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Arabic	Roman		Arabic	Roman
ب	b		ط	ṭ
ت	t		ظ	ẓ
ث	th		ع	‘
ج	j		غ	gh
ح	ḥ		ف	f
خ	kh		ق	q
د	d		ك	k
ذ	dh		ل	l
ر	r		م	m
ز	z		ن	n
س	s		ه	h
ش	sh		و	w
ص	ṣ		ء	’
ض	ḍ		ي	y

Transliteration Table: Vowels and Diphthongs

Arabic	Roman		Arabic	Roman
اَ	a		اَ، اِيَّ	an
اُ	u		اُو	un
اِ	i		اِي	in
اَ، اِ، اِيَّ	ā		اَو	aw
اُو	ū		اَي	ay
اِي	ī		اُو	uww, ū (in final position)
			اَي	iyy, ī (in final position)

Source: ROTAS Transliteration Kit: <http://rotas.iium.edu.my>

The Authenticity of Theology in Scientific and Technological Thinking

Anhar Anshory*

Ahmad Faizuddin Ramli**

Ramli Awang***

Abstract: The deprivation of knowledge from the bond of true belief will destroy and ruin human life and nature. This has been demonstrated in the Western scientific and technological civilisations that dominate the world today. Western scientific civilisation today is the product of scientists who have no real faith in the Creator of the universe. Nevertheless, there are efforts among Western scientists who have awareness in this modern era, who began to take steps to restore the agenda of Science and Technology within the framework of religious beliefs. This literature-based study discovers many negative effects resulting from the absence of true theology in understanding Science and Technology, which is based on a secular understanding. Apart from that, this article also reveals the nature and appearance of Science and Technology that are firmly embroidered with natural theology leading to universal well-being.

Keywords: Theology, Science and Technology, modern science, Muslim society, *Tawhidic* science

Abstrak: Kurangnya pengetahuan dari sistem teologi yang benar akan memusnahkan kehidupan manusia dan alam yang dibuktikan dalam tamadun sains dan teknologi Barat yang mendominasi dunia saat ini. Ironinya, tamadun

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sains Barat ketika ini merupakan produk ilmuwan Barat yang tidak memiliki asas keimanan yang sebenar kepada Pencipta alam semesta. Meskipun demikian, terdapat usaha dalam kalangan ilmuwan Barat yang memiliki kesedaran untuk mengembalikan agenda sains dan teknologi dalam kerangka kepercayaan agama. Kajian berasaskan kepada tinjauan literatur ini menemui banyaknya kesan negatif yang terhasil daripada ketiadaan teologi yang benar dalam pemikiran saintifik dan teknologi, yang didasarkan pada pemahaman sekularisme. Selain itu, artikel ini juga menonjolkan sifat dan ciri sains dan teknologi yang didasarkan kepada teologi fitrah semula jadi yang mengarah pada kesejahteraan universal.

Kata kunci: Teologi, Sains dan Teknologi, Sains moden, Muslim, Sains Tauhidik.

Introduction

Today, human life enjoys many benefits due to the progress and development of knowledge (Science and Technology, S&T) sourced from the West. Within the limitations of its scope, science is unlikely to answer all the questions that arise (John Malone, 2001). This is generally understood and accepted. On the other hand, there are undesirable elements in science that include the destruction of human nature (*tadmir al-insān*). This is because Western Science and Technology have lost the value of theology as the core of human spirituality. Solihin (2004), in his argument on the importance of *Sufistic psychotherapy*, displayed the description of many human bodies today that have lost their “souls.” Their lives and existence are not much different from robots. Such depiction is being referred to the writings of, among others, Lewis Yablonsky (1924-2014), a behavioural science researcher in his book *Robopath* (1972), Ashley Montagu (1905-1999) and Floyd Matson in *The Dehumanization of Man* (New York: McGraw-Hill, 1983), and Erich Fromm (1900-1980) in *The Art of Loving* (1956). According to Solihin (2004), human tendency in this modern century is experiencing mental instability due to being alienated by a way of thinking and working that must be efficient, orderly, predictable, and mechanical.

Then came a “new human” whose character is like a robot. Yablonsky sees people as machines, a “Robopath” – a cruel creature, easily aggressive and devoid of feelings. This robopath personality is characterised by automatic behaviour (rigid obedience, dry from

emotion, not spontaneous, and very obedient to authority). *Robopath* personality gave birth to two ends of truly tragic life attitudes, namely:

1. *Malevolent robots*, i.e., “undead,” like characters that roam everywhere in search of cruel prey (zombies); and
2. *Cheerful robots*, that is, the attitude of people who overcome their existential anxiety (from this living corpse) with hedonism in the fields of entertainment and sensual pleasure, especially sexuality. As a result, self-identity is lost, dissolved in violent, unfeeling, and hedonistic-sensuality attitudes to the point of self-forgetfulness. Here, it is clear that one’s spirituality is completely destroyed. Therefore, the effort to re-function one’s spirituality is almost the only therapy (solution medicine).

The above comment explains that human beings, whose souls are empty of having faith in God or a faith that is not firm, will act beyond the limits of humanity. Their actions are not based on the commandments of God, but according to their own lusts. This is so because human souls that are empty of faith should be filled with the clarity of the souls. Man, whose soul is filled with the values of faith, will shape Science and Technology towards universal harmony and submit to the will of the Creator.

Definition of Authenticity Theology

The definition of authenticity theology derives from the word of “authenticity” and “theology.” Generally, the word authenticity refers to the “quality of being genuine or real.” The word authenticity also is the state of something being authentic or legitimate and true. Authenticity is important when the value of something is dependent on where it comes from or how it is made. The concept of theology in Islamic tradition targets one’s life actions in a true, authentic, honest, and clear way; whatever is done in this life is based on commands and prohibitions from God. The implementation of theology in Science and Technology lead into harmony, love, equality, justice, and compassion. In contrast, Science and Technology without theology lead to universal destruction, offer opportunity and space to rebel against God, and as such, are out of the authentic concept of theology.

In Qur’anic terminology, theological authenticity refers to the believers as *mu’minūna ḥaqqan* [*al-Anfal*, 8: 4]; *al-Ṣādiqūn* [*al-Hujurat*,

49:15]; *al-Muslimūn* [Āli ‘Imran, 3:102; al-Ahzab, 33:35] with their respective characteristics. Opponents to them are *kāfirūna haqqa* [al-Nisa’, 4:151], *munāfiqūn* (al-Munafiqun, 63: 4) and *fāsiqūn* (al-Anfal, 9:67; al-Hasyr, 59:19) with their respective characters. True Muslims and believers are human beings who spread the truth of Allah and keep to His commandments. They prevent others from bad things. Those who disbelieve, deviate, are hypocrites and wicked, forget God, do not obey the commandments of God, and do damage to man and nature.

The Prophet (p.b.u.h.) elaborates the good Muslims’ qualities as in the following narration: al-Bukhari in *Sahīh al-Bukhāri* [no. 10,11, 6484] and Muslim in *Sahīh Muslim* [no. 40, 41, 42] reported, the Prophet (p.b.u.h.) said: “[a] Muslim is a person who protects others from the disorder of his tongue and hands.” Al-Tirmidhi in Sunan al-Tirmidhi [no. 2329] reported: From Abdullah bin Busr, an Arab asked: “O Messenger of Allah! Who is a good person? The Prophet said: “[p]eople who are long-lived and do good deeds.” al-Bayhaqi in *Syu‘ab al-Iman* [no. 7578] narrated, a woman asked: “O Messenger of Allah! Who is a good person? He said: Those among you who are most pious to Allah, connect the cords of brotherhood, enjoin what is good (ma‘rūf) and forbid what is evil.”

The good deeds accepted by Allah are those based on pure faith without being tainted with the elements of idolatry (*shirk*), whether hidden or real. In different terms, human behaviour that is not based on theological authenticity will result in calamity and destruction to himself, man, and nature. Man’s deviation from the hold of theological authenticity makes the invention of technology unfit for the purpose of peace. In weapons technology, the invention is to provoke war and make a profit. Without war, weapons will be abandoned. Security creates a total loss. Thus, chaos, unrest, and fear should be created for the sale of arms trade. This fact was mentioned by Matthias Chang (2005): “[w]ar is a big business. Retired US Admiral Gene La Rocque remarked: Military product is manufactured primarily not for the defence of the USA or of any other country, but merely for profit.”

Humans who do not have real faith will use the technology of their creation as a means of murder and tyranny. According to a study conducted by one of the Vietnamese scientists, Dr. Nguyen Viet Nhan, children in areas affected using Agent Orange were identified to have

health problems, including cracked palates, mental defects, hernias, and excess on fingers and toes. In the 1970s, dioxin levels were found in the breast milk of South Vietnamese women and in the blood of U.S. military members who had served there. The most affected zones were the mountainous areas along the Truong Son (Long Mountains) and the border between Vietnam and Cambodia. The population involved lived in substandard conditions with various genetic diseases.

The True Face of Western Science

In August 1925, Alfred North Whitehead (1861-1947) wrote an article entitled Religion and Science in *The Atlantic*. In the paper, Whitehead (1925) asserted that the religion will not regain its old power until it can face change in the same spirit as science does. The statement gives an understanding of science and theology each has different directions in the debate of knowledge about science (*‘ilm*) in the Western world. There is really no need for intense debate and scientific evidence to convict the conspicuous negative impacts of modern scientific activity today. Expressions for the sake of a sense of frustration with Western science are spoken by scholars. Among them, Hoodbhoy (1992) noted the existence of criticism of science in the past with the assumption of damaging religious morality. According to him, the level of public frustration in science today is even worse (on a larger scale) than before.

Comments on the same matter made by several Western scholars (Crosby & Smith 1998) are increasingly convincing. According to them, the philosophy of the modern Western science development has now lost the value of human nature. In other words, the value of pure faith, which is the pillar of human glory, is no longer possessed by them. The loss of confidence in the sense of God’s oversight in the life of the modern world of science now causes it to be traded in the name of the pursuit of materialism. Through faith in the supernatural God, scientists can achieve their identity. In fact, this will make them active beyond the real world which directly prevents them from acting outside the limits of their monotheistic beliefs. Their search and hope for the reward of pious deeds in the hereafter will cleanse all the activities of their sponsored S&T from the elements that are deemed to be *fasād fil arḍ* (damage on earth). The value of the hereafter is more meaningful to them than the temporary world in the form of *lahwun wa la’ibun* (jokes and toys).

Islam, as a religion based on the purity of theology, has in its teachings the harmony between science and religion. Meanwhile, this feature does not exist in any belief system of human creation. This has coloured the whole world under the touch of unity (monotheism). The assertion highlighted by Osman Bakar (2014) in this case further reinforces what was stated. He asserted that in Islam, the idea of harmony and unity of religion and science is very much cherished. The harmony between religion and science is a major characteristic of Islamic civilisation. In Islamic civilisation, science was born in the cradle of religion. More precisely, it was born in the cradle of monotheism – belief in the one true God – or what Muslims traditionally love to call *tawhīd*, which literally means “unity.” This situation is different from the Western world where their lives are not based on theology. Some use technology in order to build hostility and fear against Islam.

The hatred against Islam and Muslims is embedded in the latest communication technology. Jack Shaheen (2012), through his observations, highlighted how America has been projecting a frightening bad image of Islam through films and other mass media tools for so long. This is seen as part of an effort to remove God from life and to directly develop the concept of “deifying science,” or that science is indirectly forced to replace religious beliefs. This was voiced by Ziauddin Sardar (1989) when he explained the fundamental differences between Western science and Islamic science. Scientists who support atheism will do anything to achieve what they want. There is no inner shield of the self that prevents them from acting non-humanist. They have no divine or humanitarian agenda. The agenda they have is temporary material gain, fame, and praise, aside from the gratification of worldly lusts. It is this catastrophe that is gripping the world of modern Science and Technology today.

***Tawhīdic* Scientists**

Scientists involved in research on the phenomena of nature are not able to explain the truth about them unless they first accept and acknowledge that nature has its owner. The rejection of this fact and putting nature as a natural phenomenon without an owner creates lacunae in their thoughts. Despite the various achievements in the field of Science and Technology, these scientists failed to connect the phenomena of nature

with the reality of absolute truth. This is different from Muslim scholars who believe and seek the truth in their studies.

This fact can be exemplified from the confession of Abu Raihan al-Biruni (973-1048), an expert in the fields of astronomy, mathematics, Islamic law, language, theology, medicine, and other fields of science. TRT World published an article written by Ufuk Necat Tasci (2020) in connection with al-Biruni's dedication to exploring knowledge in the field of science:

[m]y experience in the study of astronomy and geometry and experiments in physics revealed to me that there must be a planning mind of unlimited power. My discoveries in astronomy showed that there are fantastic intricacies in the universe which prove that there is a creative system and a meticulous control that cannot be explained through sheer physical and material causes.

The words spoken by a Muslim scholar in the 11th century are similar to a discourse of another Muslim scholar in the 20th century. Muhammad Javad Bahonar (1985) notes, the systematically ordered universe can help mankind to know God who is all-wise and all-powerful. Every phenomenon in this world is the result of a certain and reasonable cause that already exists in nature, and the incarnation of all those phenomena is in accordance with the will of God. Observations and research on nature are highly emphasised by the Qur'an as a revelation from Allah. Such studies will generate knowledge of Science and Technological design for human well-being. According to Khawaja Abdul Wahid (1978), the Qur'an introduces to the world "the idea of the law and order of nature, connects natural phenomena with material causes, instils the spirit of rational thinking, encourages direct study of nature through observation and experiment, produces the universal desire of scientific study with the call of *tafaqquh*, *tafakkur* and *ta'qqul*, and this paves the way to the right way of understanding nature and natural phenomena."

The above statement shows how the development of science in Islamic civilisation is not hindered by religion. Islam itself serves as a catalyst to the development of science, unlike the role played by Christian religious institutions in Western Europe. Based on the spirit of revelation that calls for the use of reason, it is this that has led to the development of Science and Technology in Islamic civilisation. Muslim

scientists have a pure agenda to dedicate themselves to God and uphold the status of “the caliph of God on earth” (*khalifatullah fil Ard*). Such scholars are able to understand and respect nature according to the will of the Creator – Allah.

Although the Western world has achieved great advancement in Science and Technology, such progress is detached from theological ties. In this regard, A. Khudri Soleh (2004) notes, although what modern (Western) science has achieved in its various aspects is something amazing, the progress also turned out to have terrible impact. According to al-Faruqi (1921-1986), as a result of the secular paradigm, modern knowledge became dry, even completely separated from monotheistic values; a global principle that encompasses five units, namely the unity of God, the unity of nature, the unity of truth, the unity of life, and the unity of mankind. Clearly, modern science has detached from theological values (A. Khudri Soleh 2004).

Islamisation of Science

In view of theological deficiencies in modern science, scholars try to find a formula to justify the shortcomings. Some of them look at it from the point of view of science, which touches on aspects such as thought, philosophy, epistemology, paradigm, and conceptual errors. It is clear that humanities (science) aspects are the target. Meanwhile, others see that the factor stems from the individual scientists themselves (human). Therefore, the individual needs to be justified. Whatever the debate is about, the main thing is that their direction is to fix the shortcomings that are going on. Thus, both human and humanity aspects can be discussed to repair the failures of modern Science and Technology today. Furlow (2005) stressed that although they have different tendencies based on different expertise and backgrounds, the ideas should not be set aside for the benefit of the people. Scholars such as al-Faruqi, Naquib al-Attas, Osman Bakar, Wan Mohd Nor Wan Daud, and a few others saw the need for the Islamization of this knowledge (Furlow, 2005).

For example, Naquib al-Attas saw modern thinking and knowledge as having a negative effect due to inhaling knowledge from various conflicting sources and rejecting revelations. So, he stressed the need for knowledge to be guided in accordance with God’s teachings. He reminded that the main problem of Muslims is “the problem of knowledge.” In his works, since the early 1970s, Naquib al-Attas explained the basics of

ontological, epistemological, ethical, and cultural differences between Islam and the dominant secular West. For that, a discourse was held on de-westernisation and de-colonisation through the current Islamisation of knowledge project. For al-Attas, Islamisation is an effort to free human beings first of all from the magical tradition, myth, animism, national culture, and then free from the secular snares that shackle the mind and language. Muslims are people whose intellect and language are no longer controlled by magic, myth, animism, and nationalist and cultural traditions. This is the difference between Islam and secularism (Furlow, 2005).

Osman Bakar (2008) in this case had a view that is not much different from al-Attas. A compilation of his writings published under the title *Tawhid and Science: Islamic Perspectives on Religion and Science* emphasises on the close relationship between the concept of the Oneness of God (*tawhīd*) and science in the Islamic tradition. This is what led to the excellence of Islamic science. The impact of Western sciences is affected by thought alone and in a limited dimension of its scope. It grips the whole of life, especially the Muslims. Aspects of westernisation and colonialisation in new forms can emerge through the framework of applied Western sciences. Avoidance of such elements is necessary. Therefore, according to Wan Mohd Nor, the goal of de-westernisation, de-colonisation, and Islamisation of current knowledge and education should focus on the formation of the right human beings who will perform various roles in the society. The projection of de-colonisation, de-westernisation, and Islamisation is not merely a reaction to non-Islamic external conditions. Still, more importantly and fundamentally, it is a return to the original human purpose and nature that lead man to the goal of receiving and disseminating knowledge, meaning, and purpose (Hashim & Rossidy, 2000). Education deals with the formation of good and civilised human beings. Strictly, civilised human beings are those who have faith and bring the divine message into the life of mankind.

Indeed, the explanation of this Islamic education expert is very important to be reflected in order to evaluate and continue to strengthen the Islamisation of science. Although there are still ongoing debates on the idea of Islamisation of science and steps towards realising it, in general, this idea has its own importance at making a change in the paradigm of Science and Technology in the Islamic world today. The

universal nature of Islam allows Western Science and Technology to be aligned with Islamic spiritual values although at the same time, it may invite prejudicial reactions to non-Muslims, especially in a world situation that is overshadowed by Islamophobia and Islamic demonological movements in the Western world (Ramli Awang et. al, 2012).

Therefore, the steps towards “humanising” science also needs to be undertaken. This means that the Western world needs a comprehensive awareness that the insecure situations they have created themselves need immediate change. Supposed the offer of “Islamisation of knowledge” invites suspicion to the West, in that case, science which is based on divine theology should replace the emptiness of Secularism, Darwinism, Atheism, and Materialism. Indeed, Science and Technology need to move in line with religion in order to create a balanced dynamic between knowledge, faith, and deeds.

When human beings do not have a deep faith in God, the knowledge they possess with the support of available technology will create something that is immoral. Among the examples is toxic elements in baby food (Škrbić et al, 2017). The question is, has the world today run out of raw materials to produce baby food? Or what is the reason that drives people to think of including toxic elements into a baby food? And what is the value of such-minded human beings in the world of Science and Technology? It is the purpose of human life in the world to enjoy peace and security. These are the two important agendas in human life that every human being, government, political party, and organisation that exists wants to achieve.

Science and Technology: A Lesson from the Islamic Republic of Iran

Islam emphasises on the need to seek knowledge in a broad sense (Hussain & Ramli, 2020). Today, the Muslim community is gradually showing a high interest and awareness towards a revival in the field of Science and Technology, and a new spirit is also emerging in certain countries inhabited by Muslims. For example, the Islamic Republic of Iran is one of the Muslim countries at the forefront of scientific and technological achievements. The history of such success was recorded after the Science education curriculum modelled after the American approach during the Shah’s regime was replaced with the

Islamic approach after the 1979 revolution. While Shi'ite theology, as the dominant Iranian Muslims' theology, deviated from the authentic Islamic theology, the Iranian case suggests that de-secularised science education is equally able to compete with Western science.

Data in *Science-Metrix in 2010* placed Iran as the top country in scientific growth rate with scientific productivity 11 times faster than the average world growth of 2009. Iran's total scientific output per year has surpassed the scientific achievements of countries like Sweden, Switzerland, Israel, Belgium, Denmark, Finland, Austria, and Norway. The report's author, Eric Archambault, asserted: "Iran is showing the fastest worldwide growth in science." He also explained that Iranian publications are abundant in the fields of nuclear Science and Technology, particle physics and organic chemistry at a speed of 250 times the world average growth. Iran's reach is also growing in medicine, agriculture, aerospace, computers, nanotechnology, genetic engineering, stem-cells, and cloning technology. *Thomas Reuters' Science Citation Index (SCI)* reported that Iranian Science and Technology articles increased 123% between 1995-2005 (Soofi & Goodarzi, 2016).

The other Science and Technology productivity data analysis board, MoSRT, examining the growth in the number of articles of Iranian scientists in international journals, found that the publication of research results of Iranian scientists experienced the fastest growth in the world. Despite facing the difficulties of sanctions and Western hostility, scientific articles through international collaboration increased dramatically. In 1998-2008, Iranian scientists published nearly 14,000 articles in international journals. Research conducted by *The Institute for Scientific Information (ISI)* recorded a drastic jump in the scientific productivity of Iranian researchers and scientists after 30 years of Iranian Islamic Revolution. Between 1990 and 2008, Iranian scientists have published a total of 60, 979 scientific articles in major international journals (ISI). There was a sharp increase in the following years, namely 15,000 (2009), 18,000 (2010), and 33,000 (2011) (Heriyanto, 2013; Soofi & Goodarzi, 2016).

The achievements of Iranian scientists and researchers were also recognised by the British Royal Society (Matin et. al, 2021; Bonakdarian, 2010). This world-renowned scientific community mentioned that a number of developing countries such as Iran, China, Brazil, Turkey, and

India have been rivals for previous scientific superpowers, namely the United States, Western Europe, and Japan. The Royal Society, among others, cited its report on the revenues of world countries from 1993-2004 in scientific publications and budgets for scientific research and development. The findings were so encouraging that Iran was listed as the fastest developing country in the field of science. Year 1996 recorded Iran producing only 736 scientific articles, but in 2008 it produced 13,238 scientific articles. This means an increase of 18 times. In data released by the *Dutch Scopus Database*, which examined statistics on scientific journals around the world (January-August 2012), Iran is placed 16th in the world ahead of developed European countries, such as Switzerland, Russia, Austria, and Denmark; Iran ranked fifth after China, Japan, South Korea, and Taiwan in Asia; surpassing all Middle Eastern regional countries, including Turkey and in fact, Iran is the top country in the Islamic world in scientific achievement.

Akhondzadeh et al. (2017) reported that over the past decade, Iran had achieved significant success in medical science. Based on Scopus index, Iran ranked first in the publication of scientific papers and the number of citations in the region, as well as all Islamic countries. In addition, 2% of the world publications are owned by the Islamic Republic of Iran. On innovation, the number of Iranian patents submitted to the United States Patent and Trademark Office (USPTO) was three and 43 respectively in 2008 and 2013. During these years, there was an increase in the number of staff in the Science and Technology sector, including postgraduate students, researchers, and academics at the University of Medical Sciences (UMS). Female students in Medical Sciences account for about two-thirds of all students. Also, women make up about one-third of the faculty members. Over the past five years, Iran has had growth in Science and Technology parks. This achievement was gained even though research spending in Iran is still very low (0.5% of gross domestic product [GDP]) due to economic difficulties and sanctions.

Based on a report published in *Science and Technology in Iran: A Brief Survey of Iran 2019*, it stated: "Iranian universities and research institutes conduct over 3700 doctoral dissertations related to nanotechnology and more than 16,200 master's theses." In another development, the Number and Rank of Iranian Nanotechnology ISI Articles in the World (2001-2017) showed a significant increase. In 2001, the number of articles was ten at a ranking of 57. In 2010, the

number of articles was 2019 with a ranking of 14. While in 2017, the number of articles was 9,360 and in the fourth position (Akhondzadeh et al. 2017).

Currently, there are 25 active biotechnology S&T parks and incubators across the country. Five specialised biotechnology incubators have also been established in Iran. Besides, 527 biotechnology companies have been registered, of which 211 companies are placed in 20 S&T parks and scientific research towns. The Iranian biotechnology companies produce more than 230 types of biotechnology products. This wide variety of products include recombinant medicine, monoclonal antibodies, organic phosphate, and nitrate fertilizers (in both solid and liquid forms), and biotechnology-related equipment. Almost 30 percent of the Iranian biotechnology companies are qualified to export their products. Over 50 types of Iranian biotechnology products are exported to other countries. Moreover, 81 universities and 18 research centres and institutes are engaged in biotechnology research and training in Iran (Akhondzadeh et al. 2017). Also, there are 24 specialised research centres conducting biotechnology-related research in the country, including 15 research centres affiliated to the Ministry of Science, Research and Technology; seven research centres affiliated to the Ministry of Health and Medical Education; and two research centres affiliated to the Academic Center for Education, Culture, and Research (ACECR). (Iranian Technology and Innovation Development Institute, 2017)

Recent developments reported that there are 25 active S&T biotechnology parks and incubators nationwide. Five specialised biotechnology incubators have also been established in Iran. In addition, a total of 527 biotechnology companies were registered, of which 211 were located in 20 S&T parks and scientific research cities. Iranian biotechnology companies produce more than 230 types of biotechnology-based products. The range of these products includes recombinant drugs, monoclonal antibodies, organic phosphate, and nitrate fertilizers (in both solid and liquid forms), and biotechnology-related equipment. Nearly 30 percent of Iranian biotechnology companies are eligible to export their products. More than 50 types of Iranian biotechnology products are exported to other countries. Currently, there are 81 universities and 18 research centres and institutes involved in biotechnology research and training in Iran. In addition, there are 24 specialised research centres conducting biotechnology-related research

in the country, including 15 research centres affiliated with the Ministry of Science, Research and Technology; seven research centres affiliated with the Ministry of Health and Medical Education; and two research centres affiliated with the Academic Center for Education, Culture, and Research (ACECR) (Akhondzadeh et al. 2017).

Western World Awareness

There is a new awareness in the West of the need for a relationship between science and theology. This situation arose in the 1970s. At first, several scientists gathered to discuss the connection between science and spirituality. The association eventually became a movement with the construction of several centres and organisation of a series of seminars. This effort is known as building a bridge between science and theology (Dillenberger, 1973). John Milbank (1952-) argues that the Western world's secularisation and the subsequent divorce of scientific and technological endeavours from religious beliefs have had profound implications for contemporary society. One of Milbank's central assertions is that the separation of science and technology from theology leads to a fragmented understanding of the world. By disregarding the spiritual dimensions of human existence, scientific and technological thinking tends to reduce reality to its materialistic aspects. This reductionism disregards the profound metaphysical questions that theology seeks to address.

According to Milbank (2006), this reductionist approach can lead to a loss of meaning and purpose in human life, as well as a disregard for the ethical and moral implications of scientific and technological advancements. Moreover, Milbank emphasises the need for a reintegration of theology into the realms of science and technology. He advocates for an approach that acknowledges the interconnectedness of knowledge and recognises the importance of theological perspectives in shaping scientific and technological endeavours. By reestablishing this connection, Milbank argues that a more holistic and comprehensive understanding of the world can be achieved. In the context of the discussion of Western scientific civilisation, Milbank's ideas highlight the potential negative consequences of divorcing scientific and technological thinking from theological considerations. The absence of true theology in understanding science and technology, as often based on a secular understanding, can lead to various detrimental effects. These

effects include a diminished sense of purpose and meaning in human life, an ethical vacuum in scientific and technological advancements, and a fragmented understanding of reality.

Another scholar who shares Milbank's views regarding the integration of theology and science is Alister McGrath (1953-). McGrath, a theologian and scientist, advocates for the integration of theology and the natural sciences. He emphasises the compatibility of faith and reason, suggesting that both realms can enrich one another and contribute to a more comprehensive understanding of reality. McGrath (2003) argues that theology and science address different aspects of human experience and should not be seen as opposing disciplines. Instead, he proposes that they can mutually inform and enhance each other. He emphasises the importance of recognizing the limits of scientific inquiry and the need for philosophical and theological reflection to address questions beyond the scope of empirical science. Furthermore, McGrath (2019) highlights the role of theology in providing a framework for understanding the meaning and purpose of scientific discoveries. He argues that theological perspectives can offer insights into the ultimate significance of scientific findings, providing a broader context for their interpretation and application. Considering Milbank and McGrath's insights, it becomes evident that efforts are required to restore the agenda of science and technology within the framework of religious beliefs. By recognising the inherent connections between theology, science, and technology, we can foster a more comprehensive and holistic approach that promotes universal well-being.

There are three organisations established to build relationships between science and divinity-based spiritual values. Firstly, the Center for Theology and the Natural Sciences (CTNS) in Berkeley, California. This center promotes the creative mutual interaction between theology and the natural sciences through research, teaching, and public service (Davison, 2022). Such was the case when Robert J. Russell and some of his colleagues began to realise the flaws of the modern philosophy of science in the West. They see the initial catastrophe that befell the world of Western science as due to the rejection of revelation and the spiritual aspects. This heritage is partly and still firmly ingrained in the tradition of modern Western science. For that, Western science had to be reconnected with religion and awareness in that direction had begun to be felt by some scholars. Secondly, The Foundation for Science, Technology, and

Civilization (FSTC) in the UK. The organisation focuses on the legacy of Science and Technology in Islamic civilisation. FSTC also seeks to correct social and cultural misconceptions by providing professional expertise to Muslim and non-Muslim institutions. It is internationally recognised as the expert in Islamic scientific and technological heritage issues. Thirdly, the Center for Sacred Sciences (CSS) in Eugene, Oregon. The centre aims to assist individuals seeking the spiritual aspects of life. Apart from that, it also seeks to cultivate a new worldview in which the dimensions of spiritual and scientific truth are seen as two different but complementary ways of describing a single fundamental reality.

The Concordance of Science and Divine Revelation

In the Islamic view, science and Divine Revelation have never been in conflict. Its historiographical aspect reveals that this knowledge is part of the teachings brought by the previous prophets to realise the will of Allah: “*innī jā’ilun fil ardhi khalifah*” [I am going to place on earth a caliph – al-Baqarah, 2: 30]. Contemporary Islamisation of knowledge injects “spirit” into knowledge (science) and instils human qualities in it. The growing awareness that is taking place in the West today in an effort to build a bridge between science and theology (religion) should not be underestimated. Muslims do not need to build such bridges because science is part of the teachings of Islam. The Qur’an as the verses of *maqru’ah* (recitation) never contradicts the verses of *manzūrah* (observation). The time has come for Muslims to seek and restore the glory of their scientific civilisation in facing the global challenges of modern science that have lost their direction.

Muslims need to prepare themselves with all the strength they have to face the challenges of the modern world which is increasingly heading for destruction as a result of human disobedience to God. The Western world which is now facing a crisis can no longer hope for anything else in leading the world of modern Science and Technology, especially in the field of values because it decouples values from science. The need for a science based on revelation and human nature should be highlighted to the world as a new alternative (Seyyed Hossein Nasr, 1993).

Conclusion

Disengaging knowledge from the bond of theology will destroy and tarnish human life and nature. Western scientific and technological

advancement, rooted in secularism and atheism, have demonstrated this. In contrast, the Islamic tradition emphasises that the authenticity of theology in scientific and technological endeavours cannot be achieved except by referring to the divine source. In addition, the Qur'an enjoins a strong relationship between science and theology. Muslim scholars who integrate science with theology, with reinforced purpose of serving humankind while fulfilling their divine purpose can lead a revival of Islamised, de-Westernised and decolonised knowledge. In doing so, authentic theology will regain its rightful place in Science and Technology.

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