), *Towards an Understanding of Environmental Ethics from a Qur'anic Perspective*, available at <http://www.ibrahimozdemir.com/Makaleler/EnvironmentalEthics.pdf>

²⁸ Akgunduz, *Çevre Hukuku*, pp. 13ff; Özdemir, *Towards an Understanding of Environmental Ethics from a Qur'anic Perspective*.

غایب اولمور زوجه ای خدیو معمر ایضا
 استانبول ویرسه ووزنه وکوت ووزنه ووزنه
 قاضیلرینه اناطولی وروم ایلی وقرمان بکل یکیلرین برکم
 یازمکه خالیا مالک محروسین سیاه طایفه سند و تاز
 رعایان بعضی کس لر انوک کیم غایب اولوبه سوز حقیقت
 احوالی معلوم اولمایدین شایقی قاضیلر ای انوک زواج
 نفقه بر مختلجه حیو جلد و تلبیس ایوب بوره ناله
 شکوه لوفی تغیری ایدو باشک وکاح اندک لری پایه سریر
 صبر بر عین اولمغنی مالک محروسین عین جلد شایقی
 اولمسن رفیع ایتمه بیور ورم کیم شریف الی انعام
 واریجان تلخیص و تراجمی تیسرین تحت حکم شکر جلوان
 میوا صعدن بوازم جها نطایفی عموما خلفه مر زمانه بوازم
 جلیل القدم مقتضای حجه علی المیه بن وکر الیفیل
 منصب اولغیش شایقی قاضیلر واریسده ورم محلدن ایسه
 کیدرد و بایر شریفه مخالفین اولتمقدن زیاد احتیاط
 و احتراز المیه بن ۲۶ د ۹۲۲
 استانبول محلد و سوت قمر و عیال و بویز و بویز و بویز
 نقان هما بون یا زیل شمد کمال دارالطفا العلیه
 و الخلافه سینه عیال و سوت قمر و عیال و بویز و بویز
 و بایر شرف و سوت قمر و عیال و بویز و بویز
 انوک مثال چمال و واقع نوقسم رفیع تر خند مال

عمرک مضطرب کدلر لکن اعتماد اولغاغین بلذع مزبور
 سوا شایقی قاضین ایوهنا شویبا قاضیه ایوبی مزبور
 و سیر مکجه چاغز ووت ویناق ایدین بعد هیچ
 حد او بود لری و کاتر شایقی طوبی سیریه
 و انوک مثال کس نسبه واقع اولمیه اولور کیدر لری
 سوا شایقی بویا کال اهتمام اوزره اولوب چارغوز
 و محل لرد و کان مزبله لری کیمک وینه و لری سینه
 اولورسه انوک دکی معلوم اولغاغین بایر ایدر و بویز
 و بویز ایسه ایدین بوی و بویز انوک شایقی کال اولور
 سیر ایلر مزبله لری کال بایر سیریه چاغز و بویز
 ایلد وزه و حمالرک چرکای بویز مزبله لری طوقش
 اولر کمالش وینه و لری سینه و حرمه بقین اولورسه
 ایدر وزه لری بویز ایدر و بویز ایسه ایدین بوی و بویز
 ایدر وزه و چرکاب بوی ووزنه قد مکاه یا دینه بویز
 شهر سوا شایقی اثا بوی با بوی معاون اولر و بویز
 و کان لری بویز قانلر بویز بویز طریقه عامه و کمال
 منع ایدو شایقی و خلوت بر لره ایلد وزه و بویز
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 و خلوت بر لره ایلد وزه و بویز و بویز و بویز
 غلبه کاتر علقه لری بویز و بویز و بویز و بویز

Heavenly guidance for earthly problems: A vision of a transformation from the machine to the garden model

Abdul Majid and Fazli Karim

Abstract

Religion may enable us to have a more respectful relationship with nature. From an Islamic point of view, nature is not a lifeless reality but rather full of signs of God, the Creator and Sustainer of life. The metaphor of the garden therefore fits perfectly in not only a Christian but also an Islamic worldview. Nature is a sacred trust given to mankind. As vicegerent, man may rule over the world but with prudence and with the knowledge that God is the owner of the world and that everything belongs to Him.

Introduction

Mother Earth is moving speedily towards ecological disaster. Man is destroying and depleting earth's resources at an alarming speed. It can no longer sustain the rate of man's lavish use of its limited resources. Man's relationship with the rest of creation is ruthless. The careless behaviour of human beings has resulted in air, water and soil pollution as well as deforestation, soil erosion, loss of biodiversity, climate change, global warming and rising sea levels. If this self-destructive process is not remedied effectively, the succeeding generations of living beings will inherit an unliveable earth.

A number of responses to the growing ecological crisis have been proposed. Experts from various fields of natural and social sciences are currently offering different perspectives that may provide an adequate response to the crisis. The diverse responses proposed are important because they address various aspects of the crisis. In fact, experts from various disciplines must play their role in protecting the earth's ecosystem as the very survival of all creatures is dependant upon it.

Whether one perceives nature as something that has been created by God or as a self-originating entity impacts one's attitude towards nature. If nature is understood as something that has been created only to serve human beings and as something lifeless, exploitation without limitations is the obvious outcome. In contrast, if nature is understood as having its own value and as being full of diverse and beautiful life that all glorify its Creator, then it may command respect and judicious use. Now is the time to change our perception of nature (Abraham 2001).

Spirituality needs to be called upon to lend a helping hand in the mitigation of our current grave situation. Some scholars like Lynn White Jr. blame religion for the ecological crisis. White argues that, according to the Bible, man is greater than nature and has thus been commanded the right to exercise dominion over the rest of the earth (White 1967). As such, religion is responsible for developing this destructive tendency in man. It can be argued, however, that it is not religious influence but rather the lack of it that has led man to destroy the earth's ecosystem. The banishment of God by modern secularism has made it possible for rationalism, humanism and scientism to rush in and fill the void (Haught 1995: 187). Runaway greed, industrialism, individualism, nationalism, belief in unlimited economic progress,

massive poverty caused by the unjust distribution of wealth, militarism, consumerism, overpopulation and gross materialism are more likely to be the real causes of the current ecological crisis (Haught 1995: 188).

Some people blame science for the present state of affairs but the scientific approach to the world is not inherently and inevitably tied to the premises of materialism, pessimism and the secular myth of progress. It is the conflation of science with ideologies and beliefs that has led to our exploitation of the earth. Perhaps the most important of these assumptions is that the earth has enough resources to fuel our secular obsession with limitless economic growth. The secular myth of economic progress, together with some aspects of religious messianism, has corralled and exploited scientific expertise and technology, and produced a climate that is inherently inimical to the earth's own well-being. Also, it is not science but scientific materialism — a belief system built on the assumption that all reality including life and mind is reducible to and completely explainable in terms of lifeless matter — that is at the core of our ecological crisis (Haught 1995: 33). If everything is destined for 'absolute nothingness', can we truly treasure it? And given that materialism views the universe as ultimately a "final wreck and tragedy", how can such a philosophy ever motivate us to care for and value the earth's beautiful treasures? (Haught 1995: 188)

One must agree with Dr. Egbert Schuurman when he says that the current situation requires a shift in cultural paradigm. In the old cultural paradigm, nature is seen as lifeless and, given that framework, is exploited by unbridled manipulation. Until recently, nature, man, the environment, plants and animals were viewed from a technical perspective — the so-called 'machine model'. Now the prevailing perspective in cultural formation will have to be the protection of life. Science and technology, as well as economics, should no longer destroy life in all its multiplicity and rich variety of shapes and forms but rather stand in the service of it. When that is done, technology and economics will be better able to answer to their intrinsic meaningfulness. The 'garden model' fits perfectly within both the Christian and the Islamic paradigm. Both seem to concur with the confession, "We love all creation because of the Creator." Christian and Islamic culture, each in its own way, can contribute to a globalizing culture in which life is not threatened but rather enriched, and in which greater justice and righteousness is done to ease tensions (Schuurman 2008).

In this paper, we will outline Islamic teachings and inferences that favour the garden model and show how they address the current issue of ecological crisis.

Nature as God's creation

The Islamic perspective posits that there is a definite relationship between God and His creation. The doctrine of *Tawhid* — the belief in the oneness of God — is a cornerstone of the Islamic faith. It recognizes the fact that there is one absolute Creator of the whole cosmos and that man is accountable to Him for his actions. The Holy Qur'an says: "To God belongs all that is in the heavens and in the earth, for God encompasses everything." (4:126) Therefore, abusing one of His creations, whether it is a living being or a natural resource, is a grave sin. *Tawhid* also affirms the wholeness and holiness of the creation and thus brings value to creation.

According to the Qur'an, "inhabitants of the heavens and the earth — animals, plants, hills, the sun, the moon, the stars and the great number among mankind — praise Allah" (22:18). There is "nothing but celebrates His praises" (17:44). Thus, the whole of creation is regarded as alive. "To destroy any species or, for that matter, creatures in general without reason condoned by God is to destroy voices that reach God in hymning His praise" (Nasr & Iqbal 2007: 133). Creation should thus perfectly obey the will of God and behave in accordance with the laws established by Him. However, today, the materialist and secularist perspectives

treat nature as a dead object meant to serve human beings. Such an attitude justifies the exploitation and domination of nature.

Nature as full of signs of God

According to the Qur'an, the world is full of signs (*ayah*) of God. The creation of the heavens and earth, phenomena of nature, and plants and animals are all considered the *ayat* (2:164). The Qur'anic word *ayah* means a sign or a mark by which a person or thing is known or can be perceived. This word is used about four hundred times in the Qur'an. In fact, every creature is referred to as *ayah* of God (Murata & Chittick 1994: 52). The meaning of *ayat* is relevant here because, if nature with all its creatures is *ayah* of God, then those who perceive it perceive God. The Qur'an also says that "all things have their origin by the command of God: Be (*kun*)" (36:82). God's commands are the expression of His will, plan and intention and so it is part of His being. This implies that creation originated not by accident but through the definite will of God who never created anything in vain or for "play" but who created everything with a serious purpose (*haqq*) (44:38). A famous tradition of the prophet Muhammad (blessings of God be upon him) also affirms this fact in which God says, "I was a hidden treasure but was not known. Loved to be known, I created the creatures that I be known to them" (Nasr 1987: 345). This clearly attributes value and importance to all forms of creation and negates the superiority or importance of one species over another.

God as the real environment

The Holy Qur'an begins with the verse, "All praise be to God, the Sustainer of all the worlds." (1:1) The Sustainer of all the worlds may be read as the Sustainer of all the environments. The Sustainer of all the worlds embraces and encompasses all environments. The Qur'an describes this truth as follows: "To God belong the East and the West; wherever you turn, there is God's countenance. For God is All-Embracing, All-Knowing." (2:115)

God's one beautiful name is *Muhit*, which means all encompassing, all pervading and that which surrounds all (Ouis 1998: 163). This word is also used in Arabic to denote 'environment'. Clearly, in an even deeper sense, the Islamic perspective claims that God Himself is the ultimate environment which surrounds and encompasses man. Seyyed H. Nasr believes:

The environmental crisis may in fact be said to have been caused by man's refusal to see God as the real 'environment' which surrounds man and nourishes his life. The destruction of the environment is the result of modern man's attempt to view the natural environment as an ontologically independent order of reality, divorced from the Divine Environment without whose liberating grace it becomes stifled and dies. To remember God as *al-Muhit* is to remain aware of the sacred quality of nature, the reality of natural phenomena as signs (*ayat*) of God and the presence of the natural environment as an ambience permeated by the Divine Presence of the Reality which alone is the ultimate 'environment' from which we issue and to which we return (Nasr 2001: 131).

Human beings as vicegerents of God

In the Qur'an, man is given the title vicegerent (*khalifa*) of God, not in the sense that he replaces God. He is vicegerent because God subjected everything to him and gave him free will, knowledge and the power to choose. These gifts make human beings responsible for other creatures. This power and responsibility of human beings is termed vicegerency on behalf of God and implies the prudent use of things, not their exploitation. As *khalifa*, human beings are not proprietors or owners of creation; God is the owner and everything belongs to Him. Human beings are God's vicegerents and God's servants. Human beings should use their authority as *khalifa* within the limit of their role as servant of God: "Nothing is more dangerous for the natural environment than the practice of the power of vicegerency by a humanity which no longer accepts to be God's servant, obedient to His commands and laws" (Nasr 1997: 22). As such, human vicegerency needs to be interpreted in relation to the sovereignty of God, not independently. Seyyed H. Nasr rightly observes:

It means the dominion over things which man is allowed to exercise only on the condition that it be according to God's laws and precisely he is God's vicegerent on earth. If we do not fulfill that function, then we are not God's vicegerent on earth; rather we are trying ourselves to take the place of God. Having forgotten their vicegerency, today men are trying to act as gods, and they will be punished in the most severe way for this sin...however powerful we may appear to be as we try to destroy nature, nature will have the final say. Nature has direct contact with God; it is not responsible for us or to us. It is we who are responsible for its protection... "We are not our own man", as the American would say; we are God's man. And in the same way that God makes the sun rise and set every day, we must try to preserve the harmony of nature instead of destroying it (Nasr 2007: 147-148).

Nature as a sacred trust demands a responsible attitude

In the Qur'anic view, nature is an estate belonging to Allah that has been given to man merely as a trust (*amanah*). Nature thus constitutes a testing ground for man's morality. Whatever right man possesses to have dominion over nature is solely due to his make-up and solidly derived from God's trust in His deputy and vicegerent on earth (Muinul Islam 2004). It recognizes the fact that there is one absolute Creator and that man is responsible to Him for all his actions. The Prophet Muhammad (peace and blessing be upon him) considered all of God's creations to be equal before God, and he granted rights not only to animals but also to the land, forests and water courses (Nomani & Sulaiman Nadvi 1989:162).

The Qur'an further commands us to "eat and drink but waste not by excess, for God loves not the wasteful" (7:31). And do not waste (God's bounties) as "verily, He does not love the wasteful!" (6:141). God also says in the Qur'an: "We cause pure water to descend from the skies" (25:48).

God's Messenger (peace be upon him) attached great importance to water and forbade the excessive use of it even when taking the ablutions: "Even if you take the ablutions in a flowing river, do not waste the water" (Ibni Maja Allama 1989: 34) The Prophet (peace be upon him) also forbade polluting moving or stagnant bodies of water by urinating or bathing in them (Sulaman Ibni Ashhas 1919: 11, 20) or by throwing faeces or other types of dirt in them. From this, by analogy, one can infer that putting sewage and factory outpours containing fatal, toxic chemicals and/or other hazardous elements in fresh or marine water should be forbidden because the harm is greater than the benefit to the individual.

As a whole, Islam considers nature and natural resources including plants, animals and all living things as trust and signs of God. This is evident in the sayings and practice of the Holy Prophet. The Prophet Muhammad emphatically instructed Muslims to spare and protect trees, crops, vegetation and animals even in the frenzy of war (Rehman 1999: 28). Highlighting

the importance of planting trees, he said: “Even if one sees the Hour coming, he should plant the sapling which is in his hand” (Mahmud Ibni Ahmad Aene, vol. 2, 219)

On migrating to Medina, God’s Messenger (peace and blessings be upon him) organized the planting of trees and date groves. He made the forests and green spaces conservation areas where different living creatures could live. These were called sanctuaries (*hima*). For example, a strip of land approximately twelve miles wide around Medina was proclaimed a sanctuary and made a conservation area. We know that he declared many other areas sanctuaries as well (Muinil Islam 2004: 74).

Conclusions

To summarize, God made the garden of the earth an exhibition of His art, a gathering of His creatures, a place of manifestation of His power, the means of His wisdom, the flowerbed of His mercy, the tillage of Paradise, a place of passage of creatures, for the flood of beings, a funnel for His artefacts (Ozdemir 2002).

We may describe the earth as a garden having all types of bounties, diversity of life, flora and fauna, and a balanced global ecosystem. God is the Supreme Creator and the Owner of that garden and man can be taken, by analogy, as the gardener and guardian. The Creator’s supreme attribute is being merciful and He has commanded his gardener and vicegerent to be merciful to the rest of creation. Unfortunately, the guardian has turned into a robber and is robbing the earth not only of its beauty but also of the very resources that sustain all forms of life.

Especially with the so called ‘march of progress’ from agrarian to industrial and post-industrial society, man has proved himself negligent of, and arrogant and reckless towards, the natural garden. Not surprisingly, the garden is now on the verge of devastation and degradation into wasteland. The Creator of nature warns:

Corruption has appeared on land and in the seas, an outcome of people’s misdeeds; and so He let them taste (evil of) some of their deeds, so that they might return. (Al-Qur’an, 30: 41)

As the Creator is merciful and His mercy takes precedence over His wrath, the negative consequences of some of our deeds are not His wrath but rather manifestations of His cosmic mercy as they will enable humans to return and desist from corrupting and polluting the earth — the natural garden — before a point of no return is reached. We must listen to the call of the Creator of the worlds and the sole Sustainer of the cosmic order if we are to continue our sojourn on the earth. The choice is ours. The leading philosopher Jacques Ellul put this succinctly:

Despite the choices still possible and the options still available, despite the path still open to be taken, despite all the warnings of the prophets and sentries, despite the outcries of the poets and the weak, this blindness is now leading men to will... their own destruction (Ellul 1978: 195).

This is the eleventh hour in the context of environmental pollution which is actually “the externalization of the pollution within us,” as Theodore Roszak (1989) aptly puts it.

We all, from the East, the West, the North and the South, from all disciplines and from all races and religions, must now focus on the global environmental crisis within and without before our beautiful ecological system collapses.

The Almighty Merciful Creator shows us the path of deliverance in existing perilous and dreadful conditions. According to the Qur’an, the following promise was made to Adam

and Eve and, by implication, to their progeny when they were commanded to go down from the heavenly garden to the earthly garden:

Get ye down all together; and if, as is sure, there comes to you Guidance from Me, whosoever follows My Guidance, on them shall be no fear, nor shall they grieve (2:38).

References

- Abraham, J. (2001) An Ecological Reading of the Qur'anic Understanding of Creation, *Bangalore Theological Forum* 33 (1), available at <http://www.religion-online.org/showarticle.asp?title=1632>
- Ellul, J. (1978) *Betrayal of the West*, New York: Seabury.
- Haught, J.F. (1995) *Science and Religion. From Conflict to Conversation*, New York: Paulist.
- Ibni Maja Allama (1989) *Sunani Ibni Maja*, Lahore: Makta Meezan.
- Mahmud Ibni Ahmad Aene (1950) *Umdatul Qari*, Quetta: Maktaba Rashidia.
- Muinul Islam, M. (2004) Towards a green Earth. An Islamic perspective, *Asian Affairs*, 26 (4): 44-89.
- Murata S. & Chittick, W.C. (1994) *The Vision of Islam*, New York: Daragon Home.
- Nasr, S.H. (1987) *Science and Civilization in Islam*, Lahore: Suhail Academy.
- Nasr, S.H. (1997) Islam and the environmental crisis, in A.R. Agwan (ed.) *Islam and the environment*, New Delhi: Qazi.
- Nasr, S.H. (2001) Sacred Science and the Environmental Crisis: An Islamic Perspective, in S.H. Nasr *The Need for a Sacred Science*, Lahore: Suhail Academy.
- Nasr, S.H. & Iqbal, M. (2007) *Islam, Science, Muslims and Technology*, Kuala Lumpur: Islamic Book; Trust & Sherwood Park: Al-Qalam.
- Nomani, S. & Nadvi, S.S. (1989) *Seeratun Nabi*, Lahore: Maktaba Madania, vol.6.
- Ouis S.P. (1998) Islamic Ecotheology Based on the Qur'an, *Islamic Studies* 37 (2): 151-181.
- Ozdemir, I. (2002) *An Islamic Approach to the Environment*, available at <http://www.crescentlife.com/spirituality/>
- Rehman, A. (1999) *The Peace*, Muscat, Oman: Batna.
- Roszak, T. (1989) *Where the Wasteland ends. Politics, and Transcendence in postindustrial Society*, Berkeley: Celestial Arts.
- Schuurman, E. (2008) The Challenge of Islam's Critique of Technology, valedictory address, Wageningen University, September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>
- Sulaman Ibni Ashhas, S. (1919) *Sunani Abu Dawud*, Multan: Maktaba Imdadia.
- White, L. Jr. (1967) The Historical Roots of Our Ecological Crisis, *Science*, 155 (3767), 1203-1207.

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Human nature versus the nature of science and technology: The need for humane science and technology

Necati Aydin

Abstract

Even though we owe gratitude to the Enlightenment for modern science and technology, we cannot deny the fact that the children of the Enlightenment are on the verge of destroying the earth and its inhabitants. This paper discusses the dark side of the Enlightenment Project — a project that has shaped the nature of modern science and technology. It deals with the Enlightenment Project's shortcomings regarding human nature and then offers a new theory from an Islamic perspective that can enlighten the dark side and yield more humane science and technology. If taken into consideration, this new theory may help us to build a more humane market, a more humane government and more humane technology.

Introduction

There is no doubt that we owe gratitude to the Enlightenment²⁹ for modern technological devices such as computers, televisions, telephones, etc. Such technological devices are products of the mind and the mind was released by the Enlightenment from the oppression exercised by the churches in the Dark Ages. However, we cannot deny the fact that the children of the Enlightenment are on the verge of destroying nature and all its inhabitants including human beings. This paper discusses the dark side of the Enlightenment Project — a project that has shaped the nature of modern science and technology. It deals with its shortcomings regarding human nature and then offers a new theory from an Islamic perspective that can enlighten Enlightenment's dark side and yield more humane science and technology.

The dark side of the enlightenment

Although the Enlightenment Project is thought to have freed our minds from the oppression exercised by the churches in the Dark Ages, this freedom was not a freedom to see the Divine light but rather to avoid it. Indeed, the Enlightenment is marked by a rejection of the infinite Divine light in favour of the finite light of the human mind. In many ways, this is much like relying on the light of a firefly instead of the light offered by the sun.

The Enlightenment is an alienation project. Although we have successfully reached the moon and we have learned about the far edges of the universe, we have forgotten who we are and why we are here. We view everything and everyone as rivals rather than as siblings.

²⁹ Editors' note: The author originally wrote the term 'Enlightenment' within single quotation marks to indicate that, in his view, this cultural movement did not really bring about light (see text for further explanation). For the sake of consistency in style, we have removed the quotation marks.

The Enlightenment is an animalization project. It focuses on the animal side but ignores the spiritual side of mankind (Nasr 2007). It serves the animal spirit while killing the human spirit. It offers a lifestyle not much different from that of an animal's life.

The Enlightenment is a secular trinity project that rejects the Trinitarian theology in favour of the gods of secular science. The Enlightenment finds it to be irrational to embrace the Father, the Son and the Holy Spirit. It replaces them with the gods of nature (the Mother), with cause-and-effect (the Son) and with chance (the Holy Spirit). It ascribes everything to these gods. The mechanistic worldview is the by-product of this secular trinity.

The Enlightenment is a reductionist project that compartmentalizes the universe and divides it among the gods of secular science. It explains each compartment as the product of causes, nature or chance through reductionist reasoning (Mermer 2007). It reduces everything to small fragments and ascribes them to material causes. It ignores the indivisibility and interdependency of everything in the universe. In Schuurman's terms, "the Enlightenment represents the religion of the closed material world that is blind to the non-material dimensions of reality." (Schuurman 2008: 75)

The Enlightenment is a human-god project that makes people believe in themSELVES instead of in god(s). It turns the self into a kind of 'inner god'. It promotes self-belief, self-help, self-actualization, self-motivation, self-confidence and self-sufficiency. It boosts the self by ascribing accomplishments to the self. It pits the 'inner god' of self against the 'outer gods' of nature, causation and chance. It teaches us that the inner god can conquer and master the universe by defeating, controlling or stealing from the outer gods.

These dark sides of the Enlightenment project have resulted in many paradoxes, frequently called the 'progress paradox' (Easterbrook 2003) or the 'American paradox' (Myers 2000). Perhaps, it would be better to call it the 'Enlightenment paradox'. The paradox is such that we have produced and consumed more but enjoyed less (Kasser 2002). We have multiplied our material possessions but lost our spiritual dimension. We have learned how to make a great living but forgotten how to live a great life. We have built bigger houses but destroyed bigger families. We have gained more knowledge but are left with less truth. We have discovered the far edges of the outer universe but dismissed the inner universe. We have found our way to the moon but lost our way to our neighbours.

A new theory of human nature

One of the Enlightenment's shortcomings is its emphasis on the external (physical) world at a cost to the internal (spiritual) world. Yet, each human being is like a universe. Therefore, studying the universe within is as important as studying the outer universe. Indeed, it is impossible to make sense of the outer universe when we do not understand or know our inner universe.

Human nature, in my view, reflects the universal elements of humanity. Whether we believe that this is shaped by God, nature or society is irrelevant. We still have similar biological needs even if the types of food we like vary from culture to culture. We also have common sensual, emotional, intellectual and spiritual needs. For instance, we have the capability to love and the desire to be loved even though the objects of love may differ across cultures.

Since the Greeks, there have always been explorations of the inner universe, both in the East and in the West. In the twentieth century, Carl Jung (1980) defined the collective unconscious of humanity through what he called archetypes. That collective humanity is like a large ocean that connects the individual islands of human society. The key elements of human nature

presented here are both similar to and different from Jung's archetypes. Perhaps, they could be considered the source of some of the archetypes.

Inspired largely by the writings of a Turkish scholar, Bediuzzaman Said Nursi, I want to present a new theory of human nature, namely a 'Grand Theory of Inner Universe' (GTIU), using palace and resident metaphors. Comparing the human body to a palace, the theory assumes that human nature consists of the following key residents: king, judge, elephant, wise advisor, good advisor, bad advisor and guard.

King

Metaphorically speaking, the spiritual heart is like the king in the human palace. The king has an almost infinite capability to love. He needs lover(s) with beauty, perfection and generosity because of the nature of love. He uses love to make attachments in his search for the true lover. In this regard, life is merely a journey of making attachments to satisfy the king.

In Nursi's view, the only way to satisfy the king is to find God who is *Al-Wadud*, the source and worthy of infinite love (Nursi, 32nd Word). In Qur'anic terms, "it is in the remembrance of and whole-hearted devotion to God that the hearts find rest and contentment" (13:28). The king can find the essential qualities of love in God, and when he does, he will love everything in His name as the mirror of His beauty and perfection. Thus, love for everything is part of God's love. On the contrary, the Enlightenment detaches the heart from *Al-Wadud* and instead offers alternative objects of love with limited beauty and perfection. It cannot prevent the pain that results from the inevitable detachment from these lovers. Therefore, it fails to satisfy the human heart.

Judge

Conscience, thus the ability to distinguish right from wrong, is like a judge in the palace who passes judgments on our decisions. If we treat someone unfairly or do bad things, he makes us feel guilty. He is also affected by unfairness and injustice in society. He makes us feel inner peace and pleasure when we treat others fairly and live with trustworthy people.

The judge also longs for eternity. Indeed, nothing other than eternity could satisfy him (Nursi, 29th Word). The desire for and efforts towards longevity are clear evidence of that. Therefore, the judge can only be satisfied through God who can provide eternity and promise ultimate justice. If a person "does not rely on the Omnipotent One of Glory, place his trust in Him and confidently submit to Him, his conscience will always be troubled" (Nursi, 6th Words).

Elephant

The animal spirit is like an elephant in the palace. In Islamic literature, it is known as *nafs*. I prefer to call it elephant because of its similarities to the concept used by Jonathan Haidt who argues that we have a divided self consisting of a rider and an elephant. The rider is the reasoning mind and the elephant is the self-capability to receive pleasure and pain. In Haidt's terms, "the rider is an advisor, or servant, not a king, president or charioteer with a firm grip on the reins" (Haidt 2005: 17).

In Nursi's view (13th Word), the elephant is addicted to pleasure. He pursues instant gratification. He thus prefers a little pleasure now to a lot of pleasure later. He is blind to the

future. He wants to gain pleasure and avoid pain now. He has a greedy nature and thus always asks for more. Indeed, there is no way to fully satisfy him. Because of the 'adaptation principle', the elephant is always seeking new and different gratifications. He does not want to be restricted in any way. If left alone, he goes completely mad and consumes anything for the sake of instant gratification.

People sometimes knowingly make irrational choices. According to Nursi, this happens when the elephant takes the control of the palace (23rd Word). In such cases, the elephant becomes the master and subsequently employs everyone for his own pleasure. However, because the elephant, in this mode, is willing to consume everything to gain pleasure, it is imperative that he be restrained. Indeed, this is one of the key purposes of the Divine revelation. In Nursi's view, the elephant should seek pleasure within the Divine limit. In other words, he should continue to seek pleasure as long as it is not destructive to the other residents of the inner and outer universes.

Wise advisor

The mind is like the wise advisor to the ruler of the palace. If the elephant is in power, the advisor will serve him by providing guidance on the available choices for pleasure. He also advises the king and judge. However, if he is too busy helping the elephant, he might not find time to serve others. The advisor asks some enduring questions and enjoys learning their answers. He is capable of making rational decisions for other residents. However, he has no power to endorse them. He might be silenced if the elephant is too strong.

In Nursi's view, the mind can only find satisfactory answers to its enduring questions through the belief in God and the hereafter. In the absence of these beliefs, the advisor will become a means of torture to its owner (Nursi, 6th Words) by seeing life on this planet as an inevitable death row for everyone. However, when illuminated by the Divine light, the advisor can be a precious key that can unlock the mystery of creation. He can help his owner understand the names and attributes of God. He can be a source of great intellectual pleasure, providing opportunities to read the book of the inner and outer universes.

Good and Bad Advisors

In Nursi's view, the human palace hosts both good and bad advisors. The good advisor is an angel. She is like a good friend who always provides good advice. The bad advisor is Satan who always provides bad advice (Nursi, 13th Flash). However, neither the good advisor nor the bad advisor has the necessary power to control the palace directly. They can only advise key residents. For that matter, we are neither an angel nor Satan. If we listen to the good advisor, we can be as good as angels, and if we listen to the bad advisor, we can be the most dangerous creatures on earth. Nursi argues that the elephant is quite vulnerable to suggestions from the bad advisor. We thus need Divine guidance to increase our awareness of these suggestions. We have to be alert to these inner voices and know how to keep them under control.

Guard

The ego or self is like the guard or commander of the palace who protects the palace from intruders and is aware of the palace's possessions. He directs the residents of the palace to serve the elephant and/or king. He enjoys working for the elephant because of the recognition he

receives from the elephant's activities. As shown in Figure 1 below, if the guard studies under the Divine light and guidance, he can become the reference point for knowing everything including other beings and God.

<Insert Figure 1 here>

The guard determines our relationship with the inner and outer universes. There are four types of relationships the guard seeks to develop (30th Word). First, he attempts to understand himself/herself. Second, he endeavours to understand the universe by making himself a reference point. Third, he seeks to understand other selves. Fourth, he tries to know and understand God if he believes in Him. It is important to know that the guard has both a good and a bad side. The good side reflects his ability to be a reference point for understanding the outer universe and for protecting his possessions. The bad side comes out when the guard gains too much power in the palace. When that happens, the guard acts like a dictator and tries to control other people and nature.

Human potential and humane science

The main error of the Enlightenment stems from its understanding of human nature. In our efforts to correct this mistake, we need to start with ourselves. We need to discover our inner universe. Only then will we understand that we are not self-sufficient but rather contingent. We will realize that we need to rely on the Divine power and mercy at every moment. In Nursi's view (23rd Word), our life depends on the entire universe. Our desires are as big as our imagination. However, we have absolutely no power to fulfil our needs and desires. We are like a completely paralyzed person. It is the Divine power and mercy that provides everything for us. Therefore, we should abandon arrogance and become truly humble and thankful. We should give up serving our own desires and ego, and become a true servant of God.

A person who understands his innate weaknesses does not claim to be master over other beings. Rather, he is humble and lives in harmony with everything. He does not claim ownership over anything. He understands that nothing, not even his body, is his own. Everything belongs to the Master of the universe (Nursi, 20th Letter). As such, he is only able to use them responsibly with the permission of the real Owner. His acts are recorded and he will be held accountable on Judgment Day: "And so, whoever does an atom's weight of good will see it; and whoever does an atom's weight of evil will see it." (Qur'an, 98:7-8) As shown in Figure 2 below, the Enlightenment empowers the self and turns it into a god while religion weakens him and turns the self into a servant of God.

<Insert Figure 2 here>

In short, the purpose of life is not to boost the ego and turn the self into an inner god or to serve the elephant by becoming his slave. Rather, the purpose of life is to understand our nature embedded with infinite impotence and poverty, and act accordingly. It is to disclose our almost infinite potential by relying on the Divine power and mercy through understanding our true nature. In other words, the purpose is to be *insan-i kamil* (perfect human), disclosing our potential as much as we can.

Science, technology and religion

There cannot be a dichotomy between true science and authentic revelation. Indeed, our nature is such that we examine the universe. We endeavour to understand how everything works and why. Science has the ability to reveal the mysteries of the universe and explains how they work. Even though atheist scientists deny the existence of God, their real scientific work does reveal evidence that God does indeed exist. Secular scientists make the invisible chapters of the book of the universe visible but claim them to be meaningless scripts because they do not know how to read them. As Richard Feynman (1965: 7) says, scientists “cannot make the mystery go away by explaining how it works.” They “will just tell you how it works.” In Nursi’s view, the Divine revelation solves the mystery.

In essence, the universe is a comprehensible book that makes its author known (Nursi, 13th Word). Divine books such as the Qur’an come from the infinite knowledge of God while the book of the universe comes from the infinite power of God. Both offer similar and mutually reinforcing messages. Authentic revelation can only be found in the words of God, and true science is nothing but a description of the works of God. Reading the book of the universe under the light of Divine revelation enables us to know the mind of God. As shown in Figure 3 below, Islam removes the veil of causation, chance and nature, and presents scientific facts as signs (*ayat*) of God.

<Insert Figure 3 here>

Indeed, the Qur’an encourages the human mind to study the book of the universe in several hundred verses. It calls our attention to the Divine acts in creatures and natural events. If we study the universe under the guidance of the Divine light, we will see that everything is directly created and maintained by the Divine power. In other words, God is not the *first* cause; he is the *only* cause. He does not need to use any means, not even the chain of cause-and-effect or nature. He runs everything directly: “So, All-Glorified is He in Whose Hand is the absolute dominion of all things.” (Qur’an, 36:83) His wisdom requires apparent causes as a veil to His power. He is not the god of gaps. He is the god of everything. Indeed, there is no gap for anything else. In Nursi’s view, the story of Adam (*pbuh*) in the Qur’an shows that we can even go beyond the ranks of angels if we study the inner and outer universes and thereby disclose our potential and learn the reality of everything.

The Qur’an is not against humane technology. Rather, it encourages the search for such technology. In Nursi’s view (20th Word), the miracles of the Prophets mentioned in the Qur’an provide vision and set the highest targets for scientific and technological advancements. The Qur’an is against distorted science and destructive technology — not just weapons of mass destruction but also the products of mass consumption that threaten the future of all living beings on this planet. While the former threatens the outer universe, the latter threatens the inner universe. This is because we have invented technological devices to please the elephant and boost the ego at the expense of the other residents. In Schuurman’s terms, “we are standing on the edge of a volcano that is about to erupt” (Schuurman 2008: 77). In reality, technology should be a means by which we disclose rather than destroy our potential. Technology should help us to fulfil our mission as described by our Owner. It should provide us with more time to meet our needs and relieve us from the manual and routine labour that generally serves only animal needs. It should not make us slaves to our desires. It should not destroy our human spirit while serving our animal spirit. This is what I call ‘humane technology’.

Conclusion

The Enlightenment has made some serious mistakes. First, it has claimed that human beings are self-sufficient. Second, it has rejected the Christian God, replacing Him with the outer gods, namely nature, cause-and-effect and chance. Third, it has turned the self into an inner god. Fourth, it has pitted the inner god against the outer god in a battle to control the universe. As a result, it has produced distorted science, destructive technology, an unsustainable consumer culture and many crises.

The fallacies of the Enlightenment described above have shaped the nature of modern science and technology such that it threatens physical and human nature. In order to rectify this, we must first start to read and understand ourselves so that we can subsequently read and understand the universe. We can read and understand ourselves only under God's infinite light and guidance. Once we understand our nature, we will know that we are not self-sufficient. We will then rely on the infinite power and knowledge of every moment. We will also come to understand that the main purpose in life is not to boost the ego and turn it into an inner god or to serve the elephant and become its slave. Rather, our purpose is to disclose our almost infinite potential by relying on the Divine power and mercy through which we can understand our true nature. Once we understand our innate weaknesses, no claim to the role of master over other beings will be made. We will be humble and live in harmony with everything. We will also learn how to attain happiness.

Then, we will make radical changes in our assumptions about human nature and those changes will have a substantial cyclical impact in all areas of scientific study. A paradigm shift in our understanding of reality, human nature and the universe will result and provide us with the necessary framework for solving our current financial, environmental and moral crises and attaining true happiness. We will see changes in the nature of modern science and technology and these will help us build a more humane market, a more humane government and more humane technology.

In conclusion, I want to clarify that Islam is neither against science nor against technology. Islam is against an atheistic presentation of scientific facts, against the secular ethos that accompanies modern technology, against the use of science and technology for the destruction of the inner and outer universes which are called to transcendental purposes, and against science and technology as a means to conquer and control nature. What Islam does is provide a moral compass compatible with human nature. It supports science and technology that help human beings to disclose their potential and fulfil their Divine mission alongside other creatures in a harmonized home and it offers guidelines for the elimination of conflict between human nature and the nature of modern science and technology by setting principles that make them compatible with one another.

References

- Jung, C. & Hull, R.F.C. (1980) *The Archetypes and the Collective Unconscious*, Princeton, N.J.: Princeton University.
- Feynman, Richard (1965) *The Feynman Lectures on Physics*, Volume 3, Addison-Wesley.
- Easterbrook, Gregg. (2003) *The Progress Paradox : How Life Gets Better While People Feel Worse*. 1st ed. New York: Random House.
- Kasser, Tim. (2002) *The High Price of Materialism*. Cambridge, Mass.: MIT Press.
- Myers ,David G. (2000) *The American Paradox : Spiritual Hunger in an Age of Plenty*. New Haven, CT: Yale University Press.
- Mermer, Yamina. (2007). Causality and the Qur'anic Worldview. In: *Islamic Perspectives on Science : Knowledge and Responsibility*. Unal A, editor. Somerset, N.J.: Light.
- Nasr, Seyyed Hossein. (2007) *Man and Nature: The Spiritual Crisis in Modern Man*, Kazi Publications; Rev Sub edition

- Nasr, Seyyed Hossein. (1996) *Religion and the Order of Nature (Cadbury Lectures)*, Oxford University Press, USA.
- Nursi, B.S. (1996) *The Words* (1-33 Words), Istanbul: Sözlür.
- Nursi, B.S. (1996) *The Letters* (1-33 Letters), Istanbul: Sözlür.
- Nursi, B.S. (1996) *The Flashes* (1-33 Flashes), Istanbul: Sözlür.
- Schuurman, E. (2008) The Challenge of Islam's Critique of Technology, valedictory address, Wageningen University September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>
- Ünal, A. (2007) *The Qur'an with Annotated Interpretation in Modern English*, Tughra.



Figure 1

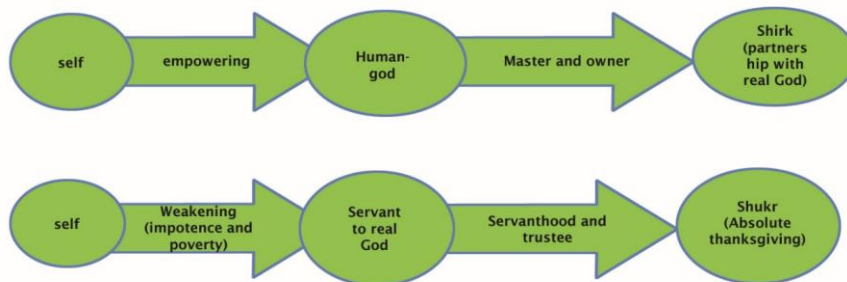


Figure 2

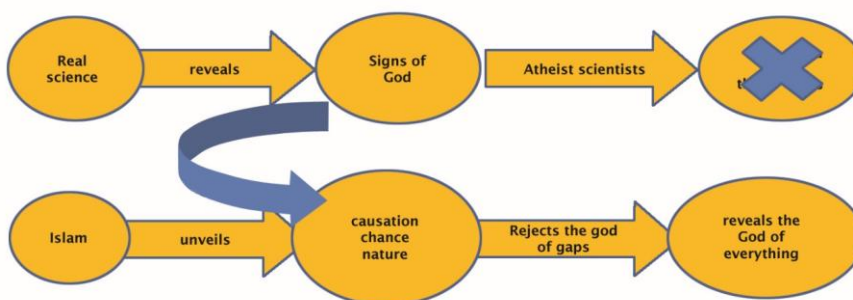


Figure 3

Technology and human values: An Islamic perspective

Emin Akcahuseyin

Abstract

Technology touches almost all parts of our lives. In this paper, I endeavour to clarify ethical aspects of technology in relation to human values from an Islamic perspective: Islam is completely in harmony with scientific thought and welcomes technological advances. Muslims strive for 'human technology'. Muslim scientists and engineers should neither be enslaved by technology nor reject it but rather face technology with a balanced approach in order to make technology more 'human'. In developing human values, Muslim scientists and engineers should follow the Islamic principles put forth in the Qur'an and *hadith*.

Introduction

Our world is changing rapidly and in all cultures, including Muslim cultures, technological breakthroughs raise both ethical and religious questions. Technology touches almost all parts of our lives. As such, the moral, social, legal and political implications must be considered. We must also consider how human values relate to technology. In particular, we must look at how technological breakthroughs impact quality of life and the meaning of man as an integer. We must also look at how technology is valued in societies and cultures.

In his recent valedictory address *The Challenge of Islam's Critique of Technology*, the Dutch philosopher Egbert Schuurman pointed out that both Islamic and Christian scholars have put forth critical analyses of technological developments in Western industrialized society and culture (Schuurman 2008a). He challenged Islamic scholars to, in their critique of technology, differentiate between the decadence that is caused by secular thinking in the Western world and the role of Christianity. This challenge invites additional clarification regarding the Islamic critique. In other chapters of this book, the Muslim scholars Bünyamin Duran, Ahmed Akgunduz and Necati Aydin clarify their position on the social, ecological, moral and spiritual implications of technological development from an Islamic perspective. Is there also a pure Islamic position or ethics of technology? And, if so, how does it relate to human values? In this paper, I will endeavour to clarify ethical aspects of technology in relation to human values from an Islamic perspective.

Science, technology and Islam

According to the Qur'an and *hadith*³⁰ (the primary sources), God created human beings in the best of forms and provided them with the abilities and resources needed to improve their well-being. He endowed them with reason, dignified and honoured them and granted them the inheritance of life and resources of nature. He further made the pursuit of knowledge an absolute obligation and its acquisition a source of pride and dignity. Human beings are thus urged by God to seek, utilize and disseminate that knowledge for the benefit of humanity.

In accordance with Necati Aydin's chapter in this book, I contend that the Qur'an is neither a scientific book nor is it a guide to technology. What it does do is encourage human beings to seek scientific and technological discoveries by calling attention to living creatures and natural phenomena. The Qur'an encourages human beings to support science and technology, and provides a vision and the highest targets for scientific and technological advancement. Aydin further emphasizes that Islam is:

...neither against science nor against technology. Islam is against the atheistic presentation of scientific facts, against the secular ethos that accompanies technology, against the use of science and technology for the destruction of the residents of the inner and outer universes which are called to transcendental purposes, and against science and technology as a means to conquer and control nature. What Islam does is provide a moral compass compatible with human nature. It supports science and technology that help human beings to disclose their potential and fulfil their Divine mission alongside other creatures in a harmonized home and it offers guidelines for the elimination of conflict between human nature and the nature of modern science and technology by setting principles that make them compatible with one another.

Technological determinism and Islamic values

Technology can be employed for both good and evil. It is the responsibility of man to use what God has blessed in ways that promote a better life for humanity. Man possesses values that influence technological development and man is in control of technology. In other words, the user determines the value of technology and how it will be used. At the same time, man's values are affected by technology. We must ask: Is the user able to exercise total control over technology? What are the tools that can be used to control the consequences of technology? What role can Islamic principles play in the values and norms that guide our relationship with technology? Is man able to make free choices when producing technology by applying scientific knowledge for the purpose of improving and conserving life?

The term 'technological determinism' has been used as an umbrella term for theories that conceive technology as something that influences human modes of action (Smith & Marx, 1994). One challenge to technical determinism claims that technical artefacts and systems are socially constructed. It claims that they are determined not by science and engineering alone but rather by social, political and cultural forces (Pinch & Bijker 1992). What are these forces? What are the intentions that underlie technological artefacts and systems? The intentions, values and social understanding of those who design, develop, market and control technology differ from one society or culture to another. Technological researchers and developers are impacted by influential people or groups with commercial, financial, political and military interests and power. From the perspective of social determinism, society or rather certain powerful segments of society are responsible for the development and deployment of selective technologies that reflect the choices of the elite.

³⁰ Hadith are oral traditions relating to the words and deeds of the prophet Muhammad. Hadith collections are regarded by all traditional schools of jurisprudence as important tools for determining the Muslim way of life, the *sunnah*.

In Islam, the intentions of people are important: “Narrated by ‘Umar bin Al-Khattab: I heard Allah’s Apostle saying, ‘The reward of deeds depends upon the intentions and every person will get the reward according to what he has intended. So whoever emigrated for worldly benefits or for a woman to marry, his emigration was for what he emigrated for.’” (Sahih Bukhari 1.1). In Islam, intentions refer to the inner feeling that drives a person to do something for the sake of God in seeking his pleasure. This inner feeling creates a motivation to excel in a comprehensive and balanced manner.

Muslims believe that religion comes from God and Islam teaches that everything in Creation has a cause. God created everything and everything in Creation has a natural cause and a natural explanation. Science increases our knowledge of God’s Creation and technology is a means (utility) by which that knowledge can be attained. Islam encourages scientific endeavours and the Qur’an commands human beings to study His signs (*esma ul-husna*) in nature. Islam also allows human beings to enjoy the fruits of human ingenuity. Believers are commanded to strive for a better world. Islam emphasizes the importance of man’s well-being. It also emphasizes that man’s relationship to the universe and to his fellow man must be one of stewardship and complementarities, respectively, and never one of mastery.

Swedish scholar Björn Hofmann contends that technology has become the symbol of our culture and a goal in itself. By building up a technological axiology, Hofmann argues that we must be responsible and avoid a technological imperative (Hofmann, 2006). In his discussion on the connection between technology and human values, Hofmann refers to the classic book of Langdon Winner. With respect to technological breakthroughs in industrialized and secularized Western cultures, Langdon Winner states:

The goals, purposes, needs, and decisions that are supposed to determine technologies are in important instances no longer the true source of their direction. Technical systems become severed from the ends originally set for them and, in effect, reprogram themselves and their environments to suit the special conditions of their own operation. The artificial slave gradually subverts the rule of its master...Hence, although technology was meant to free the human being from being a slave of nature, one can argue that we are subject to a new technological enslavement. While technology was supposed to increase our self-determination and choice, instead it seems to have reduced our autonomy. Technology appears to promote a subtle but extensive change in our thinking and motivation. Efficiency, expedience, measurability, rationality, quantification, productivity and technical improvement have traditionally been guided by quite different considerations, namely qualitative and value-related aims. (Winner 1977: 229)

Egbert Schuurman states that, because of destructive technology, “we are standing on the edge of a volcano that is about to erupt” (Schuurman 2008b). According to Necati Aydin, the solution is ‘human technology’. In Islamic tradition, ‘human technology’ is based on the Islamic value system which provides a unique code of Islamic ethics that govern our outlook on contemporary technological issues. Islamic values and needs define the foundations for a good individual and social life. The Muslim scholar Ahmed Akgunduz classifies these basic values and needs into three groups (levels or hierarchy), namely (1) necessities (*dharuriyyat*); (2) convenience (*hajiya*); and (3) refinements (*kamaliya*). Islamic legal theory (*usul al fiqh*) stipulates that the general aim of legislation is to realize values by protecting and guaranteeing their necessities (*al dharuriyyat*) as well as fulfilling their importance (*al hajiyyat*) and their embellishments (*tahsiniyyat*) (Akgunduz, 2004). Akgunduz (2004) describes the Islamic values as follows:

1. *Five basic values for all mankind.* According to Islam, there are five basic values for humanity: life (*al nafs*), reason (*al ‘aql*), descent (*nasab*), property (*al mal*) and religion (*al*

din). Islam protects these primary human values and prohibits any violation of them. These must be preserved at a minimum level whereby humans can live acceptably. In accordance with these values, humans should be able to perform moral responsibilities, protect life, secure food, clothing and shelter, attain an education, have the right to earn a living, establish a family, etc. It is to be understood that, at this level, humans have enough to live but do not necessarily live in great comfort. Islam preaches that human beings cannot live without these basic values. Individuals and states are thus advised to protect or at least respect them. Accordingly, all technological breakthroughs which serve these basic human values deserve to be protected or at least respected.

- A) *Life (physical self)*: This includes basic items such as food, clothing, shelter, transport, health, etc. In other words, it includes all things that enable a healthy body to lead a purposeful life. Islam holds the human soul in high esteem and considers an attack against an innocent human being to be a grave sin. This is emphasized in the following Qur'anic verse: "Whoever kills a human being for other than manslaughter or corruption and mischief on the earth, it shall be as if he had killed all mankind, and whoever saves the life of one, it shall be as if he had saved the life of all mankind. Our messengers came unto them of old with clear proofs (of Allah's Sovereignty), but afterwards lo! Many of them became prodigals in the earth." (Qur'an 5: 32) In fact, Muslims serve life, not death. In Islam and in other religions, all men are equal regardless of their colour, language, race or nationality.

Currently, life is being threatened in many ways. For example, in the life sciences and more specifically in genetic engineering, where bio-technological challenges like population control and behaviour regulation are being dealt with, efforts to improve quality of life through genetic manipulation have developed such that there are now attempts to modify human genetic code. This could be life-threatening if control over genetic code modification falls into the wrong hands, be they users, designers or suppliers. Also, life is being threatened by international crime like drug trafficking and the trafficking of women and children. Given their international character, such crimes are very difficult to control. Similarly, life is being threatened by diseases that know no borders. Diseases like HIV/AIDS are spreading globally and can only be controlled through concerted global efforts. The porous borders of today's world make it all the more difficult to control all kinds of contagious diseases.

- B) *Religion*: Religion is considered a basic value or fundamental right that is freely chosen. There should be no obligation to practice a given religion nor should people be obstructed from practicing the religion of their choice. Religion exists to provide guidance, peace, tranquillity, comfort and purpose in life. Religion also functions to teach man to uphold truth, justice and all the virtues, and to avoid the vices. There is no coercion in Islam. Islam came with the just word from our Creator. In the Qur'an; God said "Let there be no compulsion in religion: Truth stands out clear from Error" (Qur'an 2:256)

According to many scholars, religion is to play an important role in the twenty-first century. Huntington, in his book entitled *The Clash of Civilizations*, analyzed the present international conflicts in terms of conflict between two civilizations, namely Islamic civilization and Western civilization. However, this is untrue. In the world of humanity, from the time of Adam up to now, two great currents, two lines of thought, have always been and will so continue. Like two mighty trees, they have spread out their branches in all directions and in every class of humanity. One of

them is the line of prophet-hood and religion, the other the line of philosophy in its various forms. Whenever those two lines have been in agreement and united, that is to say, if the line of philosophy has joined the line of religion, the world of humanity has experienced a brilliant happiness and social life. Whereas, when they have become separated, goodness and light have been drawn to the side of the line of prophet-hood and religion (Nursi 2002).

- C) *Intellect or knowledge (Al Aql)*: The intellectual nature of man is made up of the mind or intelligence or reasoning power. Islam pays extraordinary attention to this and builds the intellectual structure of man on the most sound of foundations. Islam has two categories of knowledge, namely basic or fundamental knowledge, which every individual should possess, and specialized knowledge, which should be secured by only a few in a society.
- D) *Family life and offspring (Al Nasab)*: In a time when values tend to be turned upside down, family life, as the very heart of society, has been threatened as much as many other handed-down traditions have been threatened. About ten years ago, when it became fashionable for young torchbearers to live in communities where they shared sex, their children and their earnings, many feared the end of family life as we know it. Fortunately, this has not been the case. In the end, the overwhelming majority of young women still dream of having a wedding ring on their finger, living in a comfortable flat as 'Mrs. So-and-so' and bringing up their children in an orderly home, just as young men prefer to introduce that woman with the words "This is my wife". Neither socialism nor any other 'isms' were able to uproot what has been part of human nature since time immemorial.
- E) *Wealth (Al Mal)*: Wealth is obviously a fundamental human value. White-collar crimes such as money laundering, embezzlement and corruption transcend frontiers and have become similar everywhere. Such crimes threaten this value. Because of globalization, the greater majority of the wealth in the world is now in the hands of a small few. Less than one billion people possess 79% of the total wealth and 11.2% control 62.5% of the world's income. The United States, which represents 4.6% of the world's population, possesses 25.7% of the world's income, which is 26% of the world's total wealth. Unfortunately, the total income of the whole of the Muslim world, which comprises 20.5% of the total world population, is a mere 3.5%, and the Muslim world controls only 5.3% of world trade. Clearly, this value is being eroded. The immoral character of the global economy is becoming even more apparent in yet another sphere: "Globalization, aided and abetted by the removal of national controls over cross-border financial flows and the computer revolution, has resulted in short-term capital entering and exiting markets at lightning speed. Because this capital is as massive as it is volatile, it is capable of wreaking havoc upon [economies] which may not have the mechanisms to deal with it. The dramatic outflow of capital from the region, triggered off to a large extent by currency speculation, has had a devastating impact upon [undeveloped countries'] economies" (Abdul Wahab 2003: 5). Millions of women and men have lost their jobs; millions more are struggling to survive as hunger and poverty ravage home and hearth. It is not just the tragic consequences of capital volatility that religion would regard as a blot on the human conscience.

2. *Secondary Values: Conveniences (al hajiyyat)*. Conveniences comprise all activities and

things that are not vital to the preservation of the five basic values but are needed to remove difficulties or impediments in life. Examples include the use and enjoyment of things that man could do without but with some difficulty such as transportation (a car), a carpet in the winter, etc.

3. *Luxury Values: Refinements (al tahsiniyyat)*. This category includes items that are beyond those used for convenience. They not only remove difficulty but also improve comfort. For example, if a car is considered an item of convenience, then a chauffeur-driven car is obviously a refinement.

Responsibility of Muslim scientists/engineers

Egbert Schuurman states that technology has penetrated our individual lives to such an extent that we can scarcely create the distance we need to assess and evaluate it, let alone possibly change its direction. So let us first try to get a sense of the balance between the advantages and disadvantages of technology (Schuurman 2008b). Islam promotes a necessary ecological balance between all living beings and their life-sustaining environment. It places high value on scientific knowledge and on the alleviation of human suffering. Experimentation for the benefit and sustenance of mankind and for the purpose of seeking comforts in life is thus recommended: "And seek of the bounty of Allah." (Qur'an, 62:10). However, Muslim scientists and engineers must remember that new possibilities and potentials bring with them new responsibilities. The prerequisite for responsibility is the ability to make reliable estimates of the consequences of new technology for society. The Muslim scientist or engineer should neither be enslaved by technology nor reject it but rather face technology with a balanced approach in order to make technology more 'human'. A balanced approach necessitates a balance between spiritual and material attitudes in order to ensure pure intentions as the driving force behind technological developments. God reminds Muslim scientists and engineers of their obligation with the following verse from the Qur'an: "If we are not careful, then we will have to exert a lot of energy and effort to face the consequences, then hopefully we will realize our mistakes" (Qur'an 30:41). The Prophet Mohamed also provides plenty of examples of the intentions and duties with which Muslims scientists and engineers have to be equipped.

In developing values, in the sense of intentions and duties, Muslim scientists and engineers should follow the Islamic principle that states, "And never concern yourself with anything of which you have no knowledge: Surely (your) hearing and sight and mind-heart, all of them, will be called to account for it (on Judgment Day)!" (Qur'an 17:36). The Qur'an also addresses all of humanity, both Muslim and non-Muslims: "O mankind! We created you from a single (pair) of a male and a female, and made you into nations and tribes, that ye may know each other (not that ye may despise (each other))" (Qur'an 49:13).

Conclusion

Egbert Schuurman's challenge to differentiate, in the Islamic critique, between decadence that is caused by secular thinking in the Western world and the role of the Christian religion (Schuurman 2008a) called for a clarification of the Islamic critique. In this paper, the perspective of Islamic tradition with respect to technology and human values has been discussed. The conclusions are as follows:

- 1) Islam is completely in harmony with scientific thought and welcomes technological advances.

- 2) Muslims strive for 'human technology' that is based on the Islamic value system which provides a unique code of Islamic ethics that should govern our outlook on contemporary technological issues. All technological breakthroughs which serve basic human values deserve to be protected or at least respected by individuals and states.
- 3) Muslim scientists and engineers should neither be enslaved by technology nor reject it but rather face technology with a balanced approach in order to make technology more 'human'. In developing human values, Muslim scientists and engineers should follow the Islamic principles put forth in the Qur'an and *hadith*.

References

- Abdul Wahab, S.B. (2003) *Globalization and its implications on national security*, available at <http://mpk.rmp.gov.my/jurnal/2003/globalisationimplication.pdf>
- Akgunduz, A. (2004) *Norms and Values*, available at http://www.uga.edu/islam/norms_values.html
- Nursi, B.S. (2002) *The Rays Collection*, Istanbul: Sözlür.
- Hofmann, B. (2006) When means become ends: technology producing values, *Seminar.Net, International Journal of Media, Technology and Lifelong Learning*, 2 (2) 2006, available at <http://www.seminar.net/volume-2-issue-2-2006/when-means-become-ends-technology-producing-values>
- Schuurman, E. (2008a) The Challenge of Islam's Critique of Technology, valedictory address, Wageningen University September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>
- Schuurman, E. (2008b). *The Ethics of Responsibility as a Comprehensive Approach: An Application to the Ethics of Technology*, available at <http://www.metanexus.net/magazine/tabid/68/id/10889/Default.aspx> (Metanexus Institute).
- Smith, M.R. & Marx, L. (1994) *Does technology drive history? The dilemma of technological determinism*, Cambridge, MA: MIT.
- Trevor, P. & Bijker, W. (1992) The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other, in W. Bijker and J. Law (eds.) *Shaping Technology/Building Society*, Cambridge, MA: MIT.
- Winner, L. (1977) *Autonomous Technology*, Cambridge MA: MIT.

Can Muslims and Christians be brothers in arms?: The search for a foundation for cooperation in a plural culture

Gert-Jan Segers

Abstract

Professor Egbert Schuurman believes that our culture needs a ‘paradigm shift’ away from the Enlightenment. Christians and Muslims need to make a ‘moral pact’ that will lead to a culture whose basic categories are life and love. But is such a moral pact feasible? The gap between mainstream Muslim culture and mainstream Western culture is wide, and social, cultural and political tensions are the consequence. Islam is also adding to European cultural fragmentation, which makes it more difficult to reach an agreement on the cultural essentials. Since both Christians and Muslims face similar challenges, the biblical concept of a social-political covenant can be a binding idea in a pluralistic society. In the biblical sense of the word, it is not a ceasefire, not a temporary or economic treaty, but a mutual and unconditional relationship that is based on the promise of loyalty.

In Islamic circles, Tariq Ramadan proposes a commitment of Muslims to a plural, Western society that goes beyond the traditional Islamic worldview and the view of social peace in a non-Islamic society as a period between wars. He views Europe not as a not-yet Muslim society but as a House of Testimony. This is crucial. Peace and cooperation can only function when there is trust while trust only evolves when there is a solid foundation for it. A moral pact may not be easy but the concepts of a social-political covenant and the House of Testimony can provide a foundation for it.

Introduction

What Professor Egbert Schuurman presented in his valedictory address is nothing less than a *Grand Vision* (Schuurman 2007). He firmly believes that the cultural experiment grounded in the Enlightenment has failed (Schuurman 2007: 17) and that we are currently faced with the results of this failure, namely “climate change, rise in sea levels, shifting climate regions, disruption of ecological systems, loss of biodiversity, new tropical diseases” (Schuurman 2007: 16). Essentially, what is at stake now is creation itself. With this in mind, he emphasizes the need for a paradigm shift that will result in norms and values that are no longer derived from the scientific-technological worldview, and a subsequent transformation of our culture into a sustainable and durable society that will once again value religion and spirituality.

Schuurman has discovered that crucial elements of his critique of the culture of technology are shared by modern Muslim thinkers like Mohammed Iqbal from Pakistan. Therefore, in a time in which everyone feels the tension, both mentally and viscerally, between “infinite technological expansionism and the finite nature of creation and its inherent potentials” (Schuurman 2007: 18), both Christians and Muslims like Mohammed Iqbal need to work together in order to attain the necessary turnaround. Together, they need to exchange the current dominant worldview — the ‘machine model’ — for a new worldview — ‘the garden model’ — that endeavours to protect life. Both Christians and Muslims agree on the creed:

“We love all creation because of the Creator.” As such, they need to make a ‘moral pact’ that will lead to a “culture whose basic categories are life and love and whose mission is to promote and strengthen the cause of justice” (Schuurman 2007: 18). Schuurman also believes that when people learn to practice moderation, “tensions and threats will subside, not only within the West itself but also in Western relations with Islamic culture” (Schuurman 2007: 19).

The question, though, is whether there is indeed sufficient common ground for such a moral pact. Are there theological and cultural concepts on both sides that would enable such a pact? And, when considering the cultural and social relations between Muslims and the West, is such a moral pact feasible?

Can Islam help to save Western culture?

The life of Sayyid Qutb, mentioned in Schuurman’s address, demonstrates that the exchange of ideas and of students between the Muslim world and the West does not always guarantee peace and understanding. In fact, Qutb moved to the West and became not only a criticaster of Western culture but also an advocate of a violent *jihad* against secular Arab rulers and Western powers. Similarly, Ziad Jarrah left his native Lebanon to study aerospace engineering at the University of Hamburg and became a *jihadi* who turned against Western dominance (National Committee on terrorists attacks: 163). Despite his secular Sunni Muslim roots, he joined the *Al-Qaeda* cell in Hamburg that took the lead in the attacks on September 11, 2001. What has been said about Jarrah was that he never missed a party in Beirut and he never missed a prayer in Hamburg. The latter is not intended to be seen as praiseworthy piety but rather as an illustration of his increasingly problematic relationship with Western culture. Although Qutb and Jarrah do not represent mainstream Islam, they are dramatic examples of the difficulties that Muslims can experience in contemporary Western culture.

In his 2005 *Seymour Martin Lipset Lecture on Democracy in the World*, Francis Fukuyama addressed the identity crisis experienced by many Muslims that have become part of European society (Fukuyama 2006: 5-20). He quotes the French scholar Olivier Roy who believes that Islamism — the radical and violent branch of Islam — is the consequence of the ‘deterritorialization’ of Islam. He contends that Muslims living in the Western world experience a gap between their inner identity and their outward behaviour because their Muslim identity is not supported by a traditional Islamic society and because Western Muslims often feel pressure to conform to Western cultural norms. This is exemplified by the fact that many young Muslims in the West seek out ‘web imams’ who can explain what is right (*halal*) and what is wrong (*haram*). While Islamic societies support the legal and cultural applications of Islam, Western Muslims are often left to their own judgment. Roy calls this the ‘Protestantization’ of Islam “where salvation lies in a subjective state that is at odds with one’s outward behaviour” (Fukuyama 2006: 10, 11). Many European Muslims are lost between, on the one hand, the conservative culture of their parent’s Islamic world with its corresponding prescribed identities, and the modern, more permissive Western society where one can choose and shape one’s own identity, on the other. This generates a culturally complicated situation that is exemplified by the fact that second generation Moroccan-Dutch citizens are seven times more likely to have schizophrenia than Dutch citizens while their parents, the first generation Moroccan-Dutch immigrants, are only four times more likely (Veling et al. 2008: 66).

Moreover, Islamic-Western relations have a problematic history. All too often, Islam and the West have seen each other as ‘the other’. There are also contemporary issues like, from a Western perspective, the lack of political and religious freedoms in the Muslim world (US State Department 2008) — freedoms that are embraced by all of Western culture and widely believed to be essential to Western culture. In other words, the gap between mainstream

Muslim culture and mainstream Western culture is wide, and social, cultural and political tensions are the consequence. If we believe that a moral pact is feasible and if we are willing to work on creating such a pact, we must address this gap. We must also realize that, given our shared, troubled history and our contemporary disagreements, the combined efforts of Muslims and Western Christians are not necessarily sufficient to cure a failed culture. Even if we are willing and able to set religious differences aside — which to note are, according to Schuurman, ‘unbridgeable’ (Schuurman 2007: 17) — there are still political and cultural gaps to be bridged and social challenges to be met.

There is one additional aspect. Schuurman believes that, although the Enlightenment has Christian roots (Schuurman 2007: 11), its failure can, at least in part, be resolved by the influence of Muslims. This raises important questions, namely how many religious and cultural differences can a society handle? Is the influence of Islam part of the cure or part of the problem? Does Islam add to cultural fragmentation or could it help? These have been addressed by the Dutch political and legal philosopher Andreas Kinneging (2009: 12 ff.). He claims that social contrasts are dangerous when they are based on different interests and opposing ideologies and, with a growing Muslim population in Europe, the religious and ideological differences are indeed increasing. We can negotiate different interests but it is impossible to negotiate religious truth claims. Nonetheless, over time, religious tolerance has become a virtue but tolerance is only possible when there is agreement on the cultural essentials (Kinneging 2009: 23). For a long time, Europe had a predominantly Christian culture that provided cultural agreement on the essentials. However, an increasingly secular culture alongside a growing number of non-Christian immigrants has diminished Christian culture in Europe. According to Kinneging, this is a problem. He cites the Spanish philosopher Ortega y Gasset:

“(I)f dissent affects the basic layers of common belief on which the solidarity of the social body lastly rests, then the state becomes a divided house, society dissociates, splitting up into two societies — that is, two groups with fundamentally divergent beliefs. As there is no room for two societies within one social space, radical dissension necessarily terminates in the annihilation of the society in which it befalls.”

According to Kinneging, the only solution is ‘constitutional patriotism’ as is practiced in the United States. In essence, what Kinneging claims is that there needs to be agreement on essential norms and values — a cultural minimum that functions as a foundation for a religiously and culturally diverse society. Whether this works is questionable. Nonetheless, it does imply that the creation of a moral pact is likely a difficult and complicated endeavour.

Are there theological and cultural concepts for a moral pact?

When we take cultural challenges into account, it becomes apparent that Muslims and Christians do face similar challenges. Schuurman mentions environmental problems and the failure of the scientific-technological worldview. In fact, the Dire Straits once sang, “*we have just one world.*” And in keeping with the Dire Straits, we ask: Can we be *brothers in arms*? Schuurman believes that we can. In fact, he contends that that Muslims and Christians not only face the same challenges; they also have the spiritual sources that may very well provide a cure for our sick culture. If this is the case, we must then ask ourselves which concepts in Christian and Islamic traditions can enable us to make a moral pact?

The Biblical concept of the covenant

According to Dutch political philosopher Govert Buijs, the early church determined, by looking to the life of Jesus Christ, that love, not fate or war, is the beating heart of the universe (Buijs 2009: 69). They consequently committed themselves to serving society, to caring for the weak and to being involved in education and social action. In doing so, they discovered that people have the ability to form public communities that are not based on family or economic ties but rather on a promise to be committed to each other and to submit to one another. Hannah Arendt claims that, together with forgiveness, the “power of promises” is the most important contribution of Christianity to Western culture (quoted in Buijs 2009: 72). The Church is a public but not a political community to which people can belong on the basis of equality. The ability to promise to be loyal and faithful to one another and the subsequent community of the church has led to a *civil society* that, together with other forces, contributed substantially to Western social capital (Buijs 2009: 72, 77).

Part of this social and moral capital is religious tolerance. In thinking about religious tolerance, we must recognize that religious tolerance only became a virtue in European society after the bloody, religious wars of the sixteenth and seventeenth centuries. The United Kingdom’s chief Rabbi Jonathan Sacks writes that, in contrast to common belief, religious tolerance is not the product of secularization but, especially for thinkers like John Milton and John Locke, tolerance was religiously motivated and founded (Sacks 2005: 255). For these thinkers, Sacks claims, freedom of religion and conscience was not derived from indifference or scepticism. It was a matter of faith. Referring to biblical teachings on tolerance, community and society, Sacks proposes the idea of a social-political covenant as a binding concept in a pluralistic society. In the biblical sense of the word, it is not a ceasefire, not a temporary or economic treaty, but a deep, mutual and unconditional relationship that is based on the promise of loyalty and faithfulness. Two groups or individuals acknowledge each other’s integrity, promise to help each other and stand by each other in good times and bad times, sharing the same earthly fate and trusting each other’s promise (Sacks 2005: 259). According to Sacks, there is a fundamental difference between a covenant and a contract. The latter is an exchange of rights and services that provide temporary benefit while the former is a matter of unconditional loyalty, even when one party fails to keep its promise. This is exemplified in the Old Testament that recounts numerous occasions in which God was faithful to his people even when they disobeyed and neglected their promises to him.

A social manifestation of this biblical understanding of the covenant is the institution of marriage. It is a covenantal structure based on the promise of faithfulness, mutual support and loyalty. It is also possible to view relationships between citizens and between citizens and society as covenantal. Societies or cultures in which relationships are based on covenant are fundamentally different than societies or cultures in which relationships are based on social contract. A literary rendering of the covenantal view saw the light on the *Mayflower*, which was the ship that brought the first pilgrims from Europe to the new world called America. During that difficult journey in 1620, the pilgrims signed a covenant in which they promised loyalty to God, each other and the community “unto which we promise all due submission and obedience.” This covenantal view has resonated in many of great speeches of famous US presidents including John F. Kennedy (“And so my fellow Americans, ask not what your country can do for you — ask what you can do for your country”³¹).

In his latest book, Christian philosopher Roel Kuiper elaborates on the social and cultural application of covenantal thinking. He contends that the dominant contract-philosophy may lead to equality but does not create community and communality (Kuiper 2009: 164). A well-connected society depends on the ability of its members to promise loyalty and commit

³¹ Inaugural address, 1961.

themselves to the common good (Kuiper 2009: 241). It is thus in the sphere of family and religion that this ability is learned (Kuiper 2005: 254). The crisis of Western culture, according to Kuiper, is related to the disconnection between, on the one hand, public life, science and human relations and, on the other, the moral capital of Christianity. On a more hopeful note, Kuiper claims that this capital can be revived and help our Western culture in crisis (Kuiper 2009: 258).

The Islamic concept of House of Testimony

In the traditional binary division of the world, Islam separated *Dar Al-Islam* and *Dar Al-Harb*, House of Islam and House of War. In this worldview, *Dar Al-Islam* is that part of the world where Islam rules and *Dar Al-Harb* is that part of the world that has yet to be conquered by and/or converted to Islam. In his writings, the Egyptian-Swiss Islamic scholar Tariq Ramadan argues that this distinction is outdated (Ramadan 2008: 60ff). He claims that no serious scholar but only traditionalists and politicized Islamic groups continue to make the distinction. Ramadan emphasizes the fact that, in this globalizing world, the traditional division is no longer relevant. Under the Ottoman rule, Muslims were denied the right to immigrate to the European *Dar Al-Harb* but now millions of Muslims live as European citizens and are part of a religiously diverse culture. The old Islamic division of the world no longer makes sense in this new cultural reality. In this context, some Islamic scholars use the, from a non-Islamic position, less preferable concepts of House of Truce (*Dar Al-Ahd*), House of Treaty (*Dar Al-Sulh*) and House of Invitation (*Dar Al-Dawa*). From a non-Islamic perspective, these concepts oppose the idea of society as a social-political covenant and, as such, they do not provide a solid foundation for sincere solidarity and a well-connected community. If non-Muslims are only viewed as not-yet-Muslims, and when the choice for peace is only momentary and only a matter of a temporary contract, trust cannot be built in our multicultural society. This view does not encourage Christians to work together with Muslims towards a “culture whose basic categories are life and love”. Ramadan uses an alternative concept when describing the current cultural reality of a plural society, namely the House of Testimony (*Dar Al-Shahada*). This concept acknowledges the fact that Muslims are part of a pluralistic world and that they belong to a diverse culture. As such, the Muslim believer is no longer a stranger or ‘the other’, he is no longer connected to his neighbour only by contract; rather, the Muslim believer is at home in a community to which he is wholeheartedly committed and in which he tries to reconcile his faith with the context in which he lives.

Tariq Ramadan emphasizes that, in Europe, Muslims are granted freedom of religion and freedom of conscience. They, therefore, do not ask for special treatment but, living in the House of Testimony, only want to be part of society. According to Ramadan, Muslims in the West are now coming out of their isolated position and are increasingly contributing to the well-being of the whole community. He further contends that Muslims should not be viewed by themselves or by others as a minority community or as representatives of their specific Islamic interest but rather as full members of one single society. In *Western Muslims and the Future of Islam*, Ramadan writes:

“As part of Western societies, Muslims now have the responsibility, in accord with the teachings of Islam, to honor their commitment to the laws (of their adopted countries), to protect their identity, and, within the extensive limits of the liberty open to them, to work and act in all the various areas (social, legal, economic, and political) and to think through as far as possible the dimensions of an improved harmony between the Muslim personality and the Western landscape” (Ramadan 2008: 100).

In this context, Ramadan still uses the term ‘contract’. However, the proposed commitment of Muslims to a plural society goes much further than the traditional Islamic worldview and the view of social peace in a non-Islamic society as a period between wars. This is crucial. Social peace and mutual cooperation can only function when there is trust while trust only evolves when there is a solid foundation for it.

Final observations

It is imperative that Muslims and Christians make a moral pact and choose to cooperate and commit themselves to the common good and greater community for several reasons. As Schuurman has argued, it is crucial to the future of Western culture and necessary if we are to transform the current dominant worldview into a new worldview that aims to protect life. It is also critical to relations between Muslims and Christians and to relations between the Islamic world and the West. In a study from another part of the world, Ashutosh Varshney, political scientist at the University of Michigan, researched the tension and violence between different religious groups in India. He concluded that, in times of tension, violence does not occur in areas where different religious groups have a long tradition of cooperation and communication (Varshney 2003). These findings should encourage Christians and Muslims to work together and to draw the best out of their traditions for the greater good of our collective culture. It has been argued here that this may not be easy but that the concepts of a social-political covenant and the House of Testimony can provide us with a solid foundation for this moral pact. Further study of these concepts is recommended.

References

- Buijs, G. (2009) Christelijk-sociaal — een archeologie, een herinnering, In M. Becker (ed.), *Christelijk Sociaal Denken, traditie, actualiteit, kritiek*, Budel: Damon.
- Fukuyama, F. (2006) Identity, Immigration, and Liberal Democracy, *Journal of Democracy*, 17 (2): 5-20 (The 2005 Seymour Martin Lipset Lecture).
- Kinneging, A. (2009) Constitutioneel patriotisme ter overbrugging van tegenstellingen, In Raad voor Maatschappelijke Ontwikkeling (ed.), *Polarisatie, bedreigend en verrijkend*, Amsterdam: RMO.
- Kuiper, R. (2009) *Moreel kapitaal, een filosofie van verbondenheid in een onzekere wereld*, Amsterdam: Buijten & Schipperheijn.
- National Committee on terrorists attacks. *The 9/11 Commission Report*, available at www.911commission.gov/report/911Report.pdf
- Ramadan, T. (2008) *Een jihad van vertrouwen*, Amsterdam: van Gennip (original title: *Face a nos peurs. Le croix de la confiance*).
- Sacks, J. (2005) *Leven met verschil, menswaardige verscheidenheid in een tijd van botsende culturen*, Zoetermeer: Boekencentrum.
- Schuurman, E. (2008) The Challenge of Islam’s Critique of Technology, valedictory address, Wageningen University September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>
- US State Department, *International Religious Freedom Report 2008*, available at <http://www.state.gov/g/drl/rls/irf/2008/>
- Varshney, A. (2002) *Ethnic Conflict and Civic Life: Hindus and Muslims in India*, New Haven: Yale.
- Veling, W. et al. (2008) Ethnic Density of Neighborhoods and Incidence of Psychotic Disorders Among Immigrants, *The American Journal of Psychiatry*, 165 (1): 66.

The Islamic view of technology: Rediscovering the pattern of balance and order

Abdelaziz Berghout

Abstract

In my response to Schuurman's paper, I want to first establish a framework for engagement between the Islamic and Western worlds. What is essential to this framework is that Islam acknowledges that everyone has the right to exist and create one's own cultural and civilizational space based on one's own philosophy of life. This should be recognized by all cultures and nations in order to enable a peaceful exchange between cultures. In an effort to outline the contribution that Islam can make to this exchange, main elements of the Islamic worldview are presented. These include respect for all human beings and respect for nature as God's creation.

Additionally, this chapter discusses technology within an Islamic framework. According to the Islamic worldview, technological developments should be seen as an act of worship. Understanding other people's technologies should be considered an act of learning and a means of civilizational expertise and knowledge exchange. At the same time, Islam emphasizes balance between the technological worldview, culture, mind and approach, on the one hand, and the ethical framework that governs the technological mind, on the other.

The Western world and the Muslim world need to help each other to better understand themselves and others as we work together to create new structures for life.

Introduction

I would like to start with a word of thanks to Professor Egbert Schuurman for his excellent paper and immense contribution to the intellectual discourse between the West and the Muslim world. Indeed, the level of maturity and the words of wisdom embodied in his work should be commended and further enhanced. Schuurman's paper is an important platform for a sound discussion on creating new structures for life from both Christian and Islamic perspectives.

Schuurman starts his paper by saying, "the Western world and the world of Islam share a history but they also differ greatly" (Schuurman 2008: 75). In my view, this statement is true and a place to start. In this paper, I want to elaborate on that statement from an Islamic perspective and focus on one of the differences between the West and the Islamic world, namely the issue of technology. This paper outlines the Islamic view of technology thus paving the way for a better articulation of the bigger picture of Islam's critique of the culture and worldview residing behind the current Western technological structure and might.

In brief, this paper endeavours to do two things. First, it seeks to establish a framework for engagement between the Islamic and Western worlds. As such, it highlights the basic aspects of the Islamic worldview thus enabling a better appraisal of its essentials. Second, it attempts deals with an understanding of technology within the Islamic framework.

A general framework for the study of the Islamic view of technology

This section provides a general framework for the study of the Islamic worldview as a broader context for the articulation of its view of technology. It focuses on two main points. The first is Islam and the human existential right to differences and uniqueness and the second focuses on selected essentials of the Islamic worldview.

Islam and the human existential right to differences and uniqueness

To better articulate the issue of differences between the Western world and the world of Islam, a proper context is necessary. The following verse from the holy Qur'an provides an important platform: "O mankind! We created you from a single (pair) of a male and female, and made you into nations and tribes, that ye may know each other (not that ye may despise each other). Verily the most honoured of you in the sight of Allah (he who is) the most righteous of you. And Allah has full knowledge and is well-acquainted with all things" (49:13).

Among other things, this verse speaks of a crucial right belonging to each and every ethno-cultural and religious group, namely the right to exist and create one's own cultural and civilizational space based on one's own philosophy of life. As such, the right to distinctiveness and uniqueness is existentially granted, thereby allowing for the creation of one's own identity and socio-cultural dynamics. This is why we find, in the world today, various cultures rooted in various faith systems including Islam, Christianity, Buddhism, Confucianism, Judaism and others. This is, in and of itself, a wonderful pattern created by God in the creation of mankind. Logically, this cultural uniqueness should, by its very nature and dynamics, lead to some sort of human interaction and sociability. In other words, if cultures and people differ in certain civilizational, religious and linguistic qualities, then it is only logical that we seek to know the unique qualities of each other so as to know one another and appreciate our differences for the purpose of creating structures that promote life and progress.

Creating global cultural space for all as a basis for civilizational progress

Furthermore, in the process of knowing one another, our own cultural space is created within a larger context which involves other people's spaces represented by their worldviews and cultural dynamics. At this greater level of interaction, mankind created many civilizational structures for life. Indeed, mankind has witnessed the existence of many civilizational models that evolved and created space not only for one's own development but also for others as well. For instance, Islam has created this space and opportunity. I believe that the contribution of Islam to the civilizational and scientific cause of humanity is undeniable even in the heart of classical Europe and in the rest of the Western world. Similarly, one may argue for the space and opportunity created by Christianity, Buddhism and other major religions and for those religions' worldviews. In the same token, undeniably, contemporary Western civilization has created extensive civilizational space and opportunity for its own people and for the rest of the world.

Having said that, and on the basis of the above verse, it is thus clear that differences among people, cultures and religions are not only a mercy bestowed upon us by our Creator but also a pattern which governs our social structure and life. Generally speaking, we should know one another because of our uniqueness and differences in certain essential terms such as religion, language, worldview, culture, colour and ethnicity. Therefore, if we judge our existential uniqueness from a positive angle then our differences need to be tolerated and

maintained at acceptable levels. However, if we consider our uniqueness as a source of conflict and aggression, as it frequently is viewed today, then we undermine the meaning of positive differences which, in turn, creates an even greater urgency to know one another.

Cultural differences, destructive conflicts and the need for new structures for life

In this respect, and in order to understand and manage the differences between the Western world and the world of Islam, one needs to view things from a new perspective. There is no doubt that we, as humans, differ *inter alia* in our religions, worldviews, cultures, social milieus, intellectual maturity and epistemological positions and systems. Islam and Christianity are no exception. Thus, the main question should not be why we differ or why we are unique in certain aspects. Rather, it should be why do our differences lead us to destructive conflicts?

As the above verse suggests, we should know one another but knowing one another requires the creation of life structures for harmony, cooperation and collective efforts against aggression, agony, injustice and mind sabotage. In the absence of this inclusive state of mind and culture, one cannot imagine any sort of serious shared effort towards creating such a necessary structure for life in our globalized world. The next point sheds some light on the essentials of the Islamic worldview and its possible contribution to a new structure for life.

Selected essentials of the worldview of Islam

Similar to all other worldviews that offer a vision of the world and provide answers to the ultimate questions, the Islamic worldview has its own essentials, principles and foundations. Those essentials constitute the core elements that distinguish it from other worldviews. The present section highlights selected essentials of the Islamic worldview. In general terms, the Islamic worldview comprises the following basic beliefs:

1. The unity of God.³²
2. The main articles of faith are: Believe in God, angels, prophets, scriptures, predestination and the hereafter.³³
3. The objectives of Islam are, in effect, the preservation of religion, intellect, life, wealth, progeny, freedom, justice, human nature, environment and vicegerency at large (Abu Ishaq al-Shatibi n.d.; Al-Juwayni ‘Abd al-Mali Imam al-Haramayn 1399; Alal Al-Fasi 1956).
4. Acquiring knowledge and possessing technology and sciences are rational obligations and religious duties.³⁴ The signs, laws and patterns of God are planted and disseminated through

³² Allah says: “Say: He is God, the one and only God, the eternal, the uncaused of all being. He begets not, and neither is He begotten and there is nothing that could be compared to Him.” [Q 112: 1-4]; Allah says: “To Him belongs the dominion of the heavens and the earth” [39: 44]; Allah says: “Unto God belongs all that is in the heavens and all that is on earth.” [Q 2: 283]. Allah says: “He is the Creator of the heavens and the earth. He has made for you pairs from among yourselves, and pair among cattle: By this means does He multiply you: there is nothing whatever like unto Him, and He is the One that hears and sees all things” [Q 42: 11]. Allah says: “All things devoutly obey His Will.” [Q 30: 26].

³³ Allah says: “The Messenger believeth in that hath been revealed to him from his Lord, as do the men of faith. Each on of them believeth in Allah, His angels, His Books, and His Messengers...” [Q 2: 285] and “O ye who believe! Believe in Allah and His Messenger, and the scripture which He hath sent to His Messenger and the scripture which He sent to those before him. Any who denieth Allah, His angles, His books, His Messengers, and the Day of Judgment, hath gone far, far astray.” [Q 4: 136].

³⁴ Allah says: “Proclaim! Or read! In the name of thy Lord and Cherisher, Who created - created man, out of a mere clot of congealed blood. Proclaim! And thy Lord is Most Bountiful. He Who taught the use of the pen. Taught man that which he knew not.” [Q 96: 1-5]. IjtihÉd, thinking, pondering over the creation of God is an act

Met opmerkingen [Sarah2]: See comment. Second citation contains weird characters.

the heavens, earth and human life. God commands man to discover them and exploit them in his spiritual and material advancement.³⁵

5. The protection of the environment³⁶ and of the earth is the responsibility of all mankind.³⁷
6. The unity of humanity: There is one origin and one Creator, i.e. Allah.³⁸
7. The unity of vicegerency: All humans are vicegerents of God who are delegated with the trust.
8. The unity of trial and test: All humans are created to undergo trial and test with positive and negative deeds and events.³⁹
9. The unity of human honourability and dignity: All humans are honoured and dignified regardless of their race, religion and language.⁴⁰
10. The unity of human responsibility and accountability: Every human being is responsible for his acts and deeds and will be accountable for them on an individual basis.⁴¹
11. The unity of the sacredness of human life and soul: The life of every human being is sacred and is not subject to destruction of any sort.⁴²
12. The only criterion for human preference and human success or failure is *taqwah* (fear of God and good deeds).⁴³
13. Moderation forms the essence of the Islamic way of life.
14. Human mutual security and global protection of people is obligatory and a heavy responsibility upon the shoulders of committed vicegerents of God.⁴⁴
15. Relations between Muslim society and other human societies are based on peaceful co-existence, mutual understanding and cooperation, except in cases of aggression or acts of oppression (Khaduri 1984:40-41).

of worship. Allah says: "Thus doth Allah make clear to you His signs: in order that ye may ponder 'consider'" [Q 2: 219].

³⁵ Allah says: "Verily in the creation of the heavens and the earth, and the succession of night and day: And the ships that speed through the sea with what is useful to man: And in the waters which God sends down from the sky, giving life thereby to the earth after it had been lifeless, and causing all manners of living creatures to multiply thereon: And in the change of the winds and the clouds that run their appointed course between sky and earth: In all this there are signs indeed for people who use their reason." [Q 2: 164].

³⁶ Compare with the modern Western view on the relationship between man and nature. For example, Richard C. Foltz (2002: xiii) argues that "Western civilization has long seen nature as an adversary to be overcome and resources as existing only for the benefit of human beings."

³⁷ Allah says: "He to whom belong the dominion of the heavens and the earth: no son has He begotten, nor has He a partner in His dominion: It is He who created all things, and ordered them in due proportions." [Q 25: 2].

³⁸ Allah says: "O mankind! Reverence your Guardian-Lord, Who created you from a single person, Created, of like nature, his mate, and from them twain scattered like seeds countless men and women." [Q 4: 1] and "He who created the heavens and the earth and all that is between..." [Q 25: 59].

³⁹ Allah says: "And We test you all through the bad and the good things of life by way of trial: And unto Us you all must return." [Q 21: 35].

⁴⁰ Allah says: "Now, indeed, We have conferred dignity on the children of Adam, and bore them over land and sea." [Q 17: 70]. 23-Unity of human will: "All human beings are given a free will to select their way of life and religion". Allah says: "Say, 'The Truth is from your Lord': Let him who will, believe, and let him who will, reject it." [Q 18: 29].

⁴¹ Allah says: "Then shall anyone who had done an atom's weight of good, see it. And anyone who has done an atom's weight of evil, shall see it" [Q 99: 7-8].

⁴² Allah says: "That if anyone slew a person — unless it be for murder or for spreading mischief in the Land — it would be as if he slew the whole people: and if anyone saved a life, it would be as if he saved the life of the whole people." [Q 5: 32].

⁴³ Allah says: "...Verily the most honorable of you in the Sight of Allah is he who is the most righteous of you..." [Q 49: 13].

⁴⁴ Allah says: "Those who believe, and adopted exile, and fought for the faith, with their property and their persons, in the cause of God, as well as those who gave them asylum and aid — these are all friends and protectors one of another" [Q 8: 72- 75].

16. Man is not forbidden to enjoy and make use of the bounties and gifts bestowed on him by God as long as he/she follows the proper ways and the right instructions of his Lord.⁴⁵
17. Corruption, mischief, moral decline and the collapse of people, nation and civilization is caused by those who disobey the commands of God and go against His laws and patterns in religion, the universe and life.⁴⁶
18. Mutual consultation, equality, justice, freedom, unity, tolerance, mercy, compassion, brotherhood, cooperation, love, advice and good deeds are all human and Islamic virtues and obligations.
19. The hereafter exists and all mankind will return for accountability and the final destination.

Figure 1 summarizes some of the important aspects of the Islamic worldview as discussed above.

<Insert Figure 1 here>

Understanding technology within the Islamic framework

The need for a worldview of balanced technology: Integrating the realm of ideas, values and objects

Having outlined the general framework of the Islamic worldview, we are now in a better position to approach the Islamic view of technology and its underlying culture and vision. The issue of technology in Islam is not only a matter of the outward manifestation and transformation of ideas and scientific discoveries into powerful tools, means, techniques, devices, apparatus and instruments which allow for the control and exploitation of the universe and its resources. It goes beyond this powerful appearance and potentially to the core of human existence itself. Creating, controlling and using technology and its powerful apparatus may not fully spell out the reality of what technology is. Within the above Islamic framework, technology should also be approached from within. We must consider the normative aspects of this reality. In this context, the following questions become crucial: What is the purpose of technology? What are the values that shape our technological mind? What are the guidelines and standards for a balanced technological progress? What is the worldview that shapes our technological well-being? What kind of culture does the current technology inhabit and advocate? Is technology the be all and end all in our life and destination? Why is technology becoming a threat to the very essence of man's existence? Are there any limitations to the current scientism and technological power? Can science and technology alone restore the essence of balanced human well-being?

⁴⁵ Allah says: "Say: Who hath forbidden the beautiful gifts of God, which He hath produced for His servants, and the things, clean and pure, which He hath provided for sustenance? Say they are, in this world, for those who believe, and purely for them on the Day of Judgment, thus we explain the signs in detail for those who understand." [Q 7: 32].

⁴⁶ Allah says: "Mischief 'corruption' has appeared on land and in the sea because 'the meed' (reward) that the hands of men have earned. That Allah may give them a taste of some of their deeds: in order that they may turn back from Evil" [Q 30: 41].

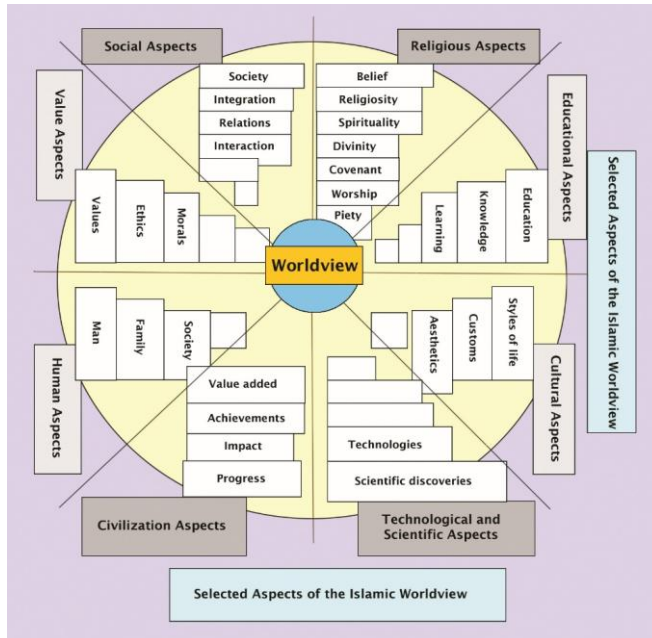


Figure 1. Selected aspects of the Islamic worldview

These questions demonstrate the importance of thinking not only about the creation and use of technology but also about the culture, the worldview, the purpose and the approach that underlies the very core question of technology itself. As a matter of fact, as a Muslim, I do not believe that my religion instructs me to reject technology or destroy others' technology. On the contrary, I am ordered to produce technology as an act of worship and embrace other people's technologies as an act of learning and exchange of civilizational expertise and knowledge. Indeed, Islam never obstructs the human mind from excelling and discovering the patterns and signs of God in the universe and human life. In fact, it rewards those who travel through the space and discover the bounties and miracles of God in the creation of heaven and earth. At the same time, Islam emphasizes a balance in the technological worldview, culture, mind and approach, on the one hand, and the ethical framework which governs the technological mind, on the other.

In accordance with this, I believe the following words of Egbert Schuurman (2007: 78) are crucial:

This whole development has called up forces that have created tensions of gigantic proportions. The ideal of unprecedented material well-being may have been realized in part, but at the same time it is clear that this prosperity has been attained at the price of human freedom and at the expense of the biosphere, and that with all our prosperity we are standing on the edge of a volcano that is about to erupt. Western culture is a culture that is internally divided. Absolutized freedom is in tension with the absolutization of scientific-technological control, and vice versa. It is a tension that shapes the history of our time.

In fact, thinking about any structure for life in our current context requires a new worldview and a culture that will re-invent our technological mind and the value system related to it. It is important to attain a balance between our value systems and the function of technology in our lives. Our minds and souls must migrate towards a more integrated and balanced worldview and culture that views technology as an integral part of the whole and not a mere apparatus of control and exploitation. As such, technology should not be seen as an apparatus and tool that empowers certain nations at the expense of others or that enriches certain people at the expense of nature and the environment. Rather, technology should add value for all mankind. This kind of technological worldview and culture requires a mind, soul and character change. We need to revise our perceptions and review our technological worldview and culture so as to create new conducive structures for a better understanding of technology and its function in the civilizing process and progress of mankind.

Balanced technology: Changing minds, policies and rules of engagement between the Western and Islamic worlds

We can get together every year for occasions like this and we can continue to talk about these issues but as long as we refrain from changing our minds, souls, characters and attitudes, the status quo will be maintained. Consequently, there is a need to review the policies, education and scientific worldview that gave birth to what I call 'the free technology mind'. This mind perceives itself to be the god of technology thus undermining the need for a real God and real religious, ethical and moral teachings, without which technology would become naked and potentially destructive. What Islam advocates is a technological worldview and culture that integrates the realm of ideas, values and objects in one coherent whole. In the absence of a balanced and integrated view of technology, technology will not likely find its proper place within the human civilizing process. In other words, if we do not have the proper view of the world and of technology, it will be difficult to use technology to promote balanced development. As a result, tension will remain and misunderstanding will prevail over our relations and destination.

What is required today is not a reinvention of the wheel of technology. Rather, we must focus on dimensions of our worldview, culture, education and policies that embrace and develop technology within religious, moral, ethical and civilizational frameworks. Accordingly, changes should take place not only in our attitudes but also in our policies, laws, regulations and rules of engagement.

Re-inventing the balanced technological mind and culture

As a Muslim, I am very much aware of the inertial and negative elements of the contemporary Muslim mind and culture. The call to change the Muslim mind, attitude and culture is not only genuine but imperative. All partial and selective views of Islam that undermine its civilizational aspirations and dimensions need to be objectively addressed. All destructive views that are represented by minority voices in Muslim societies and that wrongly present Islam as an aggressive and destructive religion need to be rectified.

The battle within Muslim society needs to address the core problems of the Muslim culture and mind. For instance, in addressing the issue of terrorism, we should not simply employ mere cosmetic or ideological perspectives; we should deal with the underlying factors and causes that triggered the problem in the first place. We cannot isolate the issue of terrorism from its internal and external factors. The state of economy, democracy, social and human

rights, justice, distribution of wealth, poverty, health care, education and cultural environment within Muslim society need not be undermined while addressing the issue of terrorism. Similarly, external oppression, invasion of Muslim countries, Islamophobia, disrespect towards the Islam and Muslims and efforts to undermine the Muslim's civilization by some external powers need not be overlooked while dealing with the issue at hand. There is no doubt that all forms of terrorism and extremism are unacceptable, and that terrorism and extremism violate human dignity and civilization, but they must be stopped through proper, just and suitable means.

Indeed, it is our duty to help each other understand ourselves and others as we work together to create new structures for life. Both the Western world and the Muslim world need to change. There is no doubt that re-engineering the transformation plans will take time and will consume huge efforts but what is needed now is an initiation of real change, not cosmetic changes but real changes, changes that touch the core of our mind and our culture. Changing our minds, souls, characters, attitudes, cultures, relations, rules of engagement and policies are important, if not imperative. As such, scholars, both Islamic and Western, need to determine what is needed to ensure proper change. We need sincere changes that have an impact but that do not impose one worldview or way of life on others. We must acknowledge our uniqueness and differences but keep them at a level that still allows us to cooperate for the sake of God, humanity and the protection of our planet and civilization.

Conclusion

Evidently, the above elaboration has made it obvious that the Islamic worldview does offer a broader framework for civilizational development in general and technological development in particular. The significant teachings, values and guidelines pertaining to the empowerment of the self, the institutions, the community, the state, the culture and civilization provide strong evidence for the civilizational dimensions of the Islamic worldview. What we need is to understand the proper injunction of the Islamic worldview regarding the issue of technology and its articulation in our life. It is, therefore, important that additional studies highlighting the application of the Islamic worldview in all spheres of civilizational development, including the issue of technology, be conducted. All these efforts would contribute to the renewal of our intellectual, spiritual, social, cultural, technological and material dynamism. This, in turn, is likely to enhance our relations with others.

References

- Abu Ishaq al-Shatibi (not dated) *al-Muwafaqat fi Usul al-Shariah*, in Shaykh Abd Allah Diraz (ed.) *al-Maktabah al-Tijariyyah al-Kubra*, vol. 2, Cairo.
- Al-Juwayni 'Abd al-Mali Imam al-Haramayn (1399) *Al-Burhan fi 'Usul al-Fiqh*, Doha: Jami Qatar.
- Alal Al-Fasi (1956) *Maqsid al-shari'ah al-Islamiyyah wa makārimuha*, Casablanca: al-Najāh.
- Foltz, R.C. (2002) *Worldviews, religion, and the environment: a global anthology*, Belmont, CA: Wadsworth.
- Khaduri, M. (1984) *The Islamic Conception of Peace*, Baltimore, MD: John Hopkins.
- Schuurman, E. (2008) The Challenge of Islam's Critique of Technology, valedictory address, Wageningen University September 20, 2007, in *Perspectives on Science and Christian Faith*, 60 (2): 75-83; available at <http://www.asa3.org/ASA/PSCF/2008/PSCF6-08Complete.pdf>

Epilogue

Jan van der Stoep and Henk Jochemsen

On October 14, 2001, just a month after the terrorist attack on the World Trade Centre in New York, Jürgen Habermas delivered a speech entitled *Faith and Knowledge* after receiving the Peace Prize of the German Book Trade. In this speech, he argued in favour of an enlightened common sense that is fully aware of its own religious roots but, at the same time, searches for reasons that aim at universal acceptability. In our post-secular society, we have to adapt “to the fact that religious communities continue to exist in a context of ongoing secularization” (Habermas 2003: 104). As Bünyamin Duran noticed in his contribution to this volume, this creates a new openness for religious views in the secular democratic process. Secularization is not understood as a zero-sum game between modern science and technology, on the one hand, and the conservative forces of religion, on the other, but rather it is interpreted as a process in which religious intuitions are translated into secular terms. However, this requires, according to Habermas, that modern secular thought be aware of its own limits and be willing to learn from the spiritual potential of religious traditions. When it comes to matters of sin, culpability, forgiveness and suffering, secular thinking is still poorly equipped in comparison to the rich vocabularies of religious traditions.

The essays collected in this book, each in their own way, take up Habermas’ challenge. The authors have entered into dialogue with modern secular thinking about the role of science and technology and the way in which we can best approach the major problems of our global age, namely finance, fuel, food and security. At the same time, they maintain that religions like Judaism, Christianity and Islam feed on spiritual sources that are not available in modern humanist thinking. More than that, they maintain that those religious traditions incorporate an awareness of sacredness that can never be fully translated into secular terms, and that this awareness of sacredness is a key factor in solving current environmental problems. In this epilogue, we firstly discuss the unique way in which religious traditions can contribute to the dialogue about the role of science and technology in our modern global society. We then discuss some basic and inalienable elements of a religious worldview that cannot be fully translated into secular terms but, nevertheless, may enable us to develop a more respectful relationship with our ecological and cultural environment.

Religious voices in public discourse

How can religious voices contribute to the public debate about science and technology and what can be learned from them? That is the first question we would like to answer. Habermas holds that religious voices may only enter the public discourse when they restrict themselves in three ways:

Religious consciousness must, first, come to terms with the cognitive dissonance of encountering other denominations and religions. It must, second, adapt to the authority of the sciences which hold the societal monopoly of secular knowledge. It must, last, agree to the premises of a

constitutional state grounded in a profane morality. Without this trust of reflection, monotheisms in relentless modernized societies unleash a destructive potential (Habermas 2003: 104-105).

Habermas hastens to say, however, that also secular thought must be aware of its own fallibility. Citizens, whether they are believers or non-believers, all have to deal with the fact of worldview pluralism in a non violent way and that means without inflicting harm on people or imposing a certain way of life upon others.

To a significant extent, the contributors to this volume have conceded to the restrictions set by Habermas but they do have their reservations. The first restriction is the easiest. As Egbert Schuurman stated in his opening address, this compilation seeks to initiate cultural dialogue, in effect, a dialogue about the influence of science and technology on modern global culture and the problems and threats that are caused by the dominance of scientific and technicist thinking. The way in which Schuurman demarcated this cultural dialogue from an interreligious dialogue already demonstrates a willingness to find a common ground between the various worldviews without ironing out the irreconcilable differences. Several authors in this book have noticed that Schuurman, in his critique of modern global culture, borrows from neo-Marxist and phenomenological thinking. In addition, authors have also pointed out failures of their own religious traditions. Akgunduz, for example, analyzed early environmental concern in Islamic thinking while, at the same time, acknowledging that, nowadays, much of this concern has become lost in Islamic circles. The critique put forth by Lynn White and David Noble is considered by many of the authors to hold an element of truth even though their thesis as a whole is found to be unwarranted. Although both Christianity and Islam were major forces in the development of modern science and technology over the course of history and still today, they often have raised a critical voice and sometimes even a reactionary attitude to (certain aspects of) modern civilization.

The second restriction is more complicated and problematic. If adapting to the authority of science means that we cannot ignore empirical facts, the authors of this volume will all agree that this is very important. However, if it also involves the acceptance of a modern techno-scientific worldview, they will reject this demand. However, even Habermas himself does not go this far. He too rejects a strict scientist or naturalist perspective and holds that the scientific image of man, in which human beings are understood in a deterministic way, can never replace our everyday consciousness in which we hold people accountable for their actions. In this sense, Habermas' position comes quite close to the position of Bediuzzaman Said Nursi, to which several Islamic authors in this volume refer, and to the position of Herman Dooyeweerd who inspired several Christian authors in this volume. According to Nursi, we have to distinguish between technology as such and the modern technological world picture. Science and technology as such are just allies in the struggle against ignorance, poverty and polarization. It is, however, the unrestricted belief in the power of science and technology — driven by a naturalist worldview — that is causing the problems. Dooyeweerd holds that our everyday experience can never be destroyed or replaced by scientific thought. However, that does not deny that, over the course of history, our everyday experience has been influenced by the impact of science and technology on social life. The facts of science and the inventions of technology are not just theoretical abstractions but integrated parts of our daily experience that also transform our everyday life (Dooyeweerd 1969: III, 31).

The most controversial restriction is the third, namely that believers also have to agree with the premises of a constitutional state grounded in a profane morality. The sting of the argument is in the latter part, in the grounding of the constitutional state in a profane morality, which for Habermas is more than just a search for generally acceptable arguments. It is also the rejection of a final truth beyond human reason. According to Habermas, we not only have to accept a 'cognitive dissonance' between the various worldviews, we also have to accept the

democratic common sense as the last instance of truth. This means that religious arguments are valuable in as far and only in as far as they can be translated into secular terms. At this point, it is Habermas himself who ignores the irreconcilable differences between the various worldviews. In this case, the difference is between a secular worldview that is grounded on the autonomy of reason and the various religious worldviews that, in one way or another, accept the authority of the sacred. The public domain of Habermas is not just a neutral ground but a space that is impregnated by a secular worldview. This asymmetry becomes even more problematic when we realize that Habermas, by his demand to translate religious intuitions into secular thought, not only imposes his own secular worldview upon believers but also, willingly or unwillingly, robs himself of basic spiritual experiences that can never be adjusted to secular thought but are nevertheless possible crucial sources of inspiration for dealing with the problems and threats of our global technological society. The general thrust of this book is indeed that the various crises we face today are essentially spiritual crises that cannot be solved by reason alone.

Sources of inspiration

With the claim that the crises of our global technological society are essentially spiritual crises, we come to the second part of our argument. This is the thesis that religious traditions incorporate basic intuitions about life on this planet that cannot be translated into secular terms without losing their spiritual depth. What is not available in the mechanical metaphors of naturalism or in the discourse ethics of Habermas is the notion of life on earth as a gift. According to the three monotheistic religions, nature itself is not sacred but created by God and entrusted to us, fragile human beings. We not only owe it to our children to treat the world carefully so that they may inherit it in a proper state, we also owe it to the Creator of the universe. This cannot but fill us with a sense of awe and gratitude. It motivates us to develop an attitude of servitude rather than domination. Surely, this plea to put reason within the bounds of religion and not the other way around, as is the case in Enlightenment thinking, may be dangerous. Religious authorities may misuse the credulity of people and worldviews may clash. In accordance with Ulrich Beck (2008: 245-246), however, we hold that we cannot but trust in the willingness of the various world religions to cooperate in a common endeavour to seek peace and justice even when they disagree on matters of absolute truth. The outcome of this project — this book — is one of the signs that this hope is not altogether unfounded.

It has been encouraging to discover that, both in the Islamic and in the Christian tradition, there are various points of departure for viewing the world not as a lifeless material whole but as a communal home for plants, animals and human beings. This may function as a solid foundation for a shared cultural commitment. Egbert Schuurman already introduced the metaphor of the garden and, from an Islamic perspective, we can add the image of the world as a fabric that must be kept clean. Both the image of the world as a garden and the image of the world as a fabric presuppose a being that maintains order. In the first instance, this is, of course, God, the Sustainer of all creation but God also bestowed this task on mankind and has called men and women to be his stewards and vicegerents. Interestingly enough, in the Islamic tradition, the same image of a fabric is used to describe the inner nature of man. Following Said Nursi, Necati Aydin describes the human body as a palace with various residents. Another point of connection between Christianity and Islam is introduced by Gert Jan Segers who claims that both religions acknowledge the value of a relationship of trust between citizens — a covenant or social contract that makes mutual cooperation possible and may guarantee social peace.

Now, exactly what basic intuitions are involved in the religious images of the world as a garden or a fabric that become lost when we try to translate these images into secular terms? From the essays incorporated in this book, we learn that there are at least three basic religious intuitions of this kind. The Christian and Islamic scholars involved in this project have seen it as their duty to articulate them again and bring them into the public discourse. They do not pretend, however, that they have the exclusive right to develop and articulate a sensitivity for the sacred. On the contrary, they assume that the basic religious intuitions have an appeal to everyone and, although they cannot fully be translated into secular terms, that does not mean that the secular mind cannot develop a sensitivity for them or try to approach them in another way. When we finish this book with a description of those three basic religious intuitions, we are doing this with the expectation that, in this way, we open up new sources of inspiration that may help our global civilization in its search for a common future.

The first basic religious intuition that is incorporated in the image of the garden or the fabric is the intuition that life is a gift. As Abdul Majid and Fazli Karim point out in their essay, nature is full of signs (*ayah*) of God and, according to them, we may even hold that He is the real environment that surrounds men and women and nourishes their life. This is more than just a semantically rich way of saying that human life is an end in itself. It also goes further than the idea that nature has a value of its own that has to be respected. What is at stake here is that life points beyond itself to a Creator that gives meaning to life. Therefore, we are on holy ground. This, of course, must also have consequences for the way in which humans participate in reality. As Abdelaziz Berghout points out, technology must not be seen as just a means to control and regulate the world but as an instrument of worship, a ritual device with which we express our gratitude to the Creator of all. But Berghout would certainly also agree with René Munnik that technology as such will never provide an adequate answer to the human desire and longing for salvation and happiness. The benedictions for technical artefacts that are developed within the Roman Catholic tradition not only show that they have to be valued as something good but also that they have to be seen as something that cannot replace God as the Source and Origin of all. It is not mankind that gives meaning to the world but the world is already a precious and meaningful whole in which also human beings play their part. Put in other words, we can say that meaning precedes existence, not the other way around. This thought is humbling and leads us to acknowledge that we are creatures that are dependent upon a generosity that is beyond our imagination, a generosity offered by a source of life that guides us breath by breath and endows us with all kinds of precious talents.

Secondly, the image of the garden or the fabric presupposes that there is a moral order that has to be obeyed in order to live a peaceful life. From a modern secular perspective, regulations and boundaries are often viewed only as restrictions and limits to human freedom. When the freedom of one person inflicts harm on others and curtails their freedom, only then are regulations considered necessary. From the image of the earth as a garden or a fabric, however, we learn that life cannot do without the presupposition of an order. Without a fence, without borders and without careful cultivation, the flowers in the garden cannot flourish and strong weeds will overgrow what is vulnerable and precious. Keeping order is not predominantly an act of obedience but an act of love. A good gardener wants to do justice to the peculiar nature, individuality and uniqueness of the various materials, plants and animals in the garden. Especially in Islamic thinking, the sensitivity for order is very strong. Ahmed Akgunduz thoroughly demonstrates that the Qur'an and the Islamic tradition contain many practical dos and don'ts with regard to, for example, the use of water and the preservation of the environment. The same sensitivity for order is found in the writings of Berghout. Interestingly enough, he describes differences among people, languages, cultures and worldviews as a beautiful pattern created by God. This, for him, is a drive to approach the uniqueness of other people from a positive angle: they add to the beautiful diversity of creation. Two authors,

writing from a Christian point of view, however, wonder if the metaphors of the garden and the fabric are not too harmonious. Marc de Vries is quite critical towards the modern strive for perfection and holds that engineers as well as policy makers must reckon with the imperfections and finiteness of this world and the sinfulness of people while Munnik warns us that the appreciation we owe to nature as creation should not blind us to the fact that nature also is a battlefield of conflicting struggles for life in the Nietzschean sense of the world. It would be interesting to further study whether or not this is just a difference in nuance between various scholars or a reflection of a more profound distinction between Christianity and Islam.

Finally and in closing, we describe the third basic religious intuition that is threatened to become lost in secular thinking but that we, as religious scholars, want to rescue and put back on the table. It is the intuition that we, humans, are not autonomous beings and that we must understand ourselves in our relationship, first of all, to God and then to our fellowman, nature and our own inner self. Man is a steward of God who bears his image or, in other words, a vicegerent (*khalifa*). This means that we can only understand the human being in all its dignity and vulnerability as someone who is created in relationship with God and in relationship with the environment for which he has to care. Human beings are beings with a vocation, a call, and they cannot but give a response to this call. They have just two options: to affirm it or to reject it. This urges us to be fully aware of what James Clement van Pelt calls the critical frangibility of our global technological society. As Emin Akcahuseyin rightly pointed out, technology must not be an independent force but a force in the hands of mankind to serve the world around us. The use of technology has to be embedded in an ethics or system of values that is meant to protect and sustain life on this planet. Fortunately, we may still find remnants of this way of thinking about human responsibility in secular thought. For example, the writings of Immanuel Kant on man as a citizen of two worlds — the world of necessity and the world of freedom — clearly bears the mark of Psalm 8. The same is true for the notion of covenant that Gert Jan Segers speaks of. Habermas (2003: 108) fully acknowledges that his contractualist approach has religious roots. As humanity, we have a common moral duty to protect the world from destruction. We owe it to ourselves and to the world around us because we are called to be stewards and vicegerents of God. So let us join hands and face together the threats and problems of our common world.

References

- Beck, U. (2003) *Der eigene Gott. Friedensfähigkeit und Gewaltpotential der Religionen*, Frankfurt am Main: Insel Verlag.
- Dooyeweerd, H. (1969) *A New Critique of Theoretical Thought*, Amsterdam/Philadelphia: Presbyterian and Reformed Publishing.
- Habermas, J. (2003) *The Future of Human Nature*, Cambridge UK: Polity.

Short biographical notes of project participants

This book is the product of the ‘Structures for Life’ project initiated in the Netherlands by three Christian research institutes, namely the Centre for Reformational Philosophy, the Institute for Cultural Ethics and the Lindeboom Institute, in joint cooperation with the Islamic University of Rotterdam. A steering committee coordinated the project and comprised the following representatives from the above mentioned institutes:

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Hillie van de Streek is the director of the Centre for Reformational Philosophy (CRP). Her background is in European modern history and the political sciences. She has conducted research and taught European history and political communication at Utrecht University in the Netherlands and at Dordt College in Sioux Center, USA. She has been a publisher as well. At CRP, she is responsible for managing the Centre and for the strategic development of Christian and, in particular, Reformational philosophical thinking both within the Netherlands and internationally.

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Emin Akcahuseyin is a professor of biomedical ethics and spiritual counselling and vice-rector of the Islamic University of Rotterdam. Akcahuseyin was born in Turkey, studied applied physics at Delft University of Technology and became a medical and clinical physicist at Erasmus University's Medical Faculty in Rotterdam. At the same time, he studied internal medicine and became a doctor in the biomedical sciences. After a career in medicine, engineering and physics, he took his present position at the Islamic University of Rotterdam. As chair, he developed and established a graduate program in spiritual counselling from an Islamic perspective.

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Abdul Majid is the founding chair of two societies that endeavour to promote religion-science discourse and interfaith harmony in Pakistan, namely the Society for Interaction of Religion, Science and Technology (SIRST: www.sirst.org) and the Hazara Society for Science-Religion Dialogue (HSSRD: www.hssrd.org). Majid received degrees in molecular biology and Islam from Quaid I Azam University in Islamabad and Peshawar University, respectively. He has won the CTNS Science-Religion Award (2001) and the Development Course Award (2002) for his course entitled *Islam and Science on Evolution and Creation*. He also won eight presidential Seerat awards for his academic output between 1986 and 2009. He is an associate editor for the *Journal of Science-Religion Dialogue* and has published extensively on different aspects of religion and science. He has also authored three books in Urdu and has co-translated two books by Dr. John Haught's from English to Urdu.

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