



# al-Burhān

JOURNAL OF QUR'ĀN AND SUNNAH STUDIES

VOLUME 2, NUMBER 1, JUNE 2018



INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

eISSN: 2600-8386



# al-Burhān

*Journal of Qur'ān and Sunnah Studies*  
*Kulliyyah of Islamic Revealed Knowledge and Human Sciences*

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**Volume 2**

**1440/2018**

**Issue No. 1**

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**ISSN 2600-8386**

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### **Published by:**

IIUM Press, International Islamic University, Malaysia  
International Islamic University, Malaysia  
P.O Box 10, 50728 Jalan Gombak,  
Kuala Lumpur, Malaysia  
Tel: (603) 6196-5014, Fax: (603) 6196-6298  
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## INTEGRATION OF THE QUR'ĀNIC WORLDVIEW WITH NATURAL SCIENCE: ANSWERING THE LONG CALL FOR ISLAMIC SECONDARY SCHOOLS<sup>1</sup>

تكامل بين نظرية قرآنية وعلوم طبيعية:  
إجابة مكاملة الطويلة للمدرسة الإسلامية الثانوية

Nur Jannah Hassan<sup>2</sup>

نور جنة بن حسن

**Abstract:** Integration has been a key concern in the education of the *ummah* since the post-colonial period that have left Muslims with the legacy of a dichotomous education. Today, we see many Islamic schools with different modes of integration. But what constitutes as integration? How much have Muslims progressed towards true integration? This article presents a brief qualitative report on the findings from field researches that probed into samples of integration at 24 Islamic secondary schools in Malaysia and Indonesia (and surveys in Brunei, Singapore, Mindanao, Southern Thailand and Ontario) comparing with the ideal where integration constitutes an organic fusion between revealed and acquired knowledge. The article skims through the worldviews that have brought about natural science to its current plinth. It proposes a model for Islamic secondary education where natural sciences undergo a discreet but holistic reconstruction, redefinition and redirection from the framework of the Qur'ānic worldview.

**Keywords:** worldview, integration, natural science, Western modern science, *ulū'l-albāb*.

**Abstrak:** Kesepaduan adalah isu utama pendidikan ummat sejak zaman pasca-penjajahan yang telah meninggalkan warisan pendidikan berdikotomi. Hari ini, kita lihat banyak sekolah Islam dengan kepelbagaian cara penyepaduan. Tetapi apakah sebenarnya kesepaduan di dalam pendidikan Islam? Seberapa manakah umat Islam telah maju ke arah kesepaduan sebenar? Penulisan ini membentangkan suatu laporan ringkas kualitatif penemuan dari penyelidikan di lapangan terhadap beberapa contoh penyepaduan di 24 buah sekolah menengah Islam di Malaysia dan di Indonesia (serta tinjauan-tinjauan di Brunei, Singapura, Mindanao, Selatan Thailand dan di Ontario) berbanding dengan kesepaduan ideal yang merupakan gabungan organik antara ilmu wahyu dan ilmu manusia. Penulisan ini mengimbas pandangan-pandangan alam yang telah membawa sains tabii ke pentas semasa. Ia mengutarakan sebuah model untuk pendidikan Islam menengah, di mana sains tabii menjalani pembinaan, pentakrifan dan pengalihan-arah semula yang menyeluruh dari kerangka pandangan alam al-Qur'ān.

**Katakunci:** pandangan alam, kesepaduan, sains tabii, sains moden Barat, *ulū'l-albāb*.

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<sup>1</sup> This article is based on the paper presented during the 2<sup>nd</sup> International Conference on the Qur'an & *Sunnah* on 13<sup>th</sup>-15<sup>th</sup> March 2015. It is an expansion of the one presented at the International Conference on Developing Synergies Between Islam and Science & Technology for Mankind's Benefit at IAIS, Malaysia, 1<sup>st</sup>-2<sup>nd</sup> October 2014 and published in Mohammad Hashim Kamali (Ed.), *Islamic Perspectives on Science and Technology: Selected Conference Papers*, (Singapore: Springer, 2016). Trained as an educator, the author has more than 20 years of experience in teaching science, mathematics and chemistry at high-school and pre-university levels. She specialises in the said subjects under Cambridge International Examinations. She is currently teaching at IIUM.

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## INTRODUCTION

The central core of the worldview of Qur'ān is *al-Tawhīd* – the categorical submission and subservience to Allāh *Subḥānahū wa Ta'ālā*, the One True God, in all His attributes and decrees as *Al-Khāliq* and *Al-Rabb al-Ālamīn*. As the worldview of the Qur'ān is holistic and comprehensive, integrative and well-balanced (*shumūliyyah*, *takāmuliyyah*, *tawāzinah*), integration in itself is not an endeavour that is entirely novel. Different efforts of re-integration constitute attempts at reforming, renewing and reviving (*iṣlāḥ*, *tajdīd* and *iḥyā'*) the *ummah* in reasserting and re-establishing the above nature of Islām, which, along the different periods in history, had been side-lined, forgotten or overlooked due to various factors. Contemporary efforts at (re-)integration are reactions against the dichotomy brought about by colonisation and the melee of thoughts brought forth by globalisation of modernists' and postmodernists' worldviews and tendencies. The article discusses five main rationales that justify the need for integrating natural science with the Worldview of the Qur'ān, touching upon Qur'ānic ideals and on the ground realities; before zooming into the actual situations in secondary schools. It briefly describes the findings of the field researches and surveys conducted between December 2010 and January 2013; and present a model of integration for Islamic secondary schools.

## THE RATIONALE

There are several rationales that call for integrating the Qur'ānic Worldview with natural science<sup>3</sup>. The following are five main rationales explained in brief.

### 1. Qur'ānic Imperatives

The Qur'ān draws attention to 'read' Allāh's Signs in the two Books—*Āyāt Allāh fī al-Qur'ān* and *Āyāt Allāh fī al-kawn*—the Qur'ān and the Open Book of Nature. The Qur'ān explains that the latter abounds with the Universal language of Truth dictated by Allāh's Laws of Nature, brought about by His *Tadbīr* (regulation and administration, see Q. 10:3,31; 13:2 & 32:5) and *Taqdīr* (His determination and decree, see Q. 10:2, 5; 25:2; 41:10; 73:20; 80:19 & 87:3) of the Cosmos. These manifest as His Signs abundant in the Universe and within humankind – to be 'read', studied, pondered, contemplated, understood and reflected upon in the light of the Qur'ān. They signify the rightful position of reason, which is subservient to Revelation, in its submission to Allāh, the Author of both *Āyāt* (e.g. Q. 96: 1-19). Time and again the Qur'ān commands one to apply and bring to bear all the extrinsic and intrinsic sensory and intellectual faculties in comprehending both categories of *Āyāt* with humility (*tawāḍu'*), gratitude (*shukr*), acknowledgement (*i'tirāf*), awe (*khashyah*) and utmost reverence (*khushū'*), obedience (*ṭā'ah*), servitude (*ubūdiyyah*), responsibility (*mas'ūliyyah*) and accountability (*muḥāsabah*) towards God. In Q. 30: 11-27 for instance, Allāh decrees upon humanity to awaken the senses and engage in a rational understanding of His *Āyāt* as do the "*Ūlū al-Albāb*". Verses Q. 45: 12-13 describe the subjection (*taskhīr*) of Allah's creations in nature – "*all that is in the heavens and all that is in the earth*" for human beings. In this manner, the Divine appointment of vicegerency (*khilāfah*) implies man's responsibility to manage and to derive benefits from the Universe. Far from mere utility, this must be striven with the deep sense of *shukr*, *taqwā* and the highest form of *ubūdiyyah* to Allāh, to bring humanity nearer to understanding Allāh's Signs, in knowing the Lord, the purpose of

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<sup>3</sup> For simplicity, the term "natural science" is used to denote the scientific disciplines that study the "natural world" (i.e. *al-ʿulūm al-ṭabīʿiyyah*), a part of the cosmos created by Allāh, which He owns, manages, sustains and regulates by His Decree. The usage of the term "nature" does not, in any way reflect Francis Bacon's notion of nature.

creations and in getting closer to Him. By functioning as *khulafā'* of Allāh through applications of the above, human beings bring about prosperity to his surroundings (*'immārat al-kawn*) and proliferate mercy to the worlds (*rahmatan li'l-'ālamīn*). Such is the macrocosmic significance of the humankind despite their insignificant micro-cosmic size in comparison to the Cosmos—they are God's slave-servants whose temporary station for the onus of duty is the Earth.

The necessity for integrating the rational sciences with revelation has been expressed by many among Muslims, notably al-Ghazālī (1058-1111), an epitome of a fully integrated scholar and the reformer of the fifth century *Hijrah*, who managed to reconcile the three disparate post-Qur'ānic thoughts of *kalām*, *fiqh* and *taṣawwuf* into one cohesive whole. Through classifying knowledge and its acquisition, al-Ghazālī reinstated the rightful position of human intellect with respect to the superiority of Revelation. In *Wonders of the Heart* he writes compellingly,

So he who is a proponent of mere blind imitation and of setting the intellect entirely aside is ignorant; and he who is satisfied with the intellect alone, without the light of the Qur'ān and the *Sunnah*, is deluded. Take care that thou be not in either of these two groups, but be one who unites the two sources. [...] The supposition of those who think that the intellectual sciences are opposed to the sciences of religion and that it is impossible to bring them together in harmony, is a supposition which arises from the blindness in the eye of insight. [...] This is only because his own impotence has caused him to imagine an inconsistency in our religion! (Al-Ghazzali, 2009: 55- 56).

Bediuzzaman Sa'īd Nursi (1877-1963), who witnessed through the painful demise of the Ottoman caliphate and the establishment of the secular Turkish republic gives a beautiful analogy:

The religious sciences are the light of the conscience, and the modern sciences are the light of the reason. The truth becomes manifest through the combining of the two. The students' endeavour will take flight on these two wings. When they are separated it gives rise to bigotry in the one, and wiles and scepticism in the other (Sa'īd Nursi, quoted in Şükran Vahide, 2011: 53).

Muhammad Hamidullah (1908-2002), the quintessentially fully-integrated contemporary Islamic scholar from Hyderabad, speaks of “dynamic predestination”:

Mysticism or spiritual culture in Islam envisages the diminution of the Ego and the ever increasing realization of the presence of God. To be absorbed in the will of God does not at all mean immobility; far from that. [...] the Qur'an urges man to action and even competes in the search for the Divine pleasure by means of good actions. Not to follow one's evil desires, but to abide by the will of God alone, does not lead to inaction [...] man must continue his effort, even though failure follows failure... This notion of a dynamic predestination [...] urges one to action and resignation to the will of God. (Hamidullah, 1973: 88).

In *Qur'ānic Foundation and Structure of Muslim Society*, Fazl-ul-Rahman Ansari (1914-1974), the founder of the World Federation of Islamic Mission who spent his life trotting the globe for the propagation of Islām, describes:

The Holy Qur'an chartered a new course for the pursuers of science; and in that its function was to stimulate the scientific outlook and the quest for scientific knowledge, and to promote the cultivation of the physical sciences;—and that

to an extent that the Scientific Quest has been made a part of the Worship of God, having been affirmed as an inseparable complimentary of the Religious Quest (Fazl-ur-Rahman Ansari, 2008: 180).

Ismā'il Rājī Al Fārūqī's (1921-1986) message on *Tawhīd* has been articulated distinctively throughout his work. He stresses,

Islam called everyone to be a scientist investigating every field and aspect of nature; a historian examining every chapter of human and group behavior through the centuries. (Isma'īl. R. al Fārūqī, 1986: 321)

He continues that nature “was not created in vain or sport” but with a “divine purpose”, not for man “to possess or to destroy” but as “*ni'mah*” and “*āyāh*”. It is “God’s work”, an “instrument of His purpose”, thus its “tremendous dignity”, “respect and awe” (ibid.: 321-323).

## 2. The Reality

Unlike the conventional Western mind-set, which, due to the centuries of church-science conflicts sees religion and reason to be disparately at variance with each other; the Qur'ān-natural science complementarity has been frequently expressed by numerous scholars and writers of the Muslim world. It is common to come across Muslims who are confounded when the question of integration of natural (or modern) science with the Qur'ān is brought about. Questions like – “What is the problem with science?”, “What is so ‘un-Islamic’ about science?”, “There is not such a thing as Islamic science or un-Islamic science!” or “Science is science, it is objective and it is already ‘Islamic’?”, “Don’t tell me that what we are doing in science is not Islamic!” – are usually thrown out in response. These summarise the mind-set and ignorance of an observable many, regardless of whether they are from the public, students, educators or practitioners of science. This mind-set results from formal education and training that indoctrinate the ‘objectivity’ of science, and the lack of exposure to and a good grasp of the history and philosophy of science—a phenomenon that plagues education the world over.

Contrary to the common perception, the history and philosophy of Western modern science clearly shows that science is far from being objective. It is laden with the fundamental pre-suppositions and premises of the worldviews that construct the discipline. Fundamental questions such as “Who am I?”, “Where do I come from?”, “Why am I here?”, “What is the meaning of life?” (C. Vidal, 2008: 3-7) all bear their weight in the foundation and trajectory of any system or discipline, inclusive that of science. As no argument is more incisive than what scholars have to say in reference to their thoughts and frame of reference, the paragraphs below and the following section give some leads, each representing a Western voice on modern science; as astute answers to the real questions above.

Karl R. Popper (1902-1994) gave an expository criticism in *The Myth of the Framework: In Defence of Science and Rationality*:

The History of science, even of modern science since the Renaissance, and especially since Francis Bacon [1561-1626], may be taken as an illustration [...] Bacon was the prophet of the secularized religion of science. He replaced ‘God’ by the name ‘Nature’ [...] Theology, the science of God, was replaced by the science of Nature. The laws of God were replaced by the laws of Nature. God’s power was replaced by the forces of Nature. And at a later date, God’s design and God’s judgements were replaced by natural selection. Theological determinism was replaced by scientific determinism and the book of fate by the predictability of Nature. In short, God’s omnipotence and omniscience were

replaced by the omnipotence and omniscience of nature and by the virtual omniscience of natural science (K. R. Popper, 1994: 82-83).

Richard Tarnas (1950- ) accounts,

This emergence of the modern mind, rooted in the rebellion against the medieval Church and the ancient authorities, and yet dependent upon and developing from both these matrices, took the three distinct and dialectically related forms of the Renaissance, the Reformation, and the Scientific Revolution. These collectively ended the cultural hegemony of the Catholic Church in Europe and established the more individualistic, sceptical, and secular spirit of the modern age. Out of that profound cultural transformation, science emerged as the West's new faith [...] Science ennobled that mind, showing it to be capable of directly comprehending the rational order of nature [...] No [...] such authority needed, for every individual possessed within himself the means for attaining certain knowledge—his own reason and his observation of the empirical world.” (R. Tarnas, 1991: 282-283).

Tarnas expresses these historical developments as subconscious “hidden continuities” of the Western mind (ibid: 320-323). Now, two issues are glaring with respect to these “hidden continuities”.

*First*, is the detachment from God and the transcendent by Western philosophy, replacing Him with reason, material and mathematical empiricism. Absolute freedom and the ascendancy of the unrestrained human reason assume supremacy as *the criterion* above revelation, with the deconsecrating of God steadily eroding to agnosticism and atheism. Tarnas observes, “Eventually that residual divine reality, unsupported by scientific investigation of the visible world, disappeared altogether” (ibid.: 285). The Christian dualism of spiritual transcendence versus material morphed into “the modern dualism of mind and matter”; and later the irreconcilable schism between “faith and reason” (ibid.: 285-286). Human reason being the only authority, losing all sensibility of the sacrosanct and not having an inkling of custodianship – all else in the universe (inclusive of other human beings) are considered as biddable materials under mechanistic natural law and are now only objects of scientific investigation. Charles Darwin's (1809-1882) theory of evolution, natural selection and survival of the fittest mark modern science's ‘pedestal’ in the ‘natural history’ of human. Instead of the slave-servants and vicegerents of Allāh in Islam or the children of God in Judeo-Christian tradition – the Darwinian man is a product of a random, mechanistic and purposeless process of nature.

*Second*, a number of ideas that are adhered to as the conventional modern scientific paradigm (see “the Ten Dogmas of Modern Science”, Rupert Sheldrake, 2012) strike several chords too familiar with the ancient Hellenistic cosmology, some of which are inherent in the old Christian dogma. These include:

- (i) Everything in the universe – inclusive of human beings and their inner workings (e.g. biological inheritance in DNA, functioning of organs, the mind as a collection of essentially mechanical neuron and synaptic activities of the brain, memories are information that are wiped out at death) and the laws of nature – is *mechanically self-perpetuating and fixed*. (Re Aristotelian deism).
- (ii) Matter and energy are neither created nor destroyed, with the total amount a constant since the beginning of time. Vis-à-vis the Aristotelian notion of God Who formed the universe from *matter that is already in existence*, since nothing can come out *ex-nihilo*.

- (iii) There is no transcendental meta-physical value in human earthly life. The Aristotelian man is the “rational animals” of the geocentric earth. The Christianised Aristotelian notion of life is only to *escape*, upon death, *from the wretched hell at the core of earth* in order to ascend to higher geocentric celestial levels towards heaven. In Darwinian term, humans are a chance-product of natural selection, the purposeless mechanism of evolution. Hence with respect to the size of the cosmic universe, human beings are utterly insignificant.
- (iv) The earth has no transcendental significance. With the well-being of the imperilled earth on a rapid and irreversible decline at the Western and Eastern hands of modern science and technology—is the on-going obsessive quest to find an alternative planet with signs of biological life as a new abode for humans. Re Christianized Aristotelian geocentricism – *the only significance of the earth is that of a place of punishment for the sinners*, with no moral obligation of custodianship onto it.

With contemporaneous great discoveries in astronomy, and the ensuing realization of the vastness of universes; the question of significance or insignificance of the human beings gain increasing popularity in scientific circles. However, instead of becoming humbled by the realisation, Western modern science’s anthropocentric arrogance is heightened. With ‘sophisticated-*escapism*’ is its quest of finding traces of life in other planets as man’s potential alternative abode, at the expense of billions of precious dollars which could have sufficiently alleviated sufferings of the homeless and starvation afflicting millions.

### 3. Western Voices on Modern (Mechanistic-Positivistic) Science

Out of exasperation with positivism, Thomas S. Kuhn (1922-1996) introduced historicism to the Western world and concluded with a “paradigm shift” that shook the very foundation of positivism,

If science is the constellation of facts, theories, and methods collected [...], then scientists are men who, successfully or not, have striven to contribute one or another element to that particular constellation [...] An apparently arbitrary element, compounded of personal and historical accident, is always a formative ingredient of the beliefs espoused by a given scientific community at a given time. That element of arbitrariness does not, however, indicate that any scientific group could practice its trade without some set of received beliefs (Kuhn, 1996: 1-4).

On the perceived objectivity of modern science, Tarnas argues and extrapolates astutely, “Because scientific knowledge is a product of human interpretive structures that are themselves relative, variable, and creatively employed [...], the truths of science are neither absolute nor unequivocally objective. [T]he modern mind was left free of absolutes, but also disconcertingly free of any solid ground.” (Tarnas, 1991: 359).

Bernard E. Rollin confides in his book *Science and Ethics*:

The slogan that I in fact learned in my science courses in the 1960s, and which has persisted to the present, is that ‘science is value-free’ in general, and ‘ethics-free’ in particular (Rollin, 2006: 17).

He argues against the statement “science cannot make value judgements [...or...] moral judgements” (ibid.) as “badly wrong” (ibid.: 27). Because of what is subscribed, the state of the world today, its good and its bad, is a testimony of the outcomes which the Western and

Eastern hands of the “value-free” and “ethics-free” science and technology have sown. Not discounting the numerous benefits that science and technology have brought to the world, it is blasphemous to ignore the global misfortune that came in the same package.

However, the momentum of modern science’s discipline, even in the postmodern era of today, stands persistently on Western modern pre-suppositions. While all the debates are on-going challenging its philosophical premises; the practices of science, and the teachings of it in the West and the East are, for all practical purposes still, as it were, naturalistic, positivistic and mechanistic. So much so that the death of philosophy has been declared, and that “scientists have become the bearers of the torch of discoveries in our quest for knowledge” (S. Hawking, 2010: 5). The answer given to the “ultimate question” is that

God [...] is **not** the answer of modern science [...] just as Darwin and Wallace explained how the apparently miraculous design of living forms could appear without intervention by a supreme being, the multiverse concept can explain the fine-tuning of physical law **without the need of a benevolent creator** (Hawking, 2010: 164-165). (Emphasis mine.)

Adding on to these is the postmodernists’ annihilation of truth, leaving humanity in a free fall to the bottomless pit of valueless-ness.

It has to be acknowledged however, that there are Western scientists who do believe in theistic science and do not subscribe to agnosticism. Francis S. Collins is one such figure. A leading scientist and previously an atheist (Collins, 2006: 16), Collins became ever more convinced of his faith in God while heading the Human Genome Project, the experience of which he describes as “both a stunning scientific achievement and an occasion of worship” (ibid.: 3). He argues, “belief in God can be an entirely rational choice, and that the principles of faith are, in fact, complementary with the principles of science” (ibid.).

#### 4. The State of Affairs

With the guise of civil liberty and human rights, atheism, capitalism and liberalism brought forth dissolution of human values, hedonistic and sensate culture of materialism, capitalist induced greed and excessive consumerism, wars, diseases, chronic health issues, famine, extreme poverty, chronic degradation of the environment, and depletion of resources and of biodiversity. On top of human induced climate change – the widening ozone-hole, global warming and extreme weather conditions – the latest is the discovery of a plastic garbage patch in the Pacific Ocean twice the size of France, endangering and killing marine life and polluting the food chain. Out of the rapid spur of all these, humankind has subjected himself and each other to unprecedented despondencies due to pollutions of the environment, the body, the mind and the soul, and the loss of its spirit.

Witnessing all these, Hans Küng (1928- ) challenges for a solution.

The price that the West had to pay for the [...] epoch-making change in values and norms [...] of late-modernity [...] was a high one: the other spheres of life were left with no religions and indeed largely also with no moral basis and ultimate horizon of meaning [...] From this follows **a deep crisis of orientation** and [...] a desperate search for meaning, criteria and a shared basis for values. Like absolutized faith, so too absolutized reason can set free destructive energies, with devastating effects [...] Here is a new task for Muslims and Christians together (Küng, 2007: 649-650). (Emphasis mine.)

Edward O. Wilson (1929-) argues for the prospect of consilience or the linking together of principles between all the different disciplines of knowledge since, according to him, for “the

material world at least, the momentum is overwhelmingly” turning “toward conceptual unity” (Wilson, 1999: 11.) He continues,

Which world view prevails, religious transcendentalism or scientific empiricism, will make a great difference in the way humanity claims the future [...] **Science** faces in **ethics and religion its most interesting and possibly humbling challenge**, while **religion** must somehow **find the way to incorporate the discoveries of science in order to retain credibility** (ibid.: 290). (Emphasis mine.)

Though vexed towards the “secularization of the human epic and of religion itself” (ibid.), Wilson’s voice lends a degree of familiarity with the different reactions and efforts that have sprung about from the Muslim world. The above account provides small glimpses on the trajectory of highly significant voices, projecting from Western thoughts and discourses; which only show the state of misguidance and the desperate search for direction and meaning.

## 5. Voices from the Muslim World

The *Tawhīdic* worldview or *al-Taṣawwur* (Sayyid Qutb, 1995) of the Qur’ān addresses matters pertaining to theology, cosmology, anthropology, ontology, epistemology, teleology, axiology and eschatology. Sayyid Qutb explains that it stands in harmony with the nature of mankind (“*fiṭrah al-bashariyah*”, S. Qutb, 1995: 104) as it originates from the Creator’s Divine ordainment (ibid.: 147). He explains that the most fundamental characteristic that the Islamic worldview holds, making it distinct from the other, is its Qur’ānic Divine origin, instead of from the “intellectual rubbish” of either purely rational concepts or paganistic animism and superstitions (S. Qutb, no date: 13). A point of departure that the Qur’ān has, which sets it above other Revelations prior to it, is its preservation in original form till the end, hence its “permanence”, “comprehensiveness”, “balance”, “dynamism” and “realism” (ibid.: 27-28).

There has been a pressing necessity to ‘recast’ the anthropocentric contemporary science in the light of the Qur’ān, where reason is rightly placed—freed from all else by virtue of its total submission and absolute subservience to Allah. Efforts at reintegration in the dichotomous post-colonial Muslim world are exemplified by many illustrious reformers and numerous contemporary scholars of calibre. The International Institute of Islamic Thought (IIIT) with its earlier “*Islamization*” series, and the World Conferences on Muslim Education (WCOME)<sup>4</sup> were impetus for projects towards the reformation, renewal and revival (*iṣlāḥ*, *tajdīd* and *ihyā’*) of the *ummah*, and at re-integration. The various efforts have been significant in one aspect or another, with a great variety of intellectual thoughts, interests and discourses propelled mostly by the emergency need for fundamental reforms, pointing out to the problems with Western philosophies and systems. They address the “malaise” (Al-Farūqī, 1982) afflicting the *ummah* and the crucial need for integration. These include a wealth of works, discourses and debates on Islam and science, Islamic science, *Tawhīdic* science, Qur’ānic science, scientific miracles (*i’jāz al-‘ilmī*) in the Qur’ān, scientific Qur’ān and the like.

Collectively, the discourses have, to a certain extent, been successful in raising awareness among Muslims; with most literature having intellectual, spiritual and affective appeals to scholars and academics at the tertiary level of education. How much of the awareness trickles

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<sup>4</sup> The first WCOME (1977) focused on “Aims and Objectives of Islamic Education”; the second on “Reclassification of Knowledge (1980)”; the third on “Textbook Development” (1981) and the fourth on “Teaching Methodology” (1982) (World Centre for Islamic Education, 1983). There have been subsequent WCOMES, the eighth was held in 2012 in Shah Alam, Malaysia, on “Islamization of Education: An Assessment of the Current Situation and Steps into the Future”.

down to where it matters much—the reality on the ground where the young, who are propped at the crucial gateway to adulthood, in whose hands lie the immediate future of the *ummah*—must be examined. This age group is at a particularly critical developmental stage, whereby they are most impressionable cognitively, affectively, spiritually, socially, morally and ethically.

## INTEGRATION AT ISLAMIC SECONDARY SCHOOLS

Since the 1990s there has been commendable development of Islamic education in Malaysia, as one of the leading nations of the Muslim world, especially with the position of Islam as “the religion of the Federation” (Malaysian Constitution, Part I, Article No. 3). The National Education Policy succinctly declares,

Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God...

(M.O.E., 1989, p. v)

*K.B.S.M.*, the Integrated Curriculum of Secondary Schools launched in 1989 was designed to include cross-curricular inculcation of the physical, emotional, spiritual and intellectual developments, and of agreed universal moral values. The Ministry of Education (M.O.E.) brought to the mainstream numerous *S.A.R.s* - Peoples’ Religious Schools as *S.M.K.A.s* - National Religious Secondary Schools with *K.B.S.M.*, Islamic Studies streaming and Arabic language (Islamic Education Division, M.O.E., 2009: 27). The ministry’s philosophy of Islamic education states,

Islamic education is a continuous effort for the dissemination of knowledge, proficiency and internalisation of Islam based on the Qur’ān and *Sunnah* for the purpose of forming the attitude, competence, character and worldview of the servant of Allah who is aware of his responsibilities for developing the self, the society, the environment and the nation towards integrity on earth and eternal felicity in the hereafter (ibid.: 48). (Translation mine.)

The M.O.E. has, under its care, more than 250 public Islamic religious schools such as *S.M.K.A.s*, federal assisted *S.A.R.s* and *S.A.N.s* (State Religious Schools), *tahfīz*-science *ma’āhid* and integrated schools. Apart from these, *M.R.S.M.s* - MARA Junior Science Colleges were established to prop lagging Malay and indigenous *bumiputras* in science, as well as a rapid mushrooming of various private Islamic and integrated schools. Of special interest is *Sekolah Imtiaz* (est. 1995) as a small private school in Besut, Terengganu with its “*Ulul Albab*” [sic.] module. The school has been taken over by the state government as *Imtiaz* School of Excellence, expanding on its “*Ulul Albab*” model of building a generation that is “*Qur’ānik, Ensiklopedik, & Ijtihadik*” [sic.] (Shukery Mohamed, 2010: 7-18). Since 2009, at least three *M.R.S.M.s* have adopted *Imtiaz*’s “*Ulul Albab*” model (MARAs, n.d.: 33). At present, the Islamic Education Division of M.O.E. is consolidating the “*Ulul Albab*” model to be applied to more schools under its jurisdiction.

In Indonesia, the *Orde Baru* governance (1966-1998) provided much needed funding towards improving Islamic schools, which were usually situated in far-flung remote areas. Five *M.A.N.s*, fully state owned and funded secondary Islamic schools were established, enrolling select top students for a special program with a curriculum ratio of 70%: 30% religious: general studies (Marwan Saridjo, 2011: 106-108). Beginning in 1997, the *Era Reformasi* witnessed concerted efforts in mobilising Islamic educational foundations towards further

“reformation” (ibid.: 129-162) and “modernisation” (Hartono, 2010: 13-25) of the *pondok*, *pesantren*, *madrasah* and others. An example is the establishments of *madāris* with international status (Marwan Saridjo, 2011: 129-162). *Madrasah Insan Cendekia*, a private institution initiated by B. J. Habibie in 1999 was taken over by the state to avail *madrasah/pondok/pesantren* students, opportunities for higher education locally and abroad (ibid.: 158-159). Constitutionally, Islam is one of the five official religions of the Republic, at par with Catholicism, Protestantism, Hinduism and Buddhism. However, the established history of private Islamic education foundations such as *Muhammadiyah* and *Al Azhar* presents a long presence of reforms in Islamic education in Indonesia, especially post 9/11/2001 – where *madrasah*, *pondok* and *pesantren* were misperceived as breeding radicalism (Azyumardi Azra, 2011). *Al Azhar* schools, for instance, are ranked (based on performances in national examinations) as among the top (Hartono, 2010: 26-45). Most of these schools apply two curricula at once, i.e. the *K.T.S.P.* (the national school based curriculum) and the *pesantren* curriculum, mostly with a 100%: 100% formulation. In addition, schools under the *J.S.I.T.* (the Integrated Islamic Schools Network), subscribe to what is known as “*IPTEK + IMTAQ*” curricula, balancing *IPTEK* (knowledge on technology) with *IMTAQ* (“*Iman dan Taqwa*”).

### 1. Integration at School: Challenges

As stated by Syed Ali Ashraf (1979: 17), “The creation of a third system embracing an integrated system of education is necessary but integration is not an easy process” – indeed, integration has never been easy. Despite the various commendable “integration” attempts and models, the following questions are pertinent: How is “integration” done in the teaching of natural science? Are there any of the textbooks used, which fully integrates the Qur’ānic Worldview with natural science? Are there any Islamic schools close to the ideal whereby integration constitutes a confluence between revealed and acquired knowledge – where natural science curricula undergo holistic reconstruction, reinterpretation, and redirection from the framework of, and organically infused with the Qur’ānic Worldview; while at the same time facilitating Islamic studies to draw enrichments and benefits from science? How are the teachers trained towards integration in the classrooms, as well as outside of the classrooms?

### 2. Field Research

Attempting to answer these questions, series of field researches and surveys were conducted in the period between December 2010 and January 2013. These include visits to Jakarta and its suburbs for Indonesia (1 public and 11 private secondary schools including *M.A.N.*, *Al Azhar* and *Muhammadiyah*), and to Kuala Lumpur, Selangor, Negeri Sembilan, Terengganu and Kelantan in Malaysia (8 public and 4 private secondary schools, including *M.R.S.M.s* and *Ma’had Tahfiz Sains*). In-depth qualitative interviews were carried out, apart from interactions with teachers, students, school administrators and board members. Relevant printed materials, curricula, syllabi, lesson plans, textbooks and information from the schools’ websites were availed and analysed. In addition, survey visits were also carried out at Yala, Pattani and Haatyai (4 private schools), and a few private schools in Ontario, Singapore, Brunei and Mindanao<sup>5</sup>. The present author’s experience as a secondary school

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<sup>5</sup> M. Kamal Hassan conducted surveys in Ontario, Singapore, Brunei and Mindanao in-solo between 2010 and 2012. We conducted field researches and surveys in Indonesia (Dec. 2010-Jan. 2011) and Thailand (Jan. 2013). The present author conducted field researches and surveys in Malaysia (July-Aug. 2012). She also has hands-on teaching and administrative experiences in Islamic primary and secondary schools in Malaysia (1996-2011); as well as hands on teaching experience in an Islamic secondary school in Richmond, British Columbia (2001-2002) apart from teaching voluntarily (1989-1993) in Waterloo, Ontario, Canada.

teacher and administrator provides valuable insights on the nature of “integration” attempts at schools as well as the problems and challenges faced.

### 3. Findings of Field Research

Generally, our field researches, surveys and hands-on experience show:

- (i) The lack of comprehensive knowledge on integration (why, what, when and how), time constraints, demands of the formal syllabi and examinations cause “integration” to be left at the device of individual teachers or schools, or side-lined altogether.
- (ii) School administrators, teachers and a portion of the public undertake “integration” based on respective awareness and understandings, instead of formal institutionalisation in the curricula.
- (iii) “Integration” constitutes the study of “Islamic religious knowledge” and natural science in parallel, with minimal intersection, if any.
- (iv) An “integrated curriculum” is limited to commendable observances of daily prayers, Qur’ān recitation/memorization, supplications, etiquette, character development and co-curricular activities.
- (v) Lack of training for the teachers. With little or no formal guidance or supervision, they are encouraged to improvise on their own, resulting in superficial patching-on of Qur’ānic verses/ *aḥadīth* in the teaching and learning processes.
- (vi) The stark lack of secondary school curricula, modules and textbooks of natural science (we found none in English/ Malay/ Indonesian/ Thai/ Tagalog used in the secondary schools visited) fully written from the Qur’ānic worldview.
- (vii) There is a dire need for such materials voiced by all teachers, administrators and members of the schools’ boards.

The issue of the need for Islamically integrated textbooks has been amply talked about and deliberated since the 3<sup>rd</sup> WCOME in 1981, which convened on textbook development. However, concrete results have yet to materialise. Secondary school natural science curricula and textbooks used and available, by and large, are based on the conventional Western modern (naturalistic-mechanistic-positivistic) model, in which God and His attributes are left out from the study of nature, man and the universe. Some “integrated materials” include a few Qur’ānic verses and supplications in the opening, or at best, sparsely interspersed in the text, with little relevance.

### PROPOSED SCIENCE EDUCATION IN ISLAMIC SECONDARY SCHOOLS

Witnessing the state of affairs, and knowing the facts above hands-on, we hereby put forth a consolidated *ūlū al-Albāb* model for science education.

#### The *Ūlū al-Albāb* Model

Integrating natural science with the worldview of the Qur’ān constitutes as part of an on-going and continuing efforts towards the reformation (*tajdīd*) and renewal (*iṣlāḥ*) of the *ummah*, and the revival (*iḥyā’*) of the pristine, comprehensive, integrative and well-balanced holistic nature of the *Tawḥīdic* message of Islam. It also constitutes as striving to bring contemporaneous relevance (*mu’āṣarah*) of the Qur’ān to students of science, whilst striving to bring relevance (*al-mulā’imah*) of science to Muslim students.

### (i) *Ūlū al-Albāb*

The phrase “*Ūlū al-Albāb*” occurs in sixteen places in the Qur’ān<sup>6</sup>. In similar contexts, “*Ūlū al-Nuhā*” occurs twice<sup>7</sup>, “*Ūlū al-Albāsār*” thrice<sup>8</sup> and “*Ūlī’l-’Aidī wa al-Albāsār*” once<sup>9</sup>. Based on studies of eight English translations and commentaries of the Qur’ān, a contextual study of two of them and of several reputable Arabic-English dictionaries on all twenty two verses describing the above references, the present author concludes the following. *Ūlū al-albāb* are those whose sensory and intellective faculties are so profound and refined through what al-Ghazālī terms as disciplining (*riyāḍiyyah*) and purification of the self (*tazkiyat al-nafs*) that their hearts, having been purified from the inclinations of the lower *nafs* or *hawa*, receives impressions and colouration by Allāh (“*sibghat Allāh*”, Q. 2:138), permeates with the quintessence of illuminated reason and understanding, intelligence and discerning wisdom. They are capable to decipher His *āyāt* in the cosmos, and with penetrating insights are able to draw conclusions on the unearthing of the truth and correct guidance. They could be in the form of scholars-scientists who, in lieu of their clear understanding of God’s *Āyāt*, are most at awe of Him – “*Innamā yakhsha Allāha min ‘ibādihi al-‘ulamā’*.” (Q. 35:28). Through a life of servitude to Allāh and vicegerency, they safeguard the sanctity of the balance in creation and spread *raḥmatan lī al-‘ālamīn*.

Constant awareness and remembrance (*dhikr*) of Allāh and unfailing engagement of the extrinsic and intrinsic senses and intellection (*fikr*) in striving to understand God’s *Āyāt* are the traits that characterise early Muslim scholars-scientists. Possessing the characteristics of *ūlū al-albāb*, they were selfless, genius polymaths, able to chart the course of history through a millennia of glorious civilisation that they brought about, which was as scientific as it was Islamic. The *ūlū al-albāb* of the classical Islamic period received Divine blessings (*barakah*) observable through the quality and quantity of their works and the unprecedented benefits they imparted on the course of human civilisation. Despite the short life-span of many of these scholars, they were able to generate volumes of monumental works of great calibre, with many bearing significant impressions onto human thoughts and scientific advancements to this very day.

### (ii) *Natural Science from the Worldview of The Qur’ān (NSWVQ)*

With the characteristics of the Qur’ānic personality traits of *ūlū al-albāb* as the structural framework; Project *NSWVQ* works towards a Malaysian model of reformed Islamic education, based on the integration of natural science and the Qur’ānic worldview<sup>10</sup>. Its first fruit is a three-volume reference text, *Natural Science from The Worldview of The Qur’an: An Introduction*, covering subjects of biology, chemistry and physics. Suitable for Islamic secondary schools in Malaysia and abroad, science educators and the public. The science subject matter is based on the commonality of the Malaysian *K.B.S.M.*, Indonesian *K.T.S.P.*, Cambridge I.G.C.S.E. and A-levels, Bruneian and Singaporean (G.C.E.-O), International Baccalaureate, Filipino, Canadian and American curriculum and syllabi.

*NSWVQ* presents subject matters of science from Qur’ānic theology, epistemology, cosmology, ontology, anthropology, axiology and eschatology. This implies that the book rejects any notion contravening the above, and reconstructs, redefines, redirects and realigns

<sup>6</sup> (Q. 2: 179, 197 & 267); (Q. 3: 7 & 190); (Q. 5: 100); (Q. 12: 111); (Q. 13:19); (Q. 14: 52); (Q. 38: 29 & 43); (Q. 39: 9, 18 & 21); (Q. 40: 54) and (Q. 65: 10).

<sup>7</sup> (Q. 20:54, 128).

<sup>8</sup> (Q. 3:13; 24:44; 59:2).

<sup>9</sup> (Q. 38:45).

<sup>10</sup> This is the *Profesor Ulung* Project of Distinguished Professor Tan Sri Dr. M. Kamal Hassan, completed in March 2015.

certain conventional concepts that are contrary and injurious. It includes relevant and in-context Qur'ānic notions and Prophetic traditions. Pressing issues of cosmological, ontological and axiological significance are juxtaposed with the current state of affairs, based on Qur'ānic criterion. Wherever relevant, it follows Qur'ānic methodology to bring about higher understanding and awareness of cosmic phenomena. It corrects conventional historical scientific narratives and includes highlights of pertinent *turāth* (Islamic intellectual and civilisational legacy). *NSWVQ* veers away from the conventional to increase students' affinity for natural science and motivates them to become future scientists grounded in *Tawhīd*, who will contribute to *ummatic* developments. It promotes beyond-textbook/examination learning, and sparks interest, so students become self-initiated life-long learners. It creates awareness that learning science is a personal religious obligation (*fard*) and provides relevance of science to their lives as Muslims. It facilitates and empowers Islamic education towards producing *Tawhīdic* inspired scientists and scientific minds, and assists Muslim teachers in integrating Qur'ānic worldview in teaching and developing natural science. It provides the public with a *Tawhīdic* perspective on natural science and creates better awareness of the inherent synchrony between the Qur'ān and science. *NSWVQ* is also a stimulus for further publications of integrated textbooks written from the Qur'ānic worldview for use in educational institutions - elementary, secondary and tertiary.

## CONCLUSION

One cannot remain indifferent from the compelling verses of the Qur'ān, urging believers to wholeheartedly engage their sensory and intellective faculties in observing; probing; pondering; contemplating; and in searching in the effort to understand natural phenomena abound in the universe and within themselves; with the sole purpose of understanding the universe better – hence knowing the Creator better by understanding the purpose behind His creations and getting closer to Him in sincere submission and humble servitude as *'ibādu'llāh* and *khulafā'Allāh fī al-arḍ*. This is the attitude of the *ūlū al-albāb* addressed in the Qur'ān, highlighting their spiritual ethics and intellectual, physical, moral and social dynamism. Thus the psyche, conscience, stance and activism of the *ūlū al-albāb*, taking natural science as an endeavour towards attaining understanding of cosmic phenomena with a spirit and observance that are – as we believe – the prerequisite for the re-emergence of a generation who will take up the field as *fard 'ayn* and its practise in the scientific community as *fard kifāyah*. The pursuit of science as a civilisational *'ubūdiyyah* towards Allāh and *khilāfah*, and to spread goodness to all, are what the *ummah* needs to lift it off the wretchedly pathetic state that it is in, as well as a step towards solving contemporary human, civilizational and environmental crises.

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