# *KALĀM JADĪD*, ISLAMIZATION & THE WORLDVIEW OF ISLAM: OPERATIONALIZING THE NEO-GHAZĀLIAN, ATTASIAN VISION[*]

Adi Setia[**]

ABSTRACT: The *kalām jadīd* or new dialectics intellectual movement initiated by al-Ghazālī and matured by Fakhr al-Dīn al-Rāzī succeeded in putting all the hellenising philosophical and natural sciences firmly within the theological and epistemological ambit of tradition. This historical success provides pertinent lessons for Muslim scholars and intellectuals today to formulate what can be called *kalām al-ʿaṣr*, or the Dialectics of the Age, in order to bring tradition to engage creatively and evaluatively with the challenge and allure of contemporary secularising sciences.

KEYWORDS: Al-Ghazālī, Fakhr al-Dīn al-Rāzī, Al-Attas, Worldview of Islam, *kalām jadīd*, *kalām al-ʿaṣr*, Dewesternization, Islamization of Present-Day Knowledge

> Even as a discourse *on religion*, *kalām* obviously inclined, right from the start, to use forms of arguments some of which were clearly employed by ancient (and modern) philosophers; and it is of course important to identify these forms, their sources and characteristics.[1]

## 1. Preamble

In *Knowledge Triumphant*, Franz Rosenthal observes that the Islamic civilisation is one that is essentially characterised by knowledge (*ʿilm*), "for *ʿilm* is one of those concepts that have dominated Islam and given Muslim civilization its distinctive shape and complexion."[2] This should not be surprising since the divine revelation itself repeatedly emphasises that its signs or verses are only understandable "for a people who think," (*li qawmin yaʿqilūna*).[3] It exhorts believers, nay, even non-believers, to look to the cosmic horizons (*al-āfāq*) and into their very selves (*al-anfus*) for empirical/experiential evidences/indications/*āyāt*[4] demonstrating the revealed truth (*al-ḥaqq*).[5] For many

---

[*] Revised and extended version of the original paper entitled "The form and function of dialectical theology: the perpetual relevance of al-Ghazālī," presented at the seminar Building on the Shoulders of Giants organised by the Glasgow-based Solas Foundation (http://www.solasfoundation.org.uk/) at the University of Glasgow on Tuesday 20 April 2010. My thanks to Shaykh Ruzwan Mohammed of the Solas Foundation for his kind invitation to me to speak at the seminar, and to my friend Dr. Sachi Arafat for facilitating the networking. This paper will also appear in the academic journal, *Islam & Science* (Summer 2012).

[**] Coordinator, Worldview of Islam Research Academy (WIRA), and Director, Titiwangsa Advisory Group (TAG); e-mail: adisetiawangsa@gmail.com.

[1] A. I. Sabra, "The Simple Ontology of *Kalām* Atomism: An Outline," in *Early Science and Medicine* 14 (2009): 68–78 (on p. 70).

[2] *Knowledge Triumphant: The Concept of Knowledge in Medieval Islam* (Leiden: Brill, 1970), 2.

[3] *Al-Baqarah* (2): 164. Most translations of Qurʾānic verses are based on Muhammad Marmaduke Pickthall, *The Meaning of the Glorious Qurʾan: Text and Explanatory Translation* (Mecca: Muslim World League, 1977).

[4] For an elaboration of the term "*āyat*" See Mohd Zaidi Ismail, "The Cosmos as the created book and its implications for the orientation of science," *Islam & Science* 6, no. 1 (Summer,

scholars, Muslims and non-Muslims alike, the seeds of rational/cognitive thinking were already in early Islam, in the Qurʾānic revelation itself,[6] or as Nuh Ha Mim Keller puts it, "the Qurʾan itself uses rational argument."[7]

From the very beginning, Muslims have taken a rational (or rather, intellectual and cognitive, *ʿaqlī*) and scientific (*ʿilmī*) approach to matters in both the religious (including, spiritual) and mundane domains (*umūr al-dīn wa al-dunyā*).[8] Simply put, there was never in Islamic intellectual history—Ibn Rushd (520—595/1126—1198) notwithstanding[9]—the peculiarly medieval Christian and early modern problem of reconciling between reason and revelation as if the two were mutually exclusive avenues to truth and knowledge that have to be brought together in some form of uneasy compromise and co-existence.[10] As far as Muslims are concerned, revelation and reason are in mutual harmony as complementary avenues to objective knowledge that spring ultimately from the same transcendent, ontological source.[11]

---

2008): 31–53; and Annamaries Schimmel, *Deciphering the Signs of God: A Phenomenological Approach to Islam* (New York: SUNY, 1994).

5 *Fuṣṣilat* (41): 53.

6 For instance, Hans Daiber in his unpublished series of lectures entitled "Islamic Philosophy: Innovation and Mediation between Greek and Medieval European Thought," delivered to his postgraduate students at ISTAC during the 2001–2002 academic year; see also his "The Qurʾan as Stimulus of Science in Early Islam," cited in "What is the meaning of and to what end do we study the history of Islamic Philosophy?: The history of a neglected discipline," in his *Bibliography of Islamic Philosophy*, 2 vols. (Leiden: Brill, 1999), 1: xxxi n. 127. Cf. J. van Ess, "Early Development of Kalām," in G. H. A. Juynboll, ed., *Studies on the First Century of Islamic Society* (Carbondale, IL: Southern Illinois University Press, 1982), 109–123 (on pp. 110ff.).

7 Nuh Ha Mim Keller "*Kalam* and Islam: Traditional Theology and the Future of Islam," in *Islamica* 13 (Summer 2005): 15–27 (on p. 17); accessible also online http://www.livingislam.org/k/ki_e.html.

8 See the important study by ʿAlī Sāmī al-Nashshār, *Manāhij al-Baḥth ʿinda Mufakkirī al-Islām wa Iktishāf al-Nahj al-ʿIlmī fī al-ʿĀlam al-Islāmī* (Dār al-Nahdah al-ʿArabiyyah, 1984). My thanks to Shaykh Ruzwan Mohammed of the Solas Foundation of Glasgow for directing my attention to this book. See also Rosalind Ward Gywne, *Logic, Rhetoric and Legal Reasoning in the Qurʾan: God's Arguments* (London: Routledge, 2004).

9 Ibn Rushd, *Faṣl al-Maqā fī mā bayna al-ḥikmah wa al-sharīʿah min al-ittiṣāl*, trans. George F. Hourani (Leiden: Brill, 1959). His tendency in that book to resolve this tension by subjugating revelation to reason is unacceptable to Orthodoxy, for divine revelation has higher ontological, and hence, epistemological, warrant than human reason.

10 Etienne Gilson, *Reason and Revelation in the Middle Ages* (New York: Charles Scribner's, 1966). It seems to me that, despite himself, Gilson (pp. 81ff.) is subscribing to a kind of Thomistic "two-fold" truth, viz., the truth of Revelation which can *only* be "believed" *rather* than "known," and the truth of "natural reason," which can *only* be "known" and hence *not* "believed," and to him the two truths should not be mixed up or fused or integrated into a single Truth, for such integration is not possible, and that lack of integation is to him *harmony*! From the Islamic point of view, believing is not separate or distinct from knowing, hence *awwal al-dīn maʿrifat Allāh* (the beginning of religion is the *knowing* of God), i.e., to "believe" in God is to "know" God.

11 Ibrahim Kalin, *Reason and Rationality in the Qur'an* (Amman: The Royal Aal Al-Bayt Institute for Islamic Thought, 2012).

This understanding is quite evident in ʿUmar Najm al-Dīn al-Nasafī's (d. 537/1142) important epistemological preamble to his creed.[12] For the Muslim theologians, to whom belief (*īmān*) must be grounded in true knowledge (*ʿilm*), the problem is merely that of specifying the precise relation between the two, which is that reason and all the rational sciences derived from it find its role, purpose and proper place (and hence its cognitive and axiological limits) within the enveloping context of experience, including the "trans-empirical"[13] religious or spiritual experience of divine revelation, or Transcendence, and such was the position taken by the *mutakallimīn* and the *falāsifah*. They "did not distinguish theology from philosophy,"[14] and neither did they distinguish it from physics or mathematics or medicine for that matter.[15] Hence, al-Attas makes clear that:

> Islamic science and philosophy (i.e. *ḥikmah* as contrasted with *falsafah*) have always found coherent expression within a basic metaphysical structure formulated according to the tradition of Sufism and founded upon the authority of revelation, Tradition, sound reason, experience and intuition.[16]

---

[12] Syed Muhammad Naquib al-Attas, *The Oldest Known Malay Manuscript: A 16th Century Malay Translation of the* ʿAqāʾid *of al-Nasafī* (Kuala Lumpur: University of Malaya Press, 1988), 1–52 passim.

[13] On the "trans-empirical state of awareness," see Syed Muhammad Naquib al-Attas, *Prolegomena to the Metaphysics of Islam: An Exposition of the Fundamental Elements of the Worldview of Islam*, 2d. ed. (Kuala Lumpur: ISTAC, 2001), 182–183; cf. idem, *The Positive Aspects of* Taṣawwuf: *Preliminary Thoughts on an Islamic Philosophy of Science* (Kuala Lumpur: Islamic Academy of Science (ASASI), 1981), 9–10. See also Adi Setia, "Philosophy of Science of Syed Muhammad Naquib al-Attas: An Extended Outline," *Islam & Science* (December, 2003): 165–214 (on pp. 174–6). Cf. Nuh Ha Mim Keller, *Sea Without Shore: A Manual of the Sufi Path* (Amman: Sunna Books, 2011).

[14] Richard M. Frank, "The Science of *Kalām*," in *Arabic Sciences and Philosophy* 2, no. 1 (March, 1992): 7–37 (on p. 19).

[15] For instance, they realised that acceptance of atomism entails rejection of Euclidean geometry and affirmation of discontinous or discrete geometry. Al-Kindī himself was able to argue for cosmic finitude "wholly along mathematical lines," as shown in Nicholas Heer and Haig Khatchadourian, "Al-Kindī's Epistle on the Finitude of the Universe," in *Isis* 56 (1965): 426–33. See also, Anton M. Heinen, "Mutakallimūn and Mathematicians: Traces of a controversy with lasting consequences," in *Der Islam* 55 (1978): 57–73; and George Saliba, "The Ashʿarites and the Science of the Stars," in R. G. Hovannisian and Georges Sabbagh, eds., *Religion and Culture in Medieval Islam* (Cambridge: Cambridge University Press, 1999), 79–92. See also Nahyan Fancy, "Pulmonary Transit and Bodily Resurrection: The Interaction of Medicine, Philosophy and Religion in the Works of Ibn al-Nafīs (d. 1288)" (Ph.D. diss., University of Notre Dame, 2006); and Robert Morrison, "*Falsafa* and Astronomy after Avicenna: An Evolving Relationship," in Y. Tzvi Langermann, ed., *Avicenna and His Legacy: a Golden Age of Science and Philosophy* (Turnhout, Belgium: Brepols, 2009), 307–326.

[16] Syed Muhammad Naquib al-Attas, *A Commentary on the* Ḥujjat al-Siddīq *of Nūr al-Dīn al-Rānīrī* (Kuala Lumpur: Ministry of Culture), 464–465; Adi Setia, "Philosophy of Science," 171. See also the recent book by Ibrahim Kalin, *Reason & Rationality in the Qur'an* (Amman: Royal Aal al-Bayt Institute for Islamic Thought, 2012), in three languages, English, French and Arabic, and downloadable from http://www.rissc.jo/campaigns/120523-4-New-Books.html.

Their underlying epistemic point of departure is that true belief cannot be simply "willed" into the heart,[17] for it has objective cognitive content that must be known or understood, and even experienced,[18] in order to be properly affirmed (*taṣdīq*). Moreover, that content can be demonstrable in various ways, and thus, communicated, shared, debated and *rationalised*.[19] In short, it was clearly understood and accepted that belief or faith is not something you can simply shove down people's throats or wishy-washily wished into being out of thin air. As Keller puts it:

> Indeed, Islam is a sapiential religion, in which salvation itself rests not on vicarious atonement as in Christianity, or on ethnic origin as in Judaism, but on *personal knowledge*. Whoever *knows* that there is no god but God and that Muhammad is the Messenger of God is by that very fact saved.[20]

**2. The Islamic Scientific Endeavour**

The scientific endeavour (in the sense of systematic intellectual inquiry) in Islamic history began with the textual standardisation of the Qurʾān, and with the systematic transmission, collection and authentication of the *Sunnah*.[21] These budding endeavours in systematic intellectual work soon inspired the cultivation of sophisticated linguistic sciences (etymology, phonology, morphology, syntax, semantics, lexicography, prosody, metrics, rhetoric and *tajwīd* = art of Qurʾānic recitation) which emphasised the precise relations between words and their meanings.[22]

On these elaborate linguistic foundations, the science of jurisprudence (*fiqh*) was rigorously developed with its own internal analogical principles (*qiyās*) or "comparative-deductive"[23] method of juristic inference that facilitated the creative application of the normative injunctions of the Qurʾān and *Sunnah* to the

---

17 As William James would have it in his essay "The Will to Believe," in William James, *The Will to Believe and other Essays in Popular Philosophy* (New York: Dover, 1956).

18 See the nice discussion in Hamza Yusuf, trans. *The Creed of Imam al-Ṭaḥāwī* (Zaytuna Institute, 2007), 13—14.

19 Thus, for instance, the position of Ibn al-Nafīs; see Nahyan Fancy, "The Virtous Son of the Rational: A Traditionalist's Response to the *Falāsifa*," in Langermann, *Avicenna and His Legacy*, 219–248.

20 Keller, "*Kalam* and Islam," 26 (italics mine).

21 M. M. Aʿẓāmī, *Studies in Early Ḥadīth Literature with a Critical Edition of Some Early Texts*, reprint edition (Kuala Lumpur: IBT, 2009); Eerik Dickinson, *The Development of Early Sunnite Hadith Criticism: The* Taqdima *of Ibn Abī Ḥatim al-Rāzī (240/854–327/938)* (Leiden: Brill, 2001); Harald Motzki, *The Origins of Islamic Jurisprudence: Meccan Fiqh before the Classical Schools* (Leiden: Brill, 2002); Scott C. Lucas, *Constructive Critics, Ḥadīth Literature, and the Articulation of Sunni Islam: The Legacy of the Generation of Ibn Saʿd, Ibn Maʿīn and Ibn Ḥanbal* (Leiden: Brill, 2004). See also Gregor Schoeler, *The Oral and the Written in Early Islam*, trans. Uwe Vegelpohl, ed., James Montgomery (London: Routledge, 2006) and its review by Gibril Fouad Haddad in *The Muslim World Book Review* 27 no. 4 (summer 2007), 24—29.

22 G. Bohas, Jean-Patrick Guillaume and D. E. Kouloughli, *The Arabic Linguistic Tradition* (London: Routledge, 1990).

23 Hans Daiber's term, unpublished academic course lectures delivered at ISTAC during the academic year 2001–2002.

particular local and temporal contexts of diverse Muslim communities. This cultivation of linguistic definition[24] and rational argumentation in the context of religious, intellectual (viz., the translation movement) and political discourse (viz., administrative imperatives of government) prepared the minds of Muslim scholars for their eventual creative engagement with the attractions and challenges of the rich intellectual and scientific cultures of the ancient Egyptians, Chinese, Greeks, Persians and Indians which they encountered in the newly-acquired and far-flung territories beyond the immediate boundaries of the Arabian peninsula.

The Muslims were most attracted to Greek philosophical, logical, medical, mathematical, scientific and ethical principles, and studied them very thoroughly, critically and *self-consciously* indeed.[25] By the time of the Caliph al-Maʾmūn (10th century CE), a *cross-cultural*[26] intellectual movement for translating these Greek works into Arabic was in full swing with the active support of the state and affluent, well-connected individuals. While rejecting some of those Greek principles, Muslim scholars readily recognised many others that were clearly in general accord with the Qurʾānic injunction of grounding knowledge, belief and practice in objective rational thinking and empirical experience. Clearly, this critcal, self-conscious appropriation of these ancient sciences (*al-ʿulūm al-awāʾil*) was motivated and framed both by the cognitive and pragmatic needs of the new, expanding empire and by the intrinsic intellectual allure and challenge of the new, "foreign" system of knowledge.[27] But long before the attractions of Greek rational thought had taken root, the initially dormant discursive and argumentative acumen of Muslims had already been activated and honed by external theological debates with the Jews, Christians, Hindus, Buddhists and Zoroastrians [28] as well as by intra-Muslim political, theological and juristic controversies which resulted in the rise of distinct, contending doctrinal sects (*firaq*),[29] and schools of thought (*madhāhib*) in theological, philosophical, scientific and legal matters.[30]

---

[24] Roshdi Rashed once said, "If the writings of these two [principal] civilizations [Hellenistic and Persian] and the information they had acquired were to be understood and, therefore, expressed in Arabic, the first task was to translate them and, consequently, to make Arabic, which was a language of the desert, a language of science." See his public lecture organised by UNESCO, "Islam and the flowering of the exact sciences," in *Islam, philosophy and science* (Paris: UNESCO Press, 1981), 133–67 (on p. 133).

[25] George Saliba, *Islamic Science and the Making of the European Renaissance* (Cambridge, MA: MIT Press, 2007), 1–72 passim.

[26] Ibid., 1–130 passim. See also the interesting discussion in Roshdi Rashed, "Greek into Arabic: Transmission and Translation," in James E. Montgomery, ed., *Arabic Theology, Arabic Philosophy, from the Many to the One: Essays in Celebration of Richard M. Frank* (Leuven, Belgium: Peeters, 2006), 157–198.

[27] Ibid.; see also Dimitri Gutas, *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Baghdad and Early ʿAbbasid* (London: Routledge, 1998).

[28] See, for instance, Mustafa Ceric, *The Roots of Synthetic Theology in Islām: A Study of the Theology of Abū Mansūr al-Māturīdī* (Kuala Lumpur: ISTAC, 1995).

[29] Abd al-Qāhir ibn Ṭāhir ibn Muhammad Abî Manṣūr al-Baghdādî (1037/429), *al-Farq bayn al-Firaq* (Beirut: Dār al-Maʿārif, 2001).

[30] Concerning these extra- and intra-communal politico-theological controversies, see respectively Daniel J. Sahas, *John of Damascus on Islam: The "Heresy of the Ishmaelites"* (Leiden:

Indeed, there were heated controversies amongst these opposing schools of thought as to the extent to which these Greek philosophico-scientific sciences were or were not in accord with the worldview of Islam projected into the minds of Muslims through their reading and understanding of the Qurʾān.[31] On the one hand, stood the Muslim philosophers (*falāsifah/ḥukamāʾ*), for example, al-Kindī (d. 866), al-Fārābī (d. 950), Ibn Sīnā (d. 1037) and Ibn Rushd who, on the whole, could be said to be more receptive than critical of the Greek speculative sciences. On the other hand, stood the Ashʿarite rationalist theologians (*mutakallimūn*) such as al-Ashʿarī (d. 935), al-Bāqillānī (d. 1013), al-Juwaynī (d. 1085),[32] al-Ghazālī (d. 1111), Fakhr al-Dīn al-Rāzī (d. 1209) and al-Bayḍāwī (ca. 1225—1316 CE) who could be said to be more critical than receptive to Greek rationality. Moreover, both camps were at the same time in heated engagement with the (more "conservative") Ḥanbalites, Muʿtazilites and Shīʿites.[33]

Even amongst the philosophers, Fārābian-Avicennan Aristotelianism was not received uncritically. A particular case in point is Abū al-Barakāt al-Baghdādī's (d. 1164) remarkable *Kitāb al-Muʿtabar*[34] which criticised Aristotelian physics and metaphysics just as al-Ghazālī had previously done so in his celebrated *Tahāfut al-Falāsifah*, and which prefigured much of the Fakhrurāzian wide-ranging polemics against peripateticism in general. Later on, even the so-called "anti-rationalist" Ibn Taymiyyah (1263—1328 CE) could not help but be appreciative of the *al-Muʿtabar* and its author and of Ibn Rushd himself while being rather critical of both Ibn Sīnā and al-Fakhr al-Rāzī.[35] In other words, to

---

Brill, 1972); and Josef van Ess, "ʿUmar II and His Epistle against the Qadariyya," in *Abr-Nahrain* XII (1971-72): 19–26. A survey in this regard is W. Montgomery Watt, *The Formative Period of Islamic Thought* (Edinburgh: Edinburgh University Press, 1973).

31 On the concept "Worldview of Islam" see al-Attas, *Prolegomena*, especially his forty-page Introduction, viz. (paraphrased from pp. 1–5), "The worldview of Islam is the vision of reality and truth that reveals to the Muslim mind what existence is all about. It is a metaphysical survey of the visible as well as the invisible worlds, including the perspective of life as a whole. In this holistic perspective of life, the *dunya*-aspect of life is thoroughly integrated into the *akhirah*-aspect of life, and in which the *akhirah*-aspect of life has ultimate and final significance."

32 On al-Juwaynī, see the useful introduction by Paul E. Walker, trans., *A Guide to Conclusive Proofs for the Principles of Belief:* Kitāb al-Irshād ilā Qawāṭiʿ al-Adilla fī Uṣūl al-Iʿtiqād (Reading: Garnet, 2000), xix–xxxvii.

33 See, for instance, the useful survey by Shlomo Pines, "Islamic Philosophy," in *The Collected Works of Shlomo Pines*, vol. III, *Studies in the History of Arabic Philosophy*, ed. Sarah Stroumsa (Jerusalem: Magnes Press, 1996); and Richard M. Frank, *Philosophy, Theology and Mysticism in Medieval Islam: Texts and Studies on the Development and History of Kalam*, 2 vols. (Aldershot, Hampshire: Ashgate, 2005—2007).

34 *Kitāb al-Muʿtabar*, 3 vols. in 1 book (Hyderabad: 1357H). A monograph on his metaphysics is Jamāl Rajab Sīdabī, *Abū al-Barakāt al-Baghdādī wa Falsafatuhu al-Ilāhiyyah: Dirāsah li Mawqifihi al-Naqdī min Falsafat Ibn Sīnā* (Cairo: Maktabah Wahbah,1996).

35 See Sulaymān al-Nadwī's informative introduction to the *Kitāb al-Muʿtabar*, 3 vols. in 1 (Hyderabad: 1357H), 3: 230–252. Ibn Taymiyyah's philosophical acumen is remarkably borne out in some recent meticulous studies, such as the two-part study by Yahya J. Michot, "A Mamlūk Theologian's Commentary on Avicenna's *Risāla Aḍḥawiyya*, being a translation of a part of the *Darʾ al-Taʿarruḍ* of Ibn Taymiyya, with introduction, annotation, and appendices," *Journal of Islamic Studies* 14, no. 2 (2003): 149–203, and *Journal of Islamic Studies* 14, no. 3 (2003): 309–363; and Jon Hoover, "Perpetual Creativity in the Perfection of God:

effectively attack the philosophers and the logicians—and this means engaging them on their own grounds, and bringing the battle to their turf, as it were—Ibn Taymiyyah was compelled to be superlative in philosophical and logical reasoning himself; there was simply no two ways to go about it.

Ironically, even surprisingly, the perceived intellectual threat of Hellenistic thought, particularly Aristotelianism in its Neoplatonic garb,[36] was in the end overcome by a gradual, self-conscious, and self-confident process of cooption of it into the orthodox Islamic theological framework on the part of post-Ghazālīan *mutakallimūn*. In this process, the Greek sciences were actively "appropriated" and "naturalised" to such an extent that Ibn Khaldūn in the 15th century was drawn to observe that one could no longer differentiate between *kalām* and *falsafah* so much have the two been fused together.[37]

It may be surmised that the eventual triumph of Ashʿarism (including Māturīdism and Ṭahāwism,[38] or Sunnism in general), was due to its creative intellectual versatility in co-opting or "appropriating" the rationalism of the Muʿtazilites and the *falāsifah* and the traditionalism of the Ḥanbalites into its own "synthetic" theological framework,[39] which "gave both *naql* and *ʿaql* their due, and took a middle course between the doctrines of the opposing sects."[40] It can be seen that this "middle" course was not a "neutral" uncommitted course but a critically integrative one which gives each view and each school its "proper place" in relation to other contending views and schools within what may be referred to as a hierarchic onto-epistemic "scale of truth-reality" in which *Kalām* theology was harmonised with and integrated into *Ṣūfī* metaphysics and ontology.[41]

---

Ibn Taymiyya's Hadith Commentary on God's Creation of this World," in *Journal of Islamic Studies* 15, no. 3 (2004): 287–329.

36 Parviz Morewedge, ed., *Neoplatonism in Islam* (Albany, NY: SUNY, 1992).

37 Ibn Khaldūn, *Muqaddimah*, trans. Franz Rosenthal, 3 vols. (New York: Pantheon Books, 1958), 3: 52–53; cf. A. I. Sabra, "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement," in *History of Science* 27 (1987): 223–43; see also Ayman Shihadeh, "From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology," in *Arabic Sciences and Philosophy* 15 (2005): 141–179.

38 A recent translation of al-Ṭaḥāwī's (d. 321/933) creedal statement is Hamza Yusuf, trans. *The Creed of Imam al-Ṭaḥāwī* (Zaytuna Institute, 2007).

39 On this "synthetic" (i.e., synthesizing) theological framework, see Mustafa Ceric, *Roots of Synthetic Theology in Islam: A Study of the Theology of Abū Manṣūr al-Māturīdī* (Kuala Lumpur: ISTAC, 1995).

40 Al-Māturīdī, *Kitāb al-Tawḥīd*, ed. and intro. Fathalla Kholeif (Beirut: Dar al-Machreq, 1982), xiii.

41 Al-Attas, *Prolegomena*, 177–332 passim; idem, *A Commentary on the Ḥujjat al-Ṣiddīq of Nūr al-Dīn al-Rānīrī* (Kuala Lumpur: Ministry of Culture, 1986); Syed Naguib al-Attas, *Some Aspects of Sufism as understood and practiced among the Malays* (Singapore: Malaysian Sociological Research Institute, 1963), 1–20 passim; Nūr al-Dīn ʿAbd al-Raḥmān ibn Aḥmad al-Jāmī, *al-Durrah al-Fākhirah fī Taḥqīq Madhhab al-Ṣūfiyyah wa al-Mutakallimīn wa al-Ḥukamāʾ al-Mutaqaddimīn*, trans. Nicholas Heer as *The Precious Pearl* (Albany, NY: SUNY, 1979). See also the nuanced, comprehensive discussions by Ayman Shihadeh in Ayman Shihadeh, ed., *Sufism and Theology* (Edinburgh: Edinburgh University Press, 2007), 1–14; and Toby Mayer, "Theology and Sufism," in Tim Winter, ed., *The Cambridge Companion to Classical Islamic Theology* (Cambridge: Cambridge University Press, 2008), 258–287. See also the yet-to-be-published doctoral study by Zaidi Ismail, "Existence (*al-Wujūd*) and Its Relation to Quiddity (*al-Māhiyyah*) in the later Ash'arite *Kalām*, with Special Reference to ʿAḍud al-Dīn al-Ījī's *al-Mawāqif* and al-Sayyid al-

Not only *kalām* and *falsafah* was fused together in this long process of intellectual appropriation and naturalisation (or even "Islamization" in the Attasian sense of the term),[42] but that all the four main mutually autonomous intellectual systems, namely, *kalām*, *falsafah*, *fiqh* and *usul al-fiqh*[43] and *taṣawwuf*[44] were fused together into a single, enlarged more encompassing and self-consciously integrative Orthodoxy, which thereby thoroughly *embeds* all the intellectual or discursive sciences (*ʿaqliyyāt*) into the firm ambit of divine revelation and prophetic tradition (*naqliyyāt/samʿiyyāt*). That was the singular achievement of al-Ghazālī's monumental *Iḥyāʾ ʿUlūm al-Dīn* (The Revivification of the Sciences of Religion), and eventually the whole Muslim world would come to endorse whole-heartedly that grand synthesis and proclaim him *Ḥujjat al-Islām*, The Proof of Islam.

In the *Iḥyāʾ*, the intellectual was delicately and elegantly fused with, or rather, *into* the religious and the spiritual, so much so that the intellectual man and the religious, spiritual man became one and the same man or woman;[45] at least, that was the case for centuries in the Islamic world before the relatively recent onslaught of secularisation brought on by colonisation and westernisation which systematically banished all people of religious vision from having any meaningful, *directive* role in the realm of the mundane and the worldly and the discourse pertaining to it.

### 3. Al-Ghazālī and the New *Kalām* (*Kalām Jadīd* )

Instead of impeding philosophico-scientific thought in Islam, al-Ghazālī's *Tahāfut al-Falāsifah*, by the intense positive and negative responses it provoked amongst scientists and philosophers through subsequent centuries, actually did much to hasten this process of critical, self-conscious deconstruction, reconstruction, synthesis and naturalisation. In relation to the new kalam's engagement with astrology and astronomy, for instance, George Saliba says that:

> It forced the scientists to redefine their disciplines and to attempt to achieve the consistency that they perceived to have been lacking

---

Sharīf ʿAli al-Jurjānī's *Sharḥ al-Mawāqif*," (Kuala Lumpur: ISTAC, 2004), especially pp. 236—237.

42 On the definition of "Islamisation," see Syed Muhammad Naquib al-Attas, *Islam and Secularism* (Kuala Lumpur: ISTAC, 1993), 44–45.

43 Wan Azhar Wan Ahmad, "The Place of Reason vis-a-vis Revelation in Imām al-Ḥaramayn al-Juwaynī's Legal Theory: A Symbiosis between His *Kalām* and *Uṣūl al-Fiqh*." Ph.D. diss., International Institute of Islamic Thought and Civilization (ISTAC), International Islamic University Malaysia (IIUM), 2006. See also Umar F. Abd-Allah, "Theological Dimensions of Islamic Law," in Tim Winter, *The Cambridge Companion to Islamic Theology*, 237–257.

44 That is, *taṣawwuf* in its metaphysical, cognitive or *mukāshafah* or gnostic mode, i.e., in the form of metaphysical Sufism, in contrast to its more popular and accessible ethical, practical or *muʿāmalah* or pragmatic mode.

45 As in the remarkable case of Ibn al-Nafīs; see Nahyan Fancy, "The Virtous Son," 219–248. See also Gerhard Endress, "Reading Avicenna in the *Madrasa*," in James E. Montgomery, ed., *Arabic Theology, Arabic Philosophy, from the Many to the One: Essays in Celebration of Richard M. Frank* (Leuven, Belgium: Peeters, 2006), 371–424.

> in the Greek legacy. That new reconstruction had very positive effects on the making of what later became a truly Islamic science.[46]

The *Tahāfut* marked the rise of the new philosophical *kalām* (*kalām jadīd*) which was characterised by an aggressive, self-confident, thoroughgoing polemic against Avicennian *falsafah* on the latter's own conceptual, methodological, analytical and logical terms, a polemic which ended with the former taking over as its own much of the ground covered by the latter.[47] By the time al-Ghazālī passed away, logic (*manṭiq*) was naturalised as a conceptual tool for *kalām* and *fiqh*. Moreover, by the time of al-Rāzī and his successors, logic was well on its way to becoming a self-contained Islamic discipline in its own right,[48] while the subject matter of *falsafah* was as a whole thoroughly integrated into the new *kalām*. As Elder puts it, "New proofs were forthcoming which made use of the physics, metaphysics and mathematics of the philosophers."[49] Similarly, Nicholas Heer says:

> In the wake of al-Ghazzālī there eventually came to be an increasingly close bond between logic and theological study. The theologian must be able to assess the weight of contending views, distinguish the demonstrative (*ṣaḥīḥī*) from the dialectic (*jadalī*), the merely persuasive (*iqnāʿī*), the sophistic (*mughālaṭī*), and the poetic (*shiʿrī*). Thus logic increasingly came to be accepted as an essential instrument for theology as well as other branches of knowledge.[50]

In recognition of the pivotal roles of al-Ghazālī and al-Rāzī in the rise and establishment of the new *kalām*, Ibn Khaldūn says: "The first (scholar) to write in accordance with the (new) theological approach was al-Ghazālī. He was followed by the Imām ibn al-Khaṭīb [i.e., Fakhr al-Dīn al-Rāzī]. A large number of scholars followed in their steps and adhered to their tradition."[51]

---

46 George Saliba, "The Ash'arites and the science of the stars," in Richard G. Hovannisian and George Sabagh, eds., *Religion and Culture in Medieval Islam* (Cambridge: Cambridge University Press, 1999), 79—92, on 90. For an interesting, nuanced discussion comparing the contending views of Hoodbhoy and Saliba, see Arun Bala, "Did Medieval Islamic Theology Subvert Science?," in George Gheverghese Joseph and Burjor Avari, *Knowledge and Cultures: Crossing Boundaries in History* (Manchester: Manchester Metropolitan University, 2009).

47 Al-Ghazālī, *The Incoherence of the Philosophers*, trans. Michael Marmura (Provo, Utah: Brigham Young University Press, 2000), xv–xvi; Binyamin Abrahamov, "Ibn Sīnā's Influence on al-Ghazālī's Non-Philosophical Works," in *Abr-Nahrain*, vol. XXIX (1991), 1—17; Jules Janssens, "Al-Ghazzālī's *Tahāfut*: Is It Really a Rejection of Ibn Sīnā's Philosophy?," in *Journal of Islamic Studies*, 12:1 (2001), 1—17.

48 Nicholas Rescher, *The Development of Arabic Logic* (Pittsburgh: University of Pittsburgh Press, 1964), 51–54, and 57ff. See also, Farid Shahran, "Fakhr al-Dīn al-Rāzī's Logic: An Edition of his *Mulakhkhaṣ fī al-Ḥikmah wa al-Manṭiq* (Section on *Taṣawwurāt* and *al-Ḥadd*)," M.A. Thesis (Kuala Lumpur: ISTAC, 1999), 1—22.

49 Earl Edgar Elder, trans., *A Commentary on the Creed of Islam: Saʿd al-Dīn al-Taftāzānī on the Creed of Najm al-Dīn al-Nasafī* (New York: Columbia University Press, 1950), xvi.

50 Nicholas Rescher, *Development of Arabic Logic*, 51. See also his *Studies in the History of Arabic Logic* (Pittsburgh: University of Pittsburgh Press, 1963).

51 Ibn Khaldūn, *Muqaddimah*, 3: 43.

Eventually, through the intellectual example and influence of al-Ghazālī, and then al-Rāzī, the original threatening Hellenistic background faded into oblivion and *falsafah* was gradually Islamised until it became totally transformed into a "naturalised" Islamic science in the form of *ḥikmah ishrāqiyyah* (which can be read as metaphysical Sufism/mysticism) at the hands of al-Suhrawardī (549—587/1154—1191) and his successors, [52] and in the form of *manṭiq* and philosophical *kalām* at the hands of al-Rāzī and his successors from Sayf al-Dīn al-Āmidī[53] (d. 551—631/1156—1234) to al-Bayḍāwī (ca. 1225—ca. 1316 CE),[54] al-Ījī (d. 1355 CE), al-Taftāzānī (d. 1390 CE), and al-Jurjānī (d. 1413 CE), [55] and leading eventually to the profound Sufi metaphysical synthesis of the contending falsafah and kalam perspectives in al-Jāmī's *al-Durrah al-Fākhirah*.[56]

Indeed, there would always be influential detractors, for example Ibn Taymiyyah (d. 1328 CE) and al-Suyūṭī[57] (d. 1505 CE); or scholars of the caliber of say, Tāj al-Dīn al-Subkī (d. 771/1370), for instance, who, though supportive of *kalām*, voiced his misgivings over what he perceived to be some of *kalām jadīd*'s excesses.[58] In any case for all intents and purposes, *falsafah* in the guise of *kalām*,

---

[52] Mehdi Amin Razavi, *Suhrawardī and the School of Illumination* (Surrey: Curzon Press, 1997); also, Ian Richard Netton, *Allāh Transcendent: Studies in the Structure and Semiotics of Islamic Philosophy, Theology and Cosmology* (London: Routledge, 1989), 256ff. Cf. Bilal Kuspinar, *Ismāʿīl Ankaravī on the Illuminative Philosophy*: *His* Īzāḥu'l-Ḥikem*: Its edition and analysis in comparison with Dawwānī's* Shawākil al-Ḥūr*, together with the translation of Suhrawardī's* Hayākil al-Nūr (Kuala Lumpur: ISTAC, 1996).

[53] Syamsuddin Arif, "Al-Āmidī's Reception of Ibn Sīnā: Reading *al-Nūr al-Bāhir fī al-Ḥikam al-Zawāhir*," in Langermann, ed., *Avicenna and His Legacy*, 205–217.

[54] Edwin E. Calverly and James W. Pollock, trans. and eds., *Nature, Man and God in Medieval Islam: ʿAbd Allah Baydawi's Text Tawaliʿ al-Anwar min Matāliʿ al-Anzar, along with Mahmud Isfahani's Commentary Matāliʿ al-Anzar Sharh Tawaliʿ al-Anwar*, 3 vols. (Brill: Leiden, 2002).

[55] Shlomo Pines, "Some Problems of Islamic Philosophy," in *Islamic Culture* (January 1937): 66–80 (on pp. 68–9, 80). The reading of *kalām* as philosophical is reflected in the title and substance of the monumental work by Harry Austryn Wolfson, *The Philosophy of the Kalām* (Cambridge, MA: Harvard University Press, 1976). Though useful and thoroughly informative, it is unfortunately marred by a too-hasty tendency to "hunt" for parallels to, hence sources of, *kalām* theories in classical, hellenistic and patristic theological thought and concepts. A compelling reaction to this is R. M. Frank, who, in his presidential address "Hearing and saying what was said," said that ". . . the highly nuanced language of the classical *kalām* was developed in an ongoing process of autonomous discourse in Arabic." See *Journal of American Oriental Society (JAOS)* 116, no. 4 (1996): 615.

[56] Nūr al-Dīn ʿAbd al-Raḥmān ibn Aḥmad al-Jāmī, *al-Durrah al-Fakhirah*, trans. Nicholas Heer, *The Precious Pearl* (New York: SUNY, 1979). Cf. Syed Muhammad Naquib al-Attas, *Commentary on the Ḥujjat al-Ṣiddīq of Nūr al-Dīn al-Rānirī*. The influence of the *Iḥyā'* on Ibn -ʿArabī's *Futuḥāt* is also apparent; see, for instance, Binyamin Abrahamov, "Ibn al-ʿArabī's attitude toward al-Ghazālī," in *Avicenna and His Legacy*, ed., Y. Tzvi Langermann (Turnhout, Beligium: Brepols, 2009). 101—116.

[57] Jalāl al-Dīn al-Suyūṭī *Ṣawn al-Manṭiq wal-Kalām ʿan Fann al-Manṭiq wal-Kalām*, bound in one volume with his abridgement of Taqī al-Dīn ibn Taymiyyah, *Naṣīḥat Ahl al-Īmān fī Radd ʿalā Manṭiq al-Yūnān*, ed. ʿAlī Sāmī al-Nashshār (Cairo, 1947).

[58] Tāj al-Dīn al-Subkī, *Muʿid al-Niʿam*, 79–80, cited in Keller "*Kalam* and Islam," 22 and 27n.2 (italics mine). However, for a sensitive, nuanced treatment, see Talal al-Azem, "Traditionalism against Scholasticism: The Debate over Curriculum in Damascus between 1150—1350," Master's thesis (University of Oxford, 2007), where he notes (p. 38), *inter alia*, that al-Subkī's "*Jamʿ al-Jawāmiʿ* is viewed as a milestone in scholastic jurisprudence (*uṣūl al-*

and *manṭiq* as a conceptual tool became thoroughly Islamised and firmly entrenched in mainstream traditional Islamic education from the Maghrib[59] to the Malay Archipelago.[60] It is against this general intellectual historical background that one must situate and evaluate the significance of the impact of al-Ghazālī and al-Rāzī and their works on the process of the Islamization of the intellectual and empirical sciences.

## 4. The Ghazālian-Fakhrurāzian Investigative (*Tabayyunī*) Approach and Its Historical Impact

The works of al-Ghazālī and al-Fakhr al-Rāzī marked a historic turning point in the long "movement of thought"[61] in the Sunni *kalām* engagement with Hellenistic philosophy and science from al-Ashʿarī (d. 935 CE), al-Māturīdī (d. 944 CE), al-Bāqillānī (d. 1013 CE), al-Juwaynī (d. 1085 CE) and al-Rāzī (d. 1206 CE), al-Nasafī (ca. d. 1142 CE), al-Shahrastānī (d. 1153 CE) to al-Āmidī (d. 1233 CE), al-Bayḍāwī (d. ca. 1316 CE), al-Ījī (d. 1355 CE), al-Taftāzānī (d. 1390 CE) and al-Jurjānī (d. 1413 CE). This movement of thought integrated theological, philosophical and scientific themes, and resulted in a resurgent full-fledged philosophical *kalām* or dialectics (called *kalām jadīd* or the "new dialectics") characterised by an unapologetic self-confident "investigative" reelucidation of traditional Islamic beliefs (*naqliyyāt*) on rational principles (*mabādīʾ ʿaqliyyah*).

As Sabra sees it, "kalām was an argumentative approach to religion which sought, through discussion and discursive thought, to interpret and transform the content of the Islamic revelation into a rationally-based doctrine,"[62] and as such, it was a "genuine form of knowledge" that is essentially not apologetic nor polemical in its intellectual goals, for:

> The *mutakallimūn* in particular made it their business to meet the *falāsifa* on their own ground, not however by merely arguing against their opponent's views, but by being able to produce a distinct body of thought that proved powerful and elaborate enough to function as a substitute for *falsafa*.[63]

---

*fiqh ʿala ṭarīqat al-mutakallimīn*), and was studied by Shafiʿites, Malikites, and even Ḥanbalites across the Muslim world, as it continues to be in traditional seminaries even today."

59 For the case of the Maghrib, the educational role of Abū ʿAbd Allāh al-Sanūsī (d. 1490) and his *Umm al-Barāhīn* is significant; see article on him in *EI2* by H. Bencheneb, s.v., "al-Sanūsī," with copious references.

60 For the case of the Malay Archipelago, see, for instance, al-Attas, *The Oldest Known Malay Manuscript*, 1–52 passim. For the reception of the *Umm al-Barāhīn* in the Malay-Islamic world, see Che Razi Jusoh, "Al-Sanūsī's *Umm al- Barāhīn* in its Malay exposition: with an annotated transliteration and translation of the Malay text," (Master's thesis, International Institute of Islamic Thought and Civilization (ISTAC), 2000)

61 A. I. Sabra, "Science and Philosophy in Medieval Islamic Theology: the Evidence of the fourteenth Century," *Zeitschrift Für Geschichte der Arabisch-Islamischen Wissenschaften* (*ZGAIW*) 9 (1994): 1–42 (on p. 23); see also his, "*Kalām* Atomism as an Alternative to Hellenizing *Falsafa*," in Montgomery, *Arabic Theology*, 199–272.

62 Sabra, "Science and Philosophy," 11.

63 Ibid., p. 23 n. 24.

In short, the kalam approach is one of *both* negative and positive critique. Sabra applies this characterisation to both Muʿtazilite and Ashʿarite *kalām*,[64] and in this regard, one finds ready support for him in R. M. Frank,[65] and in the important recent, as yet unpublished doctoral dissertation of Muhammad Afifi al-Akiti.[66]

Al-Akiti notes that within a century of al-Ghazālī's thoroughgoing "disassembling," and "reassembling" of *falsafah*,

> The Eastern Islamic world saw the emergence of a new kind of religious scholar: the madrasah-trained, orthodox Sunni who was an Ashʿarī theologian as well as a Shāfiʿī jurist. These scholars included Fakhr al-Dīn al-Rāzī, Sayf al-Dīn al-Āmidī (d. 631/1234) and ʿAbd al-Laṭīf al-Baghdādī (d. 629/1231–32)—all of whom were well-versed in the *ilāhiyyāt* and in the rest of the theoretical sciences of the medieval tradition of *falsafa*, including ontology, cosmology, and psychology. Unlike their founding father [i.e., al-Ghazālī], who could only philosophize behind closed doors to a restricted audience, they were able to publish their *ilāhiyyāt* and *falsafī* works in the full light of day.[67]

We may continue to quote at some length some of al-Akiti's multifaceted conclusions on the net harvest of al-Ghazālī's engagement with *falsafah*:

> The arguments of these three works—the *Maḍnūn*, the *Tahāfut*, and the *Maqāṣid*—are mainly presented at the highest scholarly level, that of *burhān*, a style of exposition which is itself a result of al-Ghazālī's engagements with the *falāsifa*. For al-Ghazālī, *burhān*—but not kalam—is what he considered to be scientific knowledge, the 'gold standard' in the art of reasoning—a judgement expounded in his *Miʿyār al-ʿilm*. This standard is higher than what was offered in the tradition from which he emerged and the traditional proofs which he rehearses (or should we say 'preserves') in the *Iqtiṣād* . . . .
>
> Al-Ghazālī made the art of *burhān* acceptable in the *Weltanschauung* of Islam's religious scholars. In time, that allowed Aristotelianizing theologians to emerge in the traditional Muslim Ashʿarite school, men such as Fakhr al-Dīn al-Rāzī (d. 606/1209–10)—a *doctor subtilis*

---

64 See also A. I. Sabra, "The Simple Ontology of *Kalam* Atomism: An Outline," in *Early Science and Medicine* 14 (2009): 68–78; and idem, "*Kalām* Atomism," 199–272.

65 Sabra, "Science and Philosophy," 11; R. M. Frank, "The Science of Kalām," in *Arabic Sciences and Philosophy* 2 (1992): 7–37; cf., idem, "The *Kalām*, an Art of Contradiction-Making or Theological Science?: Some Remarks on the Question," review article in *JAOS* 88 (1968): 295–309.

66 Al-Akiti, "The *Maḍnūn* of al-Ghazali: A Critical Edition of the Unpublished Major *Maḍnūn* with Discussion of his Restricted, Philosophical Corpus" (Ph.D. diss., University of Oxford, 2008); see also idem, "The Good, the Bad, and the Ugly of Falsafa: Al-Ghazālī's *Maḍnūn*, *Tahāfut*, and *Maqāṣid*, with Particular Attention to their Falsafi Treatments of God's Knowledge of Temporal Events," in Langermann, *Avicenna and His Legacy*, 51–100.

67 Al-Akiti, "The Good, the Bad, and the Ugly" 94–95 (words in square brackets mine).

in his own right. Indeed, al-Ghazālī was the first among this new breed of scholastic theologians: a committed rationalist of the Aristotelian sort, yet equally a spokesperson for the Sunni, orthodox tradition (and also, of course, a strong advocate of Sufism).

However, the earlier disputes between Arabic grammar and Greek logic—best exemplified in the famous debate between Abū Saʿīd al-Sirāfī (d. 368/979) and Abū Bishr Mattā (d. 328/940) over the legitimacy of Aristotelian logic—still loomed large in the memories of many in the community of religious scholarship to which al-Ghazālī belonged. Yet al-Ghazālī did what the eminent grammarian Ibn al-Sarrāj was unable to do, which was, in effect, to resolve the quarrels between those two sides and, indeed, marry them off. [68]

## 5. The Investigative (*Tabayyunī*)[69] Nature of Dialectical Theology

"Investigation" or "research" is the key word in *al-Ḥathth ʿalā al-Baḥth* (*The Exhortation to Investigation*), the title given by the great al-Ashʿarī himself to his work for the purpose of encouraging the study of *kalām* or rationalistic theology.[70] This rigorous intellectual work of investigation and research toward objective truth by engaging the sciences of the day became the governing scholarly ethos of subsequent *mutakallims*. Hence, we may say that, in this regard, al-Ghazālī was preceded by al-Ashʿarī, and he, perhaps, took his cue from him.

According to Marmura, al-Ghazālī's *Tahāfut al-Falāsifah* (Incoherence of the Philosophers) was third in an integral, investigative series of four works in which he expounded on the rational methodology of the philosophers (*Miʿyār al-ʿIlm*, i.e., The Gauge of Knowledge), summarised their cognitive objectives (*Maqāṣid al-Falāsifah*, i.e., The Objectives of the Philosophers), exposed the internal inconsistencies of their philosophical belief system (*Tahāfut al-Falāsifah*) and finally expounded on the true beliefs of Islam as he understood them (*al-Iqtiṣād fī al-Iʿtiqād*, i.e., The Golden Mean of Belief). Al-Akiti's detailed study of the al-Ghazālī's *Maḍnūn* corpus further reinforces this notion of "scientific investigation"—"scientific" due to its inherently cognitive, constructive and positive nature, rather than merely dialectical, argumentative, reactive and apologetic. As Langermann puts it in his excellent summary of al-Akiti's ample, detailed study:

---

[68] Ibid., 91. Cf. Frank Griffle, *Al-Ghazali's Philosophical Theology* (Oxford: Oxford University Press, 2009.

[69] In allusion to the verse "if a vicious person brings any news, try to get at the facts" (*in jāʾakum fāsiqun bi nabaʾin fatabayyanū*), *sūrah al-Ḥujurāt* (49): 6, trans. Thomas Cleary, *The Qurʾan, A New Translation* (Starlatch, 2004), 255.

[70] R. M. Frank, trans. & ed., "al-Ashʿarī's *Kitāb al-Ḥathth ʿalā al-Baḥth*," in *Mélanges de l'Institut Dominicain d'Études Orientales du Caire* (*MIDEO*) 18 (1988): 83–152; cf. Alnoor Dhanani, *The Physical Theory of Kalām* (Leiden: Brill, 1994), 2–3, for *kalām* as a "research program."

> Afifi al-Akiti detects, uncovers, and displays three levels of writing in al-Ghazālī's approach to *falsafa* (hellenistic philosophy), particularly as formulated for the Muslim public by Ibn Sīnā. He presents this philosophy as ugly in his *Maqāṣid* (Intentions of the Philosophers): it appears ugly because he includes without comment teachings that are clearly unacceptable. However, in his *Tahāfut* (Incoherence of the Philosophers), this same philosophy is presented as merely bad: specific faults are identified and criticized. Finally, in the corpus of texts known as the *Maḍnūn* (restricted), philosophy is seen to be good; sound philosophical doctrines are exploited in order to formulate key Muslim beliefs… Al-Ghazālī's project allows him to present a coherent explanation of the world, expressed in traditional terms, whose rationale derives from Avicennan science and philosophy; but he is also able to articulate the traditional, orthodox faith in philosophical terms. The differences in presentation between the good, the bad, and the ugly often amount, as al-Akiti amply demonstrates, to nothing more than the addition or excision of a single word or phrase. In doing so, al-Ghazālī puts into practice a dictum attributed to ʿAlī, the Prophet's nephew, which states that the true and the false can be very similar indeed, just like the venom of a snake so closely resembles its antidote.[71]

Similarly, al-Fahkr al-Rāzī's early work critically engaging Avicennan thought was entitled *al-Mabāḥith al-Mashriqiyyah* (*The Eastern Investigations*). The *Mabāḥith* was already at this early stage of his scholarly career a work very critical of Avicennan philosophy, somewhat in the spirit of Abū al-Barakāt's *Kitāb al-Muʿtabar*, or even as some have asserted, in the spirit of al-Ghazālī's *Tahāfut*.[72] It cannot be said that he started out as a straight-forward peripatetic philosopher and ended up eventually to become a straightforward Ashʿarite *mutakallim*. Rather, his intellectual journey was highly nuanced from the very beginning to the very end, as indicated by the title of his last philosophico-*kalām* work, *al-Maṭālib al-ʿĀliyah*, which may be roughly translated as *The Lofty Researches*.[73]

Although the century after al-Ghazālī witnessed some notable *mutakallimūn* such as al-Nasafī and al-Shahrastānī,[74] al-Rāzī is still clearly the first post-

---

71 Langermann, "Foreword," in *Avicenna and His Legacy*, viii–ix.

72 Muḥammad ʿĀṭif al-ʿIrāqī, *al-Falsafah al-Ṭabīʿiyyah ʿinda Ibn Sīnā* (Cairo: Dār al-Maʿārif, 1971), 414; cf. Abd al-Raḥmān al-Badawī, *al-Turāth al-Yūnānī fī al-Ḥaḍārah al-Islāmiyyah* (Cairo: Dār al-Nahḍah al-ʿArabiyyah), p. 270 n. 1; cf. Muḥammad al-ʿUraybī, *Munṭalaqah al-Fikriyyah ʿinda al-Imām al-Fakhr al-Rāzī* (Beirut: Dār al-Fikr al-Lubnānī, 1992), 44; cf. discussion in Ṣālih Zarkān, *Fakhr al-Dīn al-Rāzī wa Arāʾuhū al-Kalāmiyyah wa al-Falsafiyyah* (Cairo: Dār al-Fikr, 1963), 85ff.

73 For a preliminary study of his physical theory largely based on his *Maṭālib*, see Adi Setia, "The Physical Theory of Fakhr al-Dīn al-Rāzī," doctoral dissertation (Kuala Lumpur: ISTAC, 2005).

74 Among others, he wrote the contra-Avicennan *Kitāb al-Muṣāraʿah*, ed. and trans. by Wilfred Madelung and Toby Mayer (London: I. B. Tauris, 2001); and a treatise on atomism, see Aḥmad Saʿid al-Damardash, "*Makhṭūṭaṭ al-Sharastānī ʿan al-Jawhar al-Fard*," in *Majallat Maʿhad al-Makhṭūṭaṭ al-ʿArabiyyah*, 25 (1979): 195–218.

Ghazālīan *mutakallim* who brought to comprehensive realisation the intellectual project of close, detailed and comprehensive critical engagement with Greek philosophy initiated by al-Ghazālī in his *Maqāṣid al-Falāsifah* and *Tahāfut al-Falāsifah*. While al-Ghazālī succeeded in integrating Aristotelian logic into the principles of *kalām* and *fiqh*, al-Rāzī managed further to critically integrate much of the subject matter of Aristotelian metaphysics and physics into his many *kalām* and *falsafah* works, including his great commentary on the Qurʾān, *al-Tafsīr al-Kabīr* (The Great Exegesis), otherwise known as *Mafātīḥ al-Ghayb* (Keys to the Unseen).[75]

He is noted by Dhanani as the first *mutakallim* to discuss space and time in a comprehensive manner,[76] and probably the first also to undertake a critical comparative study of atomism and hylomorphism of any comprehensive scope and intensity of treatment.[77] This versatility is no doubt due in large part to his own intimate, first-hand knowledge of the philosophical and empirical sciences such as logic, physics, medicine, mathematics and astronomy, in addition to his complete mastery of the traditional Islamic sciences.[78] Hence, it is hardly surprising that "here Fakhr al-Dīn al-Rāzī was to become al-Ghazāli's most influential continuator,"[79] and perhaps also his "completor."

According to Marmura, al-Ghazālī's *Tahāfut* can be interpreted as a response to Ibn Sīnā's "wide-ranging criticisms of the *kalām*."[80] However, in launching his wide-ranging counter-attack, Al-Ghazālī could not avoid being persuaded to some extent by the obvious objective cognitive merits of his adversary,[81] hence, his appropriation of some key Avicennan ideas to flesh out his basically Ashʿarite framework.[82] As al-Ghazālī's "most influential continuator," and most probably also "the most outstanding Sunnite figure"[83] after him, al-Rāzī took up where the former had left off, and intensified the debate with Ibn Sīnā,

---

75 (Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 1977).

76 Alnoor Dhanani, "Al-Ghazālī's Perspective on Physical Theory," paper presented to the International Conference on al-Ghazālī's Legacy, ISTAC, Kuala Lumpur, October 24–27, 2001, pp. 6–7.

77 Adi Setia, "The Physical Theory of Fakhr al-Dīn al-Rāzī," doctoral dissertation (Kuala Lumpur: ISTAC, 2005).

78 Zarkān, *Fakhr al-Dīn al-Rāzī*, 37–55.

79 Gerhard Endress, "The Defense of Reason: The Plea for Philosophy in the Religious Community," *ZGAIW* 6 (1990): 1–49 (on p. 37).

80 Michael Marmura, "Avicenna and the *Kalām*," *ZGAIW* 6 (1990), 173–206 on 206.

81 Binyamin Abrahamov, "Ibn Sīnā's Influence on al-Ghazālī's Non-Philosophical Works," in *Abr-Nahrain*, vol. XXIX (1991), 1—17; Jules Janssens, "Al-Ghazzālī's *Tahāfut*: Is It Really a Rejection of Ibn Sīnā's Philosophy?," in *Journal of Islamic Studies*, 12:1 (2001), 1—17; Richard M. Frank, "Al-Ghazali's Use of Avicenna's Philosophy," in *Revue des Etudes Islamiques*, 55—57 (1987—89), 271—285.

82 Richard M. Frank's misgivings notwithstanding; see his *Creation and the Cosmic System: Al-Ghazālī and Avicenna* (Heidelberg: Carl Winter Universitatsverlag, 1992).

83 Fathallah Kholeif, ed. and trans., *A Study of Fakhr al-Dīn al-Rāzī and His Controversies in Transoxiana* (Beirut: Dar el-Machreq, 1966), 6. Tāj al-Dīn al-Subkī considers him to be the *mujaddid* after al-Ghazālī; see Tāj al-Dīn al-Subkī ʿAbd al-Wahhāb ibn ʿAlī al-Subkī, *Ṭabaqāt al-Shāfiʿiyyah al-Kubrā*, ed. M. Tanahi et al., 5 vols. (Beirut, 1992), 1: 202.

even while Ibn Rushd, his contemporary in the Islamic far west, was preparing his own counter-*Tahāfut* to criticise both Ibn Sīnā *and* al-Ghazālī.[84]

Al-Ghazālī's engagement with *falsafah* was such that he can be said to have succeeded in "kalāmising" philosophy and, as an unavoidable consequence, "philosophising" *kalām*, thus integrating (if not "con-fusing") the two originally separate intellectual disciplines. Such is the judgement of Ibn Khaldūn, and one cannot but agree with him somewhat after even a cursory reading of al-Rāzī's works.[85]

So it seems that historically the "exciting intellectual combat"[86] between *falsafah* and *kalām* has always been a dynamic two-sided affair, with blows and counter-blows actively exchanged and no implications, however nuanced or subtle, left hidden and unexplicated. *Kalām* may have won finally[87] but as can be surmised from Ibn Khaldūn's and Tāj al-Dīn al-Subkī's remarks, the victory was somewhat bitter-sweet—*kalām* ended up thoroughly imbued with the philosophising spirit which demands of Muslims that they, as responsible thinking individuals, be self-conscious and self-critical about their beliefs, al-Ghazālī's (somewhat ambivalent?) *Iljām al-ʿAwāmm* notwithstanding.[88] Just as the unexamined life was not worth living (as it would be aimless), so it was as if the unexamined faith was not worth keeping (as it could be easily shaken and corrupted by doubts generated by the onslaught of alien ideas).

The long-term intellectual consequences of al-Ghazālī's and after him, al-Rāzī's wholesale creative "appropriation" of the philosophical sciences into *kalām* discourse was duly, if critically and even reluctantly, appreciated not only by subsequent Ashʿarite *mutakallimūn* but also by Ḥanbalite theologians such as Ibn Taymiyyah,[89] and by the formulators of Shīʿī *kalām* in the Persian East, such as al-Ṭūsī (d. 1274),[90] and the Christian scholastics of the late medieval Latin West.[91]

---

84 Simon van den Bergh, trans., *Averroes' Tahāfut al-Tahāfut* (London: Luzac, 1978). An aspect of this Ibn Rushd-Ghazālian debate is well summarised by George F. Hourani, "The Dialogue between al-Ghazālī and the Philosophers on the Origin of the World," 2 parts, in *Muslim World* 48 (1958).

85 Ibn Khaldūn, *Muqaddimah*, 3: 43.

86 Hourani, "Dialogue," 183.

87 Interestingly Hourani ("Dialogue," p. 191) judges Ibn Rushd argumentative performance to be "disappointing," as does van den Bergh (*Averroes*, p. 20, and p. 23. n. 1).

88 Al-Ghazālī, *Iljām al-ʿAwāmm ʿan ʿIlm al-Kalām*, trans. Abdullah bin Hamid Ali, *A Return to Purity of Faith* (Philadelphia: Lamppost, 2008).

89 See, for instance, Hoover, "Perpetual Creativity," 287–329.

90 Seyyed Hossein Nasr, "Fakhr al-Dīn al-Rāzī," in *A History of Muslim Philosophy*, ed. M. M. Sharif, 2 vols. (Delhi: D. K. Publications), 1: 642–656 (on p. 646). Cf. editor's introduction to al-Rāzī's *al-Maṭālib al-ʿĀliyah*, ed. Aḥmad Ḥijāzī al-Saqqā, 9 vols. in 5 books (Beirut: Dār al-Kitāb al-ʿArabī, 1987), vol. 8–9, pp. 12ff. Naṣīr al-Dīn al-Ṭūsi can be said to be the pivotal figure who helped Avicennan philosophy recover somewhat from the Fakhrurāzian onslaught. See also Hans Daiber, "Al-Ṭūsi, Naṣīr al-Dīn," in *EI2*.

91 Pines, "Some Problems," p. 68 n. 2; cf. Hans Daiber, unpublished ISTAC lectures, parts 5 and 6 with copious invaluable references.

The intellectual impact of this new *kalām* as manifested about two centuries later in al-Ījī's *al-Mawāqif* and al-Jurjānī's commentary on it[92] was also felt by medieval Jewish thinkers[93] and the thinkers, philosophers and scientists of the European Renaissance and Enlightenment who shared with the *mutakallimūn* "a determined rejection of Aristotelianism and a preference for experimentation with various forms of atomism, as well as, the belief in an omnipotent and free creator."[94]

One may also add that the new *kalām* also impacted on early modern European explorations of various forms of occasionalism and their epistemological, cosmological and theological implications. [95] Modern-day Christian creationist theologians and philosophers have also not failed to notice the Ghazālian-Fakhrurāzian intellectual historical link in the further development of the *kalām* cosmological argument and its fine-tuning in modern physical, philosophical and mathematical terms.[96]

## 6. *Kalām Jadīd* and Contemporary Concerns

The whole point of this schematic sketch of the intellectual historical impact and relevance of the new *kalām* shall be, in what follows, elaborated insofar as it may interest thinking Muslims today who are deeply concerned about how to intelligently and effectively engage the all-enveloping secular modernity and its intellectually seductive language of discourse.

I have to say that Muslim progress in appreciating their rich intellectual heritage will not be boosted by the prevailing negative attitude, implicit or

---

92 ʿAḍud al-Dīn ʿAbd al-Raḥmān ibn Aḥmad al-Ījī, *Kitāb al-Mawāqif fī ʿIlm al-Kalām*, ed. Ibrāhīm al-Dusūqī ʿAtiyyah and Aḥmad al-Ḥanbuli (Cairo: Matbaʿat al-ʿUlūm); al-Sayyid al-Sharīf ʿAlī ibn Muḥammad al-Jurjānī, *Sharḥ al-Mawāqif fī ʿIlm al-Kalām* (Beirut: Dār al-Jīl, 1997).

93 For instance, Maimonides, *Guide of the Perplexed*, trans. Shlomo Pines, 2 vols. (Chicago: University of Chicago Press, 1963), 1: 179ff. Shlomo Pines notes that al-Rāzī's *al-Mabāḥith al-Mashriqiyyah* was already translated into Hebrew in the fourteenth century and used as a basis for the Hebrew version of al-Ghazālī's *al-Maqāṣid al-Falāsifah*. See his *Studies in Islamic Atomism*, trans. Michael Schwarz and ed. Tzvi Langermann (Jerusalem: Magnes Press, 1997), p. 97 n. 152. On the influence of the *Maqāṣid* and the *Tahāfut* on medieval Jewish thinkers, see Steven Harvey, "Avicenna's Influence on Jewish Thought," in Langermann, *Avicenna and His Legacy*, 338–339. Cf. Harry Austryn Wolfson, *Repercussions of the Kalam in Jewish Philosophy* (Cambridge, MA: Harvard University Press, 1979).

94 Sabra, "Science and Philosophy," 52. A separate, detailed inquiry is obviously needed regarding late *kalām* influence on the metaphysical foundations of early modern science.

95 On early modern European atomism and occasionalism in relation to *kalām* atomism, see John Lane Bell, *The Continuous and the Infinitesimal in Mathematics and Philosophy* (Milan: Polimetrica, 2006), especially Chapter 1, "The Continous and the Discrete in Ancient Greece, the Orient, and the European Middle Ages," pp. 21–62; James Fredrick Naify, "Arabic and European Occasionalism: A Comparison of al-Ghazali's Occasionalism and Its Critique by Averroes with Malebranche's Occasionalism and Its Criticisms in the Cartesian Tradition" (Ph.D. diss., University of California, San Diego, 1975); Majid Fakhry, *Islamic Occasionalism and its Critique by Averroes and Aquinas* (London: George Allen & Unwin, 1958); and Stuart Brown, ed., *Nicolas Malebranche: His Philosophical Critics and Successors* (Assen/Maastricht: Van Gorcum, 1991), 4–9, 81–93, and 116–130.

96 For the *kalām* cosmological argument in Christian creationist thought, see the excellent exposition by William L. Craig, *The Kalām Cosmological Argument* (Eugene, OR: Wipf and Stock, 2000).

explicit, amongst many Muslim academicians, educationists and intellectuals, toward considering the contemporary relevance, or lack thereof, of the seemingly "abstruse" and "error-prone" traditional Islamic philosophies and sciences of those long bygone and forgotten centuries. Quite on the contrary, Professor Hans Daiber asserts that "Islamic philosophy exercises the mind and trains it to grasp structures and methods revealed through the passage of time. Its comprehension represents a constant challenge to the powers of human understanding and its creative force, the imagination."[97]

In short, if Muslims fail to exercise their minds to study and appreciate the achievement of their rich and varied intellectual history, they will thereby fail to comprehend the predicament of their present moment, and in turn fail to take positive action for their future revival as a constructive civilisational force for the common good in the post-modern, post-industrial and post-development world.[98] Intelligent, thinking, reflective, self-conscious Muslims should read their rich classical past as a *beacon for the present toward the future*, for the past has not really "passed" away into eternal oblivion but is always perpetually present as a living tradition from which insights (*tabṣirah*) and lessons (*ʿibrah*) can always be drawn for overcoming the internal and external challenges and crises of the present age, or of any future ages for that matter; "*indeed, in their histories is a lesson for a people possessing of heart-felt reflection*."[99]

It has been said by not a few observers to the effect that in sheer intellectual range, al-Ghazālī and al-Rāzī stood alone, and the issues they raised and the difficulties they faced gave their thought a character that in many places addresses concerns that we find to be modern and perennial.[100] A case in point is al-Ghazālī's overriding concern in the first book of his magnum opus *Iḥyāʾ ʿUlūm al-Dīn*, *Kitāb al-ʿIlm* (*The Book of Knowledge*) and in his introduction to the *Tahāfut* for not conflating the *form* of knowledge with its *substance and content*, and for differentiating between true and pseudo-sciences, as well as differentiating between beneficial and harmful sciences—a concern which resonates very well with current debates in both East and West about the form, substance, methods and objectives of modern religious and secular education.[101] The revival of his

---

97 Daiber, "What is the meaning," xxxiii.

98 That is, the current situation in which there is much ongoing rethinking of the foundational notions of secular modernity such as development and progress; see the rest of the paper.

99 *Yūsuf*: 111.

100 In Peter G. Ridell and Tony Street, eds., *Islam: Essays on Scripture, Thought and Society, a Festschrift in Honour of Anthony H. Johns* (Leiden: Brill, 1997), 11 (paraphrased). That was said in regard to the *Mafātīḥ*, but it applies just as well to many other major works of al-Rāzī, especially the *Maṭālib*

101 A good, wide-ranging discussion is Wan Mohd Nor Wan Daud, *The Educational Philosophy and Practice of Syed Muhammad Naquib al-Attas* (Kuala Lumpur, ISTAC, 1998); see also his "Dewesternization and Islamization: Their Epistemic Framework and Final Purpose," a paper presented at The International Conference on Islamic University Education in Russia and Its SurroundingAreas, Kazan, Tatarstan, Russia 27-30 Sept 2009, organized by Russian Islamic University (RIU-Kazan) and theInstitute of Islamic Culture (IIC-Moscow) in Cooperation with the Federation the Universities of the Islamic World (FUIC) and ISESCO (http://www.scribd.com/fullscreen/54419348?access_key=key-1jiwj64pfbitns7a0w78); and published in Noritah Omar, Washima Che Dan *et al*., eds., *Critical Perspectives on Literature and Culture in the New World Order* (Newcastle: Cambridge Scholars Publishing, 2010), 2—25. See

and al-Rāzī's intellectual *jihād* in the postmodern dissipative and nihilistic age may well result in the realisation of a contemporary, distinctively Islamic counter-science (or counter system of knowledge and counter academia) "powerful and elaborate enough" to replace a modern, exploitative Western science and civilisation that is now speeding headlong into its twilight, "death-bound"[102] phase.[103]

But what about al-Ghazālī's *Iljām al-ʿAwāmm ʿan ʿIlm al-Kalām*, which seems to bar Muslims in general from indulging in discursive philosophy and dialectical theology? The answer in fact lies in the very title of the book, *Iljām al-ʿAwāmm*, which means "Barring the (Unlearned) Laity," and not *Iljām al-Khawāṣṣ* or "Barring the (Intellectual) Elite," which of course begs the question of what is really meant by *ʿawāmm* and what is meant by *khawāṣṣ*.

In this age of institutionalised mass public education and electronic mass media in which the West has become something akin to a disembodied mega-machine that has long cut itself loose from its original masters—a kind of turbo-charged techni-Frankenstein run amok on the world stage[104]—an age when the West and the East are intermingling in every nook and cranny, strange sciences and stranger ideas that were once only accessible to the relatively few dedicated intellectual *khawāṣṣ* (elite) are now required standard readings for high school students and university undergraduates and postgraduates who do not really know why they should be in schools in the first place or have a clue as to what the word "university" really means for and demands of them. In an age when the laity are compelled in one way or another, directly or indirectly, to become from among the educated and informed elite, it will be hard to find anyone, farmer or professor, to whom a good dose of Ghazālīan *Tahāfuti kalām*—reexpressed of course in modern idiom—will not be of real remedy for recovering and preserving the health and wholesomesness of their minds and souls.

---

also Claude Alvares and Shad Saleem Faruqi, eds., *Decolonising the University: The Emerging Quest for Non-Eurocentric Paradigms* (Penang: USM, 2012).

[102] Ulrich Duchrow, "Why Capitalism is Death-bound and How People can Opt for Life: A Theological Proposal to Economists," (online at: www.peaceforlife.org/resources/liferesources/2011/11-0325-duchrow-capitalismdeathlife.html).

[103] John Horgan, *The End of Science: Facing the Limits of Knowledge in the Twilight of the Scientific Age* (New York: Addison-Wesley, 1996); James Howard Kunstler, *The Long Emergency: Surviving the End of Oil, Climate Change, and Other Converging Catastrophes of the Twenty-First Century* (New York: Grove Press, 2006); Michael C. Ruppert, *Confronting Collapse: The Crisis of Energy and Money in a Post Peak Oil World* (White River Junction, VT: Chelsea Green Publishing, 2009); and many other similar books.

[104] Serge Latouche talks about the West's "invention of the megamachine" which uproots and destroys traditional cultures and societies; see *Eurocontinentalism Journal* (May 2012), http://eurocontinentalism.com/tag/common-decency/. See also his *The Westernization of the World*, 45–46, on how the West is like a machine. *Cf.* Jacques Ellul, *The Technological Society* (New York: Vintage Books, 1967), especially 133–148 on the "autonomy of technique." Needless to say, the works of Lewis Mumford criticizing modern technology and exposing the fact of how human beings have become part of the machine as amoral "servo-units," bereft of ethical self-reflection and involvement, are very important for all thinking Muslims to read; see his *The Myth of the Machine*, 2 vols. (New York: Harcourt Brace Jovanovich, 1967 and 1970), and *Technics and Civilization* (New York: Harcourt Brace, 1934).

## 7. *Kalām Jadīd* and the Islamization of *Falsafah*

Hellenising *falsafah* was in the beginning a largely autonomous (i.e., autonomous of traditional orthodoxy), comprehensive conceptual system (or body of thought) for relating the absolute to the relative, or the transcendent to the contingent, in metaphysical, physical and mathematical terms by using its own hellenistic conceptual categories and logico-rational methodology. Moreover, many intelligent Muslims were drawn into that rich universe of intellectual discourse, either directly through studying the philosophical works of al-Fārābī and Ibn Sīnā, or indirectly through cultivating the empirical and mathematical sciences generated by that philosophy. That in itself was not a threat to traditional Islamic orthodoxy as represented by the *fuqahā'* and *muḥaddithīn*. But when it became increasingly clear to the defenders of orthodoxy that the language used by *falsafah* to describe the relation between God and the world was compromising the foundational Qur'ānic doctrines of divine omnipotence and omniscience and the absolute dependence of the world on God (*iftiqār al-khalq ilā al-khāliq*), or even effectively denying it altogether, then orthodoxy had no choice but to step in forcefully and decisively, as it were, and come to a head on, close engagement with the truth-claims of *falsafah*, especially when some of those truth-claims were seen to pose a direct challenge to the Sunni theological consensus established by the Ash'arī-Māturīdī-Ṭahawī school. The situation was akin to the predicament faced by Frodo, as it were, who, in order to destroy the Ring of Power, had to bring it out of his home in the Shire and venture far away with it into the infernal depths of Mordor where the Shadow lies.[105]

This long process of close engagement culminated in al-Ghazālī and al-Rāzī who decided to neutralise the intellectual-theological threat posed by the autonomous status of *falsafah*, not only by refuting some its truth claims (*negative critique*), but, by also critically and systemically bringing that whole intellectual edifice within the credal ambit of traditional orthodoxy (*positive critique*), so that, henceforth, all Muslims, regardless of their particular intellectual inclinations with respect to the traditional and intellectual sciences, would discourse within the ethico-cognitive parameters of the worldview of divine revelation and prophetic tradition. The Ghazālīan-Fakhrurāzian encounter with *falsafah* can thus be summarised in three words: *engagement, neutralisation, appropriation*—in effect, a systemic and *programmatic* Islamisation of *falsafah* and all the logical, empirical and mathematical sciences that have been generated from it. In short, *kalām jadīd* was a long-term theologico-philosophico-scientific research programme that has served its purpose wonderfully well in the classical age of Islam, and my thesis

---

[105] Though the author himself denies it, J. R. R. Tolkien's *The Lord of the Rings* can be read in many ways as an eloquent and captivating allegory of the sorry state of western civilization in the world war decades of the twentieth century, rendered compellingly real to the reader's imagination by one who had himself fought deep in the foul, muddy trenches of the Western Front and survived to express his experience of those dark and bloody years in the novel of the century; see Daniel Grotta, *The Biography of J. R. R. Tolkien: Architect of Middle Earth* (Philadelphia: Rummy Press, 1992); Stratford Caldecott, *The Power of the Ring: The Spiritual Vision Behind the Lord of the Rings* (Crossroad Publishing, 2005); *cf.* the Muslim perspective on it by Mahmoud Shelton, *Alchemy in Middle Earth: The Significance of J R R. Tolkien's The Lord of the Rings* (Temple of Justice Books, 2003).

here is that that research programme needs to be vigorously revived and applied to current intellectual challenges, for this is the very "Jihad of the Word" and positive action which the great *mujaddid*/renewer of our age, Badiuzzaman Sa'id Nursi calls us to undertake.[106]

There is a real need for Muslim *'ulamā'*, scholars, intellectuals, thinkers, researchers and scientists of today's age to learn afresh from that rich intellectual historical experience and thereby revive that research program in contemporary terms within a context of close, critical and self-confident engagement with all aspects of Western science and philosophy now being imbued by Muslims through their witting or unwitting participation in the modern academia.[107]

## 8. "*Kalām* of the Age" (*Kalām al-'Aṣr*) and the Worldview of Islam

The intellectual challenges to tradition faced and overcame by al-Ghazālī and al-Rāzī close to a thousand years ago has now again resurfaced in a new form and in a new idiom in the guise of the modern, secular, western sciences and philosophies systematically imparted to Muslims in the modern mainstream academia, but with a much more draconian objective, namely, a thoroughgoing nihilistic disenchantment of the world and the whole of life and existence. Moreover, young, intelligent Muslims in their countless millions are unsuspectingly imbueing this secularising nihilism masquerading as value-free education and knowledge quite oblivious to its negative cognitive, moral and actual impact[108] on their belief, practice and value system as Muslims, and on their communities and societies, if insofar as being "Muslim" to them denotes any substantial intellectual and practical content different and distinct from being "non-Muslim."

In the face of this challenge, the relevance and lesson of the Ghazālīan-Fakhrurāzian encounter with *falsafah* to Muslims in the present age may be encapsulated into what can be called the "*Kalām* of the Age" initiative (*kalām al-'aṣr* or *Dialetics of the Age*) which pertains to a creative revival of the Ghazālīan-Fakhrurāzian dialectics for coming to terms with the multifarious challenges of modern western sciences, ideologies and philosophies and their impact on our religio-cultural traditions, values and communities. By "coming to terms" we mean coming to terms in a way that serves rather than subverts the Worldview of Islam, which al-Attas has defined as follows:

> The worldview of Islam is the vision of reality and truth that reveals to the Muslim mind what existence is all about. It is a metaphysical

---

[106] Nursi, *Jihad of the Word and Positive Action* (Istanbul: Sozler, n.d.). This is saying truth to power and money peacefully not by physical violence, as exemplified in Nursi's jihad against the radical secularization of post-Ottoman Turkey by Ataturk. Here, the West is state of mind, an outlook, not a particular physical geographical or ethnic or even national entity. It is a kind masterless mega-machine like the the one dramatized in the film Matrix; see Latouche, *The Westernization of the World.*

[107] Adi Setia, "The Theologico-Scientific Research Program of the *Mutakallimūn*: Intellectual Historical Context and Contemporary Concerns with Special Reference to Fakhr al-Dīn al-Rāzī," *Islam & Science* 3, no. 2 (Winter 2005): 127–151.

[108] i.e., impact on their understanding and actions.

> survey of the visible as well as the invisible worlds, including the perspective of life as a whole. In this holistic perspective of life, the *dunyā*-aspect of life is thoroughly integrated into the *ākhirah*-aspect of life, and in which the *ākhirah*-aspect of life has ultimate and final significance.[109]

My tone in the following lines will be deliberately personal and directed primarily to a Muslim audience who knows and cares for their Worldview, i.e., the Worldview of Islam,[110] and desires to see it operative again in both their private and public domains of life through a proactive, constructive engagement with the dominant modern Western secular worldview—a worldview with which many major Western thinkers, authors and activists are themselves becoming increasingly disillusioned as evidenced in their current conceptual and practical experiments with many diverse strands of postmodernism and various other "*postisms*."[111]

---

[109] *Prolegomena*, 1—5 passim (abridged and slightly paraphrased).

[110] Comprehensively defined and elaborated by Professor al-Attas in his *Prolegomena to the Metaphysics of Islam: An Exposition of the Fundamenatl Elements of the Worldview of Islam* (Kuala Lumpur: ISTAC, 2001). This important and profound book can be read as (i) a guide to the Islamic intellectual tradition, as well as (ii) a guide to applying that tradition in navigating ourselves safely through the pitfalls of modernity.

[111] That is to say, post-developmentalism, post-industrialism, post-colonialism, post-growthism, post-materialism, post-capitalism, post-rationalism, post-scientism, post-democracy, etc. For a small sampling, see, Paul Feyerabend, *Farewell to Reason* (London: Verso, 1988); P. Radin, *Primitive Man as Philosopher* (London & New York: Appleton, 1927); Christian Comeliau, *The Impasse of Modernity: Debating the Future of the Global Market Economy*, trans. Patrick Camiller (London: Zed Books, 2002); and R. Vachon, Ashis Nandy, Wolfgang Sachs, and Raimon Pannikar, "The Post-Modern Era: Some Signs and Priorities," in *Interculture* 2 , no. 1 (Winter 1996); cf. Gustavo Esteva and Madhu Suri Prakash, *Grassroots Post-Modernism: Beyond Human Rights, the Individual Self, and the Global Economy* (New York: Peter Lang, 1996); Marshall Berman, *All That Is Solid Melts into Air: The Experience of Modernity* (London: Verso, 1983); Serge Latouche, *The Westernization of the World: The Significance, Scope and Limits of the Drive towards Global Uniformity*, trans. Rosemary Morris (Oxford: Polity Press, 1996); Robert J. Ringer, *How You Can Find Happiness During the Collapse of Western Civilization* (New York: Qed/Harper and Row, 1983); B. McKibben, *The End of Nature* (New York: Anchor Books, 1999); Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (San Francisco: Harper and Row, 1980); Frederic F. Clairmont, *The Rise and Fall of Economic Liberalism: The Making of the Economic Gulag*, republished (Penang: Southbound and Third World Network, 1996). Paul Feyerabend, *Against Method*, 3d ed. (London: Verso, 1993); David Lindley, *The End of Physics: The Myth of a Unified Theory* (New York: Basic Books, 1994); Majid Rahnema, "Science and Subjugated Knowledges: A Third World Perspective," in *Knowledge Across Cultures: Universities East and West*, ed. Ruth Hayhoe (Toronto/Wuhan: OISE Press and Hubei Education Press, 1993); Ashis Nandy, *Science, Hegemony and Violence* (Bombay: Oxford University Press, 1988); L. Winner, *The Whale and the Reactor: A Search for Limits in the Age of High Technology* (Chicago: University of Chicago Press, 1985); idem, *Autonomous Technology* (Cambridge, MA: MIT Press, 1977); R. Romanyshin, *Technology as Symptom and Dream* (London: Routledge, 1989); Jerry Mander, *In the Absence of the Sacred: The Failure of Technology and the Survival of the Indian Nations* (San Francisco: Sierra Club Books, 1991); G. A. Almond, M. Chodorow, and R. H. Pearce, *Progress and Its Discontents* (Berkeley: University of California Press, 1982); W. W. Wagar, "Modern Views on the Origins of the Idea of Progress," in *Journal of the History of Ideas* 28 (1967): 55–70; Larry Laudan, *Progress and Its Problems: Towards a Theory of Scientific Growth* (Berkeley: University of California Press, 1977); James Bernard, *The*

The *Kalām* of the Age (*kalām al-ʿaṣr*) is the systemic deconstruction of all the Western sciences and philosophies and their reconstruction from within the epistemic and axiological framework of the Worldview of Islam, by which, along the way, some of those sciences and philosophies or aspects thereof may be evaluated to be irrelevant or even discardable altogether, while others modified, restructured, appropriated and redirected to serve the higher axiological purposes of the divine Law (*maqāṣid al-sharīʿah*),[112] i.e., to serve the true purpose of our lives as Muslims in this temporal world, which to us is but the temporal seedbed of the next world of eternal life (*al-dunyā mazraʿat al-ākhirah*).

We should not allow our present preoccupation with the current socio-political upheavals in the Muslim world,[113] or intra-Muslim credal controversies and sectarian strife, or even the commendable inter-religious "Common Word"

---

*Death of Progress* (New York: Alfred Knopf, 1973); Trevor Blackwell and Jeremy Seabrook, *The Revolt Against Change: Towards a Conserving Radicalism* (London: Vintage, 1993); K. A. Gourlay, *World of Waste: Dilemmas of Industrial Development* (London: Zed Books, 1992); Theodore Roszak, *Where the Wasteland Ends: Politics and Transcendence in Postindustrial Society* (reprinted Berkeley: Celestial Arts: 1989); idem, *Person/Planet: The Creative Disintegration of Industrial Society* (Backinprint.com, 2003); Ivan Illich, *Shadow Work* (London: Marion Boyars, 1981), which helps us to re-look the past 500 years so as to be able to really look afresh to the next 500; B. Ashcroft, G. Griffiths, and H. Tiffin, *The Post-Colonial Studies Reader* (London: Routledge, 1995); Gilbert Rist, *The History of Development: From Western Origins to Global Faith*, trans. Patrick Camiller (London and New York: Zed Books and Cape Town: UCT Press, 2000); Majid Rahnema with Victoria Bawtree, *The Post-Development Reader* (London: Zed Books, 2001); Jeremy Seabrook, *Victims of Development: Resistance and Alternatives* (London: Verso, 1999); Ramashray Roy, *Against the Current: Essays in Alternative Development* (Delhi: Satvahan Publications, 1982); Wolfgang Sachs, ed., *The Development Dictionary: A Guide to Knowledge as Power* (London: Zed Books, 1992); W. Rodney, *How Europe Underdeveloped Africa* (Washington DC: Howard University Press, 1981); Bruce M. Rich, *Mortgaging the Earth: The World Bank, Environmental Impoverishment and the Crisis of Development* (London: Earthscan, 1994); Kothari Rajni, *Rethinking Development: In Search of Human Alternatives* (Croton-on-Hudson: Apex Press, 1989); Samir Amin, *Maldevelopment: Anatomy of a Global Failure* (London: Zed Books, 1990); H. W. Arndt, *The Rise and Fall of Economic Growth: A Study in Contemporary Thought* (Chicago: University of Chicago Press, 1984); Paul Ekins, *The Living Economy: A New Economics in the Making* (London: Routledge, 1986); Richard Douthwaite, *The Growth Illusion: How Economic Growth Has Enriched the Few, Impoverished the Many and Endangered the Planet* (Dublin: Lilliput Press, 1992); E. Herman Daly and John B. Cobb, Jr, *For the Common Good: Redirecting the Economy toward Community, the Environment and a Sustainable Future* (Boston, MA: Beacon Press, 1971); Cheryl Payer, *The World Bank: A Critical Analysis* (New York: Monthly Review Press, 1982); Susan George and Fabrizo Sabelli, *Faith and Credit: The World Bank Secular Empire* (Harmondsworth: Penguin, 199); Colin Crouch, *Post-Democracy: Themes for the 21st Century* (Cambridge: Polity Press, 2004); Zygmunt Bauman, *Community: Seeking Safety in an Insecure World* (Cambridge: Polity Press, 2003); and Daniel M. Warner, "Post-Growthism: From Smart Growth to Sustainable Development," in *Environmental Practice* 8, no. 3 (September 2006).

[112] Muḥammad al-Ṭāhir ibn ʿAshūr, *Treatise on Maqāṣid al-Sharīʿah*, trans. Mohamed el-Tahir al-Messawi (Petaling Jaya: IBT, 2006); Ahmad al-Raysuni, *Imam al-Shatibi's Theory of the Higher Objectives and Intents of Islamic Law*, trans. Nancy Roberts (Petaling Jaya: IBT, 2006); Imran Ahsan Khan Nyazee, *Islamic Jurisprudence (Usul al-Fiqh)* (Petaling Jaya: The Other Press, 2003), especially 195–212; and idem, *Theories of Islamic Law: The Methodology of Ijtihād* (Petaling Jaya: The Other Press, 2002), especially 189–268.

[113] Ali A. Allawi, *The Crisis of Islamic Civilization* (New Haven: Yale University Press, 2009).

initiative[114] to divert us from the great, if not greater, task of drawing creatively from the profound lessons of traditional classical *kalām* to meet head on the real underlying, common challenge of the age—the challenge of a subtle and sophisticated secularism, materialism, scientism and nihilism surreptitiously and systemically imparted into the minds and hearts of both Muslim and non-Muslim students, intellectuals and scholars in Western and Western-type universities (including those labelling themselves "Islamic University"). For there is no war between religions but only between religions and the ideologies of secularism, consumerism, scientism and nihilism, and hence, we need a Common Word between Religions in order to effectively engage that common enemy. As Keller puts it,

> The real challenge to religion today is the mythic power of science to theologize its experimental method, and imply that since it has not discovered God, He must not exist.[115]

This call of the *Kalām* of the Age is precisely the call which Afifi al-Akiti is inviting us to heed in his important article, "The Negotiation of Modernity through Tradition in Contemporary Muslim Intellectual Discourse: The Neo-Ghazalian, Attasian Perspective,"[116] but then again we must learn to know how to negotiate to the advantage of religion rather than to its detriment, and this is no easy task.

This is a common challenge insofar as it challenges the paramount emphasis on humanity's conscious responsiveness to Transcendence expressed in all traditional religions. Keller himself has alluded to this real challenge of the age when he says,

> . . . attacks today on religion by scientism should be met by Muslims as Ashʿarī and Māturidī met the Muʿtazilites and Jahmites in their times: with a dialectic critique of the premises and conclusions thoroughly grounded in their own terms. The names that come to mind in our day are not Ashʿarī, Baqillani, and Razi, but rather those like Huston Smith in his *Beyond the Post-Modern Mind*, Charles Le Gai Eaton in his *King of the Castle*, Keith Ward in his *God, Chance, and Necessity*, and even non-religious writers like Paul Davies in *The Mind of God*, and John Horgan in his *The End of Science* and *The Undiscovered Mind*. Answering reductionist attacks on religion is a communal obligation, which Muslims can only ignore at their peril.

---

114 See the official website, http://www.acommonword.com/.

115 Keller, "*Kalam* and Islam," 25.

116 In Wan Mohd Nor Wan Daud & Muhammad Zaini Uthman, eds., *Knowledge, Language, Thought & the Civilization of Islam: Essays in Honor of Syed Muhammad Naquib al-Attas* (Kuala Lumpur: UTM, 2010), 119–134. See also Adi Setia, "Dewesternizing and Islamizing the Sciences: Operationalizing the Neo-Ghazalian, Attasian Vision," paper presented in the One-Day Colloquium on Islam & Secularism, Kuala Lumpur, Malaysia, 24 July 2010.

> This too is of the legacy of kalam, or the "aptness of words to answer words."[117]

In the light of this consideration, understanding the Ghazālīan *Tahāfut* and the Fakhrurāzian *Maṭālib* and the creative re-articulation of this understanding in contemporary philosophical, dialectical and scientific terms, should be rendered accessible to all who are studying, teaching or practising the Western sciences—those who, by the very fact of their involvement or engagement with the modern sciences, cease altogether to be from amongst the *ʿawāmm* but become, whether they like it or not, from among the *khawāṣṣ*. If one is not prepared to be trained, prepared and guided like Frodo, then they have no business venturing into Mordor.

The real intellectual battleground for Muslims in the modern age is the neo-Dahrism[118] of the western sciences which many of them gleefully imbibe, including those students who might even now be learning the *dīn* at the feet of the great living *shuyūkh* of our time in Malaysia, Indonesia, Patani, Syria, Jordan, Egypt, Yemen, Morocco, Mauritania, Pakistan and India, or even in Britain and the United States and Canada, nourishing themselves from the wellsprings of tradition. "Gleefully," because it alludes to the joyful innocence or naivete of those who do not have a clue as to what they are actually imbibing as "education" or "knowledge" or "skills" and other apparently good things in the modern, western-style universities. By enrolling in the modern academia, they are rather unlikely to be able to avoid becoming unwitting intellectual victims of that grand, elaborate and tedious charade called science, technology and economics, the *funūn al-ẓunūn* (multifarious sciences of conjectures)[119] of the current age.[120] Gleeful in the beginning but tragic the end result.

---

[117] Keller, "*Kalam* and Islam," 26. Bibliographic details pertaining to the books cited by Keller and their authors are as follows: Hutson Smith, *Beyond the Post-Modern Mind: The Place of Meaning in a Global Civilization*, revised 2d ed. (Wheaton, Illinois: Quest Books, 2003); Charles Le Gai Eaton, *King of the Castle: Choice and Responsibility in the Modern World*, new ed. (Cambridge: Islamic Texts Society, 1994); Keith Ward, *God, Chance & Necessity* (Oxford: One World, 2001); Paul Davies, *The Mind of God: Scientific Basis for a Rational World* (New York: Touchstone, 1992); and Horgan, *The End of Science*; idem, *The Undiscovered Mind: How the Human Brain Defies Replication, Medication, and Explanation* (New York: Touchstone, 1999)

[118] Literally temporalism, temporalists, referring to the beliefs of the materialists and atheists who believe in the eternity of the world and disbelieve in the Hereafter; see the article "Dahriyya," in http://www.muslimphilosophy.com/ei2/dahriyya.htm, which includes useful references.

[119] Allusion to al-Ghazālī's use of the term in the beginning of his hard-hitting introduction to his *Tahāfut al-Falāsifah*, intro. Ṣalāḥ al-Dīn al-Hawwārī (Beirut: al-Maktabah al-ʿAṣriyyah, 2007), 41. Marmura translates it as "multifarious beliefs," but it can also be more literally rendered as "the multifarious sciences (or varieties) of conjectures," in which case then al-Ghazālī is rebuking those so enamored of Greek philosophy—which is but sciences based on conjectures rather than certain knowledge—that they have gone so far as to "belittle the devotions and ordinances prescribed by the divine law." See also Michael Marmura, trans., *Al-Ghazali: The Incoherence of the Philosophers* (Provo, Utah: Brigham Young University Press, 2000), 1–2.

[120] A very recent case in point is the new religious "Ahl al-Sunnah" university launched with great fanfare in Malaysia, but even a cursory perusal of its poorly prepared brochure shows a complete lack of any intelligent, coherent exposition as to how its self-proclaimed

> O youth, how many nights have you remained awake repeating science and poring over books and have denied yourself sleep. I do not know what the purpose of it was. If it was attaining worldly ends and securing its vanities and acquiring its dignities and surpassing your contemporaries and such like, woe to you and again woe.[121]

The great task of these students and scholars is to see through this intellectual charade and then to systemically construct and elaborate a sophisticated counter-intellectual framework or *dialectics* by which the tradition can be brought to bear critically and constructively on these Western sciences, lest they go on allowing their own knowledge of tradition to be intellectually impotent and silent or even seriously compromised and even corrupted[122] in the face of a modern, aggressive, arrogant and even militant neo-Dahrism now reinventing itself as "globalization." The fault then lies not within the tradition as such but within their own minds and hearts for failing to understand the true nature and purpose of knowledge so lucidly expounded in al-Ghazālī's *Kitāb al-ʿIlm*,[123] and to operationalize that understanding today in their encounter with the modern sciences.

None of these concerns about the negative impact of the modern knowledge system are new, for even many of the conscientious thinkers of the West have been making similar forceful indictment of their own elaborate intellectual edifice—*wa shahidū ʿalā anfusihim* = "and they bear witness against their own selves".[124] These thinkers include names such as Martin Heidegger,[125]

---

foundational Sunni theological framework will be made to bear evaluatively on its selection and conduct of academic programs, the design of curricula, and the choice of academic faculties or departments to establish or not to establish. Interestingly, one of the papers presented at the launch (by Tim Winter, no less) actually criticised, albeit indirectly, this thoughtless mimicking of conventional western-style educational structure and content. It will of course be impolite for me to name that university explicitly, but those in the know will know.

[121] al-Ghazālī, *Ayyuha al-Walad*, trans. G. H. Scherer, *O Disciple* (Beirut: American Press, 1932), 57.

[122] A case in point is the Islamic Banking and Finance (IBF) industry which has been thoroughly coopted and corrupted into serving the neoliberal economic agenda, resulting in the reduction of Shariʿah (Islamic law) to fiqh (jurisprudence) and then to *tamwīl* (finance). The best critique of IBF so far is Mahmoud A. El-Gamal, *Islamic Finance: Law, Economics, and Practice* (Cambridge: Cambridge University Press, 2009). There is now a strong groundswell of systematic response amongst fuqaha and intellectuals against this subversion of sacred law to the service of Mammon; see for instance, Adi Setia, "*Muʿāmalah* and the Revival of the Islamic Gift Economy," in *Islam & Science* (Summer, 2011), 67—88.

[123] It is the first book of the *Iḥyā'*. See the splendid English translation by Nabih Amin Faris, *The Book of Knowledge* (New Delhi: Idara, 2008). Professor al-Attas's philosophy of education and project of Islamization of Contemporary Knowledge is inspired to a great extent by the *Kitāb al-ʿIlm*; see the excellent study by Wan Mohd Nor Wan Daud, *The Educational Philosophy and Practice of Syed Muhammad Naquib al-Attas: An Exposition of the Original Concept of Islamization* (Kuala Lumpur: ISTAC).

[124] Allusion to the verse "the life of the world deceived them and so they testified against themselves that they were atheistic [ingrate; disbelivers]." (*wa gharrathum al-ḥayātu al-dunyā wa shahidū ʿalā anfusihim annahum kānū kāfirīn*) (Cleary's translation) in *al-Anʿām* (6): 130. We may elaborate by saying that they indict the very structure they are a part of simply because they know it so well from the inside, and thereafter some of them may disown it, which is only

Jacques Ellul,[126] Karl Polanyi,[127] E. F. Schumacher,[128] Serge Latouche,[129] Michael Sahlins,[130] James Howard Kunstler,[131] and many others. In fact, a whole century ago, the eminent American philosopher and psychologist, William James had already come to the damning judgement that,

> The most significant characteristic of modern civilization is the sacrifice of the future for the present, and all the power of science has been prostituted for this purpose.[132]

Similarly, in his important book, *Nature's Economy: A History of Ecological Ideas*, which can be read as an eloquent indictment of Wsetern technoscientific negative attitude towards the integrity of nature, Donald Worster says:

> The sudden acceleration of environmental damage throughout the world since World War Two has been largely the consequence of our scientific enterprise…there can be no getting around the fact that science has made possible the modern devastation of nature.[133]

Without a rigorous *Kalām* of the Age, Muslims today cannot be too sure that they are in fact not being complicit in that "*sacrifice of the future for the present.*"

Knowing the tradition alone is not enough, for the carriers of tradition must also know how to read the "situation of the age" (*aḥwāl al-ʿaṣr*), that they may bring the former to bear creatively, evaluatively and critically on the latter through the means of a Dialectics of the Age (*kalām al-ʿaṣr*), and thereby, avoid falling into the pitfalls of nihilistic neo-Dahrism masquerading as evolution,

---

possible if they admit to they own complicity in it. For Muslims, in the Hereafter, our own hands and legs and other bodily organs will indict us for our complicity in the machine, if we are careless. The West is currently engaged in a profound civilizational self-confession and self-indictment, and has been earnestly doing so for the past few decades. In this sense, much of the *tahafuti* hardwork has already been done by the thinking, honest and conscientious people of the West itself. Muslims today simply have to be aware of this work, in constrast to al-Ghazali who had to do the *tahafut* work himself. This is a situation also alluded to by Keller in his important kalam article.

125 Martin Heidegger, "The Question Concerning Technology," in *Basic Writings*, ed. David Krell (New York: HarperCollins Publishers, 1993).

126 Jacques Ellul, *The Technological Society*, trans. John Wilkinson (New York: Vintage, 1967), which has been described (on the front cover) as "a penetrating analysis of our technical civilization and of the effect of an increasingly standardized culture on the future of man."

127 Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, 2001).

128 E. F. Schumacher, *Small is Beautiful: Economics as if People Mattered* (New York: Harper Collins, 2010).

129 Serge Latouche, *The Westernization of the World*; idem, *In the Wake of the Affluent Society: An Exploration of Post-Development* (London: Zed Books, 1993).

130 Marshall Sahlins, *Stone Age Economics* (Piscataway, New Jersey: Aldine Transaction, 1972); idem, *The Western Illusion of Human Nature* (Chicago: Prickly Paradigm Press, 2008).

131 Kunstler, *The Long Emergency: Surviving the Coverging Catastrophes of the Twenty-first Century* (New York: Grove/Atlantic, 2005).

132 As cited in Kunstler, *The Long Emergency*, 185 (italics mine).

133 (Cambridge: Cambridge University Press, 1988), 343.

progress, historicism, growth, development, change, globalisation, science and technology. This is called neo-Dahrism because it harks back to the Dahrism and the *Dahriyyīn*[134] of old, so that we may be shaken out of our slumber to real constructive, proactive and anticipative intellectual and educational action, and hence, social action, and thereby go way beyond the narrow post-9/11 agenda that has been directly or indirectly imposed on us, for the real ongoing challenge is at core intellectual, even if there happens in the near future a complete geo-political reapproachment between Islam and the West.[135]

The whole problem with neo-Dahrism (*al-dahriyyah al-jadīdah*) is that it does not ostensibly present itself to us as heresy, and thus, many of us do not see it as such, but to see it as such is to revive the *kalām jadīd* of the Ghazālian *Tahāfut*, the Fakhrurāzīan *Maṭālib*, the Taftazānīan *Maqāṣid*, and the Ījīan *Mawāqif*. Failing to do so may not necessarily render us formal neo-Dahris (self-conscious believers in secular progress, historical relativism, and natural and social Darwinism), but nevertheless, we will be neo-Dahris in practice because the neo-Dahrist disciplines we imbibe in the universities present themselves to us as value-neutral objective data, facts, statistics, methods and truths, and we are gullible enough to accept that presentation, lock, stock and barrel. In brief, the heresy of the age demands a *Kalām* of the Age to expose its true face to all thinking Muslims who care about *reviving* the wisdom of Tradition, *reorientating* themselves to Transcendence, and *reorganising* their personal, communal and civilisational life on the belief in the ultimate life to come; for our identity consists in our service to Transcendence, and not to some fanciful science-fictional, techno-futuristic Utopia[136] or to the nation-state.[137]

Therefore, it is of the outmost imperative that we not only master completely the Worldview of Islam,[138] but also master completely the various specific contemporary civilisational contexts in which it is to be made *operational*,[139] for the Worldview of Islam must not only inform, it must also transform—i.e., we should be able to create for ourselves a world in which that Worldview can find its home and belong and flourish. We simply have to revive

---

134 Literally temporalism, temporalists, referring to the beliefs of the materialists and atheists who belief in the eternity of the world; see the article "Dahriyya," in http://www.muslimphilosophy.com/ei2/dahriyya.htm, which includes useful references; alluded to in the Qur'an, *al-Jāthiyah*: 24, "And they have said, 'This is nothing but our life in the world; we die and we live, and nothing annihilates us but the passage of time (*dahr*).' But they have no knowledge of that; they are only conjecturing."

135 Richard W. Bulliet, *The Case for Islamo-Christian Civilization* (New York: Columbia University Press, 2004).

136 H. B. Franklin, ed., *Future Perfect* (Rutgers University Press, 1995).

137 On this, see al-Attas, *Prolegomena*, especially the Introduction and the first chapter. It should also be mentioned that the *Tahafut* was also a positive critique and reconstructive, hence for it is more than likely that doing the *tahafut* today will open up our eyes to positive, viable alternatives already current which we have so far remained oblivious of due to the tunnel vision way of seeing we have been accustomed to in the secular academia. Once we go on to the *tahafut* mode of thinking, the practical transformative re-direction will be pretty drastic.

138 Al-Attas, *Prolegomena*; idem, *Islam & Secularism* (Kuala Lumpur: ISTAC, 1993); and idem, *The Concept of Education in Islam* (Kuala Lumpur: ISTAC, 1991). See also Wan Mohd Nor, *The Educational Philosophy*.

139 On this, see Chapter 5 of al-Attas, *Islam and Secularism*.

and implement the Ghazālīan intellectual approach of the *Maqāṣid* and the *Tahāfut* for the addressing and overcoming the challenges of the current era, which is essentially "The Challenge of Knowledge." Professor al-Attas has explained the nature of this challenge in very fank, candid and direct terms:

> I venture to maintain that the greatest challenge that has surreptitiously arisen in our age is the challenge of knowledge, indeed, not as against ignorance; but knowledge as conceived and disseminated throughout the world by Western civilization; knowledge whose nature has become problematic because it has lost its true purpose due to being unjustly conceived, and has thus brought about chaos in man's life instead of, and rather than, peace and justice; knowledge which pretends to be real but which is productive of confusion and scepticism, which has elevated doubt and conjecture to the 'scientific' rank in methodology and which regards doubt as an eminently valid epistemological tool in the pursuit of truth; knowledge which has, for the first time in history, brought chaos to the Three Kingdoms of Nature: the animal, vegetal and mineral. It seems to me important to emphasize that knowledge is not neutral, and can indeed, be infused with a nature and content which masquerade as knowledge. Yet, it is, in fact, taken as a whole, not true knowledge, but its interpretation through the prism, as it were, the worldview, the intellectual vision and psychological perception of the civilisation that now plays the key role in its formulation and dissemination. What is formulated and disseminated is knowledge infused with the character and personality of that civilisation—knowledge as presented and conveyed as knowledge in that guise so subtly fused together with the real so that others take it unawares *in toto* to be the real knowledge per se.[140]

This rigorous re-articulation of the Worldview of Islam will be the new dialectics, the Dialectics of the Age (*kalām al-ʿaṣr*). It is hoped that through these well-grounded efforts in collaboration with like-minded scholars, intellectuals and institutions, Muslim and non-Muslim, and with the guidance of our independent, community-rooted teachers and *shuyūkh*, the Worldview of Islam will once again find *public expression* as a world culture and civilisation to which it belongs and blossoms and finds its home and thereby contribute to the universal revival of a heart-felt consciousness of the Transcendent in human life and society.

## 9. *Kalām al-ʿAṣr*, Islamization, and the Comprehensive Critical Mapping of the Modern Sciences

[140] Syed Muhammad Naquib al-Attas, *The De-Westernization of Knowledge*, with foreword by Claude Alvares (Penang: Citizens International, 2009), 11–12. See also al-Attas, *Islam and Secularism*, 133–134.

Al-Attas defines and elaborates the term 'islamization' as follows:

> Islamization is the liberation of man first from mythological, magical, animistic, natural-cultural tradition opposed to Islam, and then from secular control over his reason and his language. The man of Islam is he whose reason and language are no longer controlled by magic, mythology, animism, his owm national and cultural traditions opposed to Islam, and secularism. He is liberated from both the magical and secular world views….since man is both physical being and spirit, the liberation refers to his spirit, for man as such is the real man to whom all conscious and significant actions ultimately refer. The liberation of his spirit or soul bears direct influence upon his physical being or body in that it brings about peace and harmony within himself in his manifestation as a human being, and also between him as such and nature. He has, in liberation in this sense, set his course towards attainment to his original state, which is in harmony with the state of all being and existence (*i.e. fiṭrah*).[141]

In the present context of liberating ourselves from the suffocating intellectual and cultural hegemony of the West and its secularising impact on us, this project of true Islamization entails Dewesternisation. As a matter of fact, al-Attas has said to the effect that dewesternisation is a condition of Islamization:

> In appraising the situation with regard to the formulation and dissemination of knowledge in the Muslim world, we must see that the infiltration of key concepts from the Western world has brought confusion which will ultimately cause grave consequences if left unchecked. Since what is formulated and disseminated in and through universities and other institutions of learning from the lower to the higher levels is in fact knowledge *infused* with the character and personality of Western culture and civilization and moulded in the crucible of Western culture . . . , our task will be first to *isolate the elements* including the key concepts which make up that culture and civilization. These elements and key concepts are mainly prevalent in that branch of knowledge pertaining to the human sciences, although it must be noted that even in the natural, physical and applied sciences, particularly where they deal with *interpretations of facts* and *formulation of theories*, the same process of isolation of the elements and key concepts should be applied; for the interpretations and formulations indeed belong to the sphere of the human sciences. The "islamization" of present-day knowledge means precisely that, *after* the isolation process referred to, the knowledge free of the elements and key concepts isolated are *then* infused with the Islamic elements and key concepts which,

[141] *Islam and Secularism*, 44—45.

> in view of their fundamental nature as defining the *fiṭrah*, in fact imbue the knowledge with the quality of its natural function and purpose and thus makes it *true knowledge*. It will not do to accept present-day knowledge as it is, and then hope to "Islamize" it merely by "grafting" or "transplanting" into it Islamic sciences and principles; this method will but produce conflicting results not altogether beneficial nor desirable. Neither "grafting" nor "transplant" can produce the desired result when the "body" is already possessed by foreign elements consumed in the disease. The foreign elements and disease will have first to be drawn out and neutralized before the body of knowledge can be remoulded in the crucible of Islam.[142]

Quite apart from the ongoing foundational work of conceptual engagement and explication outlined above by al-Attas, one practical outcome of the *Kalām* of the Age approach will be to design a two-part certificate or diploma course on the Worldview of Islam covering both its "pure" (i.e., conceptual = *mafhūmi*) and "applied" (operational = *maʿmūlī*, *ʿamali*) dimensions, with a view to helping students or participants engage creatively and closely with both tradition and modernity in a manner which will enable them to bring the tradition to bear critically, evaluatively and constructively on the sciences of the modern academia, and thereby, differentiating between objective truths and subjective fictions,[143] and separating the beneficial from the harmful of those sciences, or separating the beneficial from the harmful aspects of each of those sciences, especially those sciences having general *axiological warrant*[144] from within the perspective of tradition and local culture. Scholars and students alike are invited to implement an educational and research programme toward operationalising Nuh Ha Mim's important and urgent call to

> scientifically literate Muslims today to clarify the provisional nature of the logic of science, and to show how its epistemology, values, and

---

142 Al-Attas, *Islam and Secularism*, 162–163.

143 Mauricio Suarez, ed., *Fictions in Science: Philosophical Essays on Modeling and Idealization* (London: Routledge, 2008). I thank my friend Dr. Sachi Arafat of Glasgow University for drawing my attention to this interesting and important book. See also Camille Limoges, Simon Schwartzman et al., *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies* (London: Sage, 1994). Cf. Brian Martin, *The Bias of Science* (Canberra: Society for Social Responsibility in Science, 1979); Karin Knorr Cetina, *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science* (Oxford: Pergamon Press, 1981); and idem, *Epistemic Cultures: How the Sciences Make Knowledge* (Cambridge, MA: Harvard University Press, 1999). For cases in point of "scientific fraud," see Horace Freeland Judson, *The Great Betrayal: Fraud in Science* (Orlando, Florida: Harcourt Books, 2004); and Marcel C. LaFolette, *Stealing into Print: Fraud, Plagiarism and Misconduct in Scientific Publishing* (Berkeley, CA: University of California Press, 1996). See also the small book by Alan Chalmers, *Science and Its Fabrication* (Minneapolis: University of Minnesota Press, 1990); and also Nancy Cartwright, *How the Laws of Physics Lie* (Oxford: Oxford University Press, 1986).

144 See, for instance, Archie J. Bahm, *Axiology: The Science of Values* (Amsterdam: Editions Rodopi, 1993), and its useful bibliography on various aspects of the subject.

> historical and cultural moment condition the very nature of questions it can ask—or answer.[145]

And we should systematically build the intellectual and institutional capacity to apply this deconstructive-reconstructive approach to sciences such as medicine, agriculture, economics, biology, physics, chemistry, engineering and other important disciplines of the modern academia impacting on Muslim intellectual, cultural, social and economic life.

Operationally, the Worldview of Islam Course (WIC) or Worldview of Islam Intellectual Series (WISE)[146] shall be offered at two levels. One level is for high school or pre-university matriculation students before they enrol in the modern academia for formal studies of the various modern disciplines. Another level is that which targets high school teachers and university lecturers, including postgraduate researchers, working professionals, educational policy-makers and curriculum-developers, who teach and/or design the courses in any of the modern disciplines, from preschool to tertiary levels of education. These two levels are conceptually connected but with different immediate pragmatic objectives.

The objective of the first level or WISE Level I is to provide pre-university students with a critical survey or mapping of the numerous, diverse disciplines on offer in the modern academia. The mapping can equip the students in a way that will enable them to stand back, reflect and consider carefully the intellectual and career direction they are about to undertake, and its long-term implications for their belief and value system as Muslims who are self-conscious about their worldview, and about their duty to their local communities and to the larger cosmopolitan society in which their communities may be embedded, whether in the East or West. This mapping, as a *generative guide* to creative reflection and thoughtful deliberation, will help soon-to-be university students to be more discriminative in the course of choosing their fields of study and their majors; to be very selective in their choice of universities, faculties or departments to enrol in; and even to be very particular about their choice of professors, lecturers and academic supervisors, insofar as they are able or allowed to exercise that choice.

By means of this critical mapping—which itself is deeply rooted in and inspired by the classical Islamic classification of the sciences[147]— it is hoped that students will be able to opt for disciplines and decide on career paths that are truly beneficial rather than harmful, meaningful rather than frivolous or superfluous, and that are geared toward meeting some real social, cultural, intellectual or economic needs of their communities, rather than serving narrow corporate greed, nihilistic economic growth or disembedded material development, or even aimless idle curiosity. For instance, by means of this critical

---

[145] Keller, "*Kalam* and Islam," 25.

[146] Title and acronym proposed by Dr. Mohd Zaidi Ismail of IKIM, and accepted by the management of the course.

[147] Osman Bakr, *Classification of Knowledge in Islam: A Study in Islamic Philosophies of Science* (Cambridge: Islamic Texts Society, 1998).

mapping one may want to opt for green chemistry[148] rather than conventional chemistry, natural medicine [149] or naturopathy over conventional allopathic medicine, cognitive psychology[150] over behaviourial psychology, ecological and steady-state economics[151] over neoliberal capitalism, organic or permaculture[152] over chemical intensive agriculture, biomimicry [153] over biotechnology, [154] appropriate technology[155] over high technology, and so on and so forth.

Such choices are arguably more in accord with the Islamic axiological principles of not harming (*lā ḍarara wa lā ḍirara*), beneficial knowledge (*ʿilm nāfiʿ*) and compassion (*raḥmah*). Along the way, one is also to be guided by means of this critical mapping toward unravelling the ideological, methodological, philosophical and metaphysical assumptions underpinning those disciplines and the often hidden, murky parochial background of their original development in post-Enlightenment socio-intellectual history, or even in the relatively recent post-World War II geopolitical restructuring and readjustment leading to the current world-system.[156]

The objective of the second level or WISE Level II is to help working professionals, researchers and policy-makers to transform both the content and the method of what they are presently doing so that these will eventually be brought into *axiological accord* with the Worldview of Islam. For instance, as a result of this critical mapping, a Muslim researcher in physics can be more critically aware of the ontic and epistemic limits of the laws of physics,[157] and he

---

148 Including related areas such as green engineering and green technology; see, for instance, Paul T. Anastas and John C. Warner, *Green Chemistry: Theory and Practice* (Oxford: Oxford University Press, 1998).

149 Leon Chaitow et al., *Naturopathic Physical Medicine: Theory and Practice for Manual Therapists and Naturopaths* (Philadelphia: Elsevier, 2008).

150 Cognitive psychology is on the whole arguably more in accord with traditional Islamic faculty psychology; see Syed Muhammad Naqib al-Attas, *The Nature of Man and the Psychology of the Human Soul: A Brief Outline and a Framework for an Islamic Psychology and Epistemology* (Kuala Lumpur: ISTAC, 1990); cf. for instance, Ray Jackendoff, *Patterns in the Mind: Language and Human Nature* (New York: Harvester Wheatsheaf, 1993); and Noam Chomsky, *Language and Problems of Knowledge: The Managua Lectures* (Cambridge, MA: MIT, 1987). Cf. also Karl Popper and John C. Eccles, *The Self and Its Brain: An Argument for Interactionism* (London: Routledge, 2003); John C. Eccles, *The Human Psyche: The Gifford Lectures* (London: Routledge, 1992); Karl R. Popper, *Knowledge and the Body-Mind Problem: In Defence of Interaction* (London: Routledge, 1994); and Mario Beauregard and Denyse O'Leary, *The Spiritual Brain: A Neuroscientist's Case for the Existence of the Soul* (New York: Harper One, 2007).

151 Herman Daly, *Steady-State Economics*, 2d edition (Washington, DC.: Island Press, 1991).

152 Bill C. Mollison, *Permaculture: A Designer's Manual* (Sisters Creek, Tasmania: Tagari Publications, 1988).

153 Janine M. Benyus, *Biomimicry: Innovation Inspired by Nature* (New York: William Morrow, 1997).

154 On the dangers of biotechnology, see Brian Tokar, ed., *Redesigning Life?: The Worldwide Challenge to Genetic Engineering* (London: Zed Books, 2001).

155 Barrett Hazeltine and Christopher Bull, eds., *Field Guide to Appropriate Technology* (New York: Academic Press, 2003).

156 See, for instance, Christopher Chase-Dunn, "World-Systems Theorizing," in Jonathan Turner, ed., *Handbook of Sociological Theory* (New York: Plenum, 2001).

157 Nancy Cartwright, *How the Laws of Physics Lie* (Oxford: Oxford University Press, 1983); idem, *A Dappled World: A Study of the Boundaries of Science* (Cambridge: Cambridge University Press, 1991).

may thereby opt for the Bohmian ontological interpretation of quantum mechanics over the mainstream Copenhagen instrumentalist interpretation[158]; an education policy-maker may want to make a course in ecology a prerequisite to an economics programme or even embed economics altogether into ecology and/or sociology, thereby redefining economics and creating what can be termed an *ecologics of economics*.[159]

Similarly, a biology school teacher may want to transform his biology course into a true "science of life" by putting the "bio" back into biology through the phenomenological approach to the study of nature by opting, *inter alia*, for the class to study, say, actual living frogs by a pond embedded in the woods, rather than chloroformed or tortured, dead, dissected frogs pinned to a cold lab bench, thoroughly disembedded from any real, living ecosystemic contexts of the natural world.[160] As the Nature Institute puts it:

> Many of us were introduced to biology—the science of life—by dissecting frogs, and we never learned anything about living frogs in nature. Modern biology has increasingly moved out of nature and into the laboratory, driven by a desire to find an underlying mechanistic basis of life. Despite all its success, this approach is one-sided and urgently calls for a counterbalancing movement toward nature. Only if we find ways of transforming our propensity to reduce the world to parts and mechanisms, will we be able to see, value, and protect the integrity of nature and the interconnectedness of all things. This demands a new way of seeing.[161]

This phenomenological approach to science and the study of nature is obviously way much more in accord with the Islamic conception of nature as exhibiting the signs of God (*āyātuI.lāh*);[162] and as *āyātuI.lāh* they all celebrate, with the tongues of their existential states (*lisān al-ḥāl*), the praises of their Lord: *wa in min shay'in illā yusabbiḥu bi ḥamdihī*—"And there is not a thing but hymns His praise."[163]

The *Kalām*/Dialectics of the Age approach discussed above may be schematised in the form of three concentric circles as follows:

---

158 David Bohm, *Wholeness and the Implicate Order* (London: Routledge, 1980); idem and B. J. Hiley, *The Undivided Universe: An Ontological Interpretation of Quantum Theory* (London: Routledge, 2002).

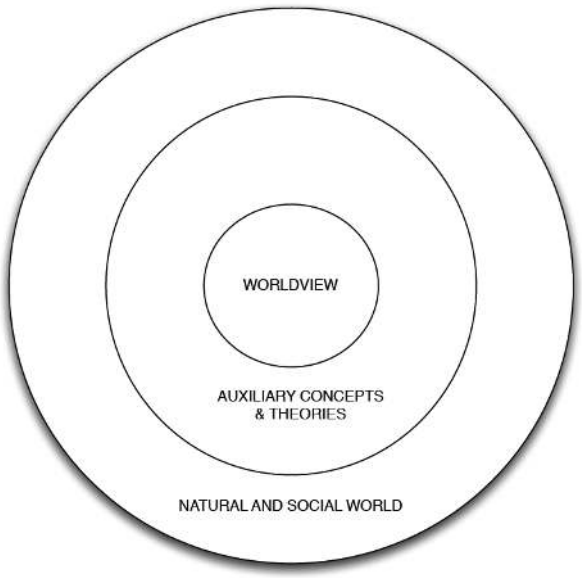
159 Herman E. Daly and Joshua Farley, *Ecological Economics: Principles And Applications* (Washington, D.C.: Island Press, 2004).

160 Erin Radelfinger, "Dissecting Dissection: A Resource Handbook for High School Biology Educators," accessible online at http://www.scoe.org/files/dissection.pdf.

161 http://natureinstitute.org/nature/index.htm. See also Thom Henly and Kenny Peavy, *As If the Earth Matters: Recommitting to Environmental Education* (2006).

162 Annamarie Schimmel, *Deciphering the Signs of God: A Phenomenological Approach to Islam* (New York: SUNY, 1994); and Adi Setia, "*Taskhīr*, Fine-Tuning, Intelligent Design and the Scientific Appreciation of Nature," in *Islam & Science* (Summer, 2004), 7—32.

163 *al-Isrā'*: 44.




The inner circle represents the unchanging, permanent metaphysical core expressed as the "Worldview of Islam" (*ru'yat al-Islām li al-wujūd*).[164] The middle circle represents the network of auxiliary conceptual constructs, theories and hypotheses, which may be modified, changed or added to from time to time and may be called the "network of auxiliary theories" (*shabakah al-naẓariyyāt al-mulḥaqah*). This middle circle effectively represents the creative, critical yet self-critical *kalām* or dialectics of the age. The outer circle represents nature (*al-tabīʿah*), the physical, sensible world itself, or simply, the "physical world," which may also be extended to include the human, socio-cultural world insofar as it is inextricably embedded in the larger natural world. The challenge of Islamic scientific creativity today lies squarely in the middle circle and consists in the intellectual work of articulating objective conceptual and theoretical frameworks for bringing the worldview of tradition to bear evaluatively, in both the cognitive and ethical sense, on our engagement with and understanding of the natural and cultural world, especially the cultural world which is now so overwhelmingly under the sway of a secularising, nihilistic mode of thinking and doing systemically imparted to both Muslims and non-Muslims alike through the various disciplines of the modern academia. [165]

By "objective" is meant that this dialectics is to be also amenable to participation and scrutiny by non-Muslim thinkers, philosophers and scientists, if they so wish, even if they do not believe or are not committed to the metaphysical core (i.e., the Worldview of Islam), by common reference to the very same

[164] Al-Attas, *Prolegomena*, 2.

[165] Further elaboration in Adi Setia, "Three Meanings of Islamic Science: Toward Operationalizing Islamization of Science," *Islam & Science* 5, no. 1 (Summer 2007): 23–53. See also idem, "Some Upstream Research Programs for Muslim Mathematicians: Operationalizing Islamic Values in the Sciences through Mathematical Creativity," *Islam & Science* 6, no. 2 (Winter 2008): 153–196; and idem, "Islamic Science as a Scientific Research Program: Conceptual and Pragmatic Issues," in *Islam & Science* (Summer 2005), 93—101.

physical and social world observationally and experientially accessible to both Muslims and non-Muslims alike and in which they are both embedded.

It is by virtue of this objectivity that Muslim scientists involved in the new dialectics will have no problem recognising certain positive elements of Western and Eastern sciences and incorporating their insights into both their intellectual and practical work. For example, modern permaculture and organic farming can be easily assimilated into classical Islamic *filāḥah* (science of agriculture and animal husbandry),[166] thereby reviving it to play a meaningful and beneficial role in the current world-wide movement for returning to and reviving natural farming without the use of chemicals, pesticides, synthetic fertilizers and genetic engineering.

To underline this important point about objectivity, it is worth mentioning the recent 72-hour Permaculture Design Certificate course on the science, art and practice of permaculture and sustainable living that was recently organised by Murujan Permaculture in Kuang, Selangor, Malaysia. Most of the nearly twenty participants from Malaysia and elsewhere were Muslims but the three non-Muslims participants (from Australia, Poland and Singapore) also found the course to be very useful and beneficial to them.[167] Another case in point is the recent 5-day Christian-Muslim Interfaith Dialogue on Structural Greed organised by the Lutheran World Federation in which the roughly fifty participants, Muslim and Christians from Malaysia, Indonesia, Germany, England, United States, Peru and other countries, succeeded in converging, on the very first day itself, on redefining economics with respect to its ends as the science of the organization of livelihood for the common good, and in the process they all agreed to do away with the conventional obsessive concern with the idea of scarcity and growth.[168]

Although further elaboration is needed on the creative nature of the dialectical middle circle, which is basically where the discursive reason (*fikr/naẓar*) and contemplative intellect (*ʿaql/wijdān*) mediate between the book of revelation and the book of creation, a simple general example may here suffice to give some degree of insight into what this creativity entails in *operative* terms.

The Qurʾān says that the Prophet was sent by the Creator as a mercy to all the worlds (*raḥmatan lil-ʿālamīn*).[169] If we, as scientists, are to follow in the footsteps of the merciful Prophet, then the way we study nature and interact with it (*muʿāmalatu al-nāsi al-tabīʿata*) is constrained by the prophetic ethics of cosmic mercy.[170] This means that much of what we do or take for granted in contemporary science and technology has to be seriously and systemically

---

166 http://www.filaha.org/

167 A review of the course is on the website: http://murujan.com/2012/03/19/permaculture-design-course-review/.

168 The conference findings can be assessed online at http://www.lutheranworld.org/lwf/wp-content/uploads/2011/10/DTS-KotaKinabalu2011_FinalDoc.pdf. For a detailed report, see Wan Mohd Aimran Wan Mohd Kamil, Aliff Basri and Adi Setia, "Engaging Structural Greed Today: A Christian-Muslim Interfaith Dialogue, Report and Reflections," in Adi Setia, trans., *The Book of Earning a Livelihood* (*Kitab al-Kasb* of *Imām Muḥammad al-Shaybānī*), Appendix III, pp. 227—288.

169 Qur'an, *al-Anbiyāʾ*: 107.

170 Umar Faruq Abd Allah, "Mercy, the Stamp of Creation," Nawawi Foundation paper (online at www.nawawi.org/downloads/article1.pdf).

rethought and reconsidered since it is obviously unrestrained by the ethics of mercy. Modern science and its technological offshoots are, in many diverse, complex ways, very aggressive and destructive toward nature and, by extension, toward humankind as part of nature.[171] If, by definition, science is "the study of nature," then obviously it is in the interest of science to preserve nature in order to guarantee its continued study by science. Thus, *scientific curiosity entails moral responsibility*.

However, the paradox now is that the more science discovers and knows about nature, the more of nature is devastated, and the less there remains of it to be studied and appreciated. It is as if the modern pursuit of abstract, cerebral science and its manipulative technological offshoots have to go hand in hand with the desolation and disappearance of living nature as an unavoidable consequence, but that position is unacceptably fatalistic for truly concerned and reflective Muslim scientists, including non-Muslim scientists like Bill Mollison.[172] For them, the Qurʾānic ethics of universal, cosmic mercy points the way clearly toward another way of doing science, namely, one that respects and preserves nature (and by extension humankind) rather than destroys it, and a well-articulated *kalām* dialectics of science involving the active participation of all thinking, reflective and self-critical ulama and scientists (including all sensible people who works closely with nature) will facilitate the task and duty toward realising that science in practice. The following are some specific examples by way of further illustration.

Vivisection—meaning 'to cut alive' hence, the preferred, more polite term, 'animal testing', or 'animal experimentation' in modern medical academia—is the way western, business-driven medicine tortures various species of live animals (rats, mice, rabbits, chimpanzees, dogs, cats) to test drugs in order to rid humanity of their ever-lengthening list of old and new diseases. As a method of medical research (specifically testing drugs for safety and effectiveness), it is relatively new (only a hundred or so years old) and peculiar to modern Western medical culture that is now hopelessly corrupted, cognitively and morally, by crass commercialism and corporatism.[173] Quite apart from the extrinsic question of ethical concern for the welfare of lab animals in respect thereof, there is also a more fundamental intrinsic question, namely, the question of the scientific integrity (or cognitive value) of the underlying, largely unexamined assumption of a significant degree of biological, biochemical and physiological parity between

---

171 See, for instance, the book by Claude Alvares, *Science, Development and Violence: The Revolt against Modernity* (New Delhi: Oxford University Press, 1992); and idem, "Science," in *The Development Dictionary*, ed., Wolfgang Sachs (London: Zed Books, 1992), pp. 219—232.

172 Bill Mollison, *Permaculture: A Designer's Manual* (Tagari Publications, 1988), 11—12 on "Science and the Thousand Names of God."

173 Ray D. Strand, *Death by Prescription: The Shocking Truth Behind an Overmedicated Nation* (Thomas Nelson, 2003); cf. Marc A. Rodwin, *Conflict of Interestes and the Future of Medicine: The United States, France, and Japan* (New York: Oxford University Press, 2011); and Maggie Mahar, *Money-Driven Medicine* (Collins, 2006).

laboratory test animals and human beings justifying extrapolations of laboratory data from the former to the latter.[174]

The *kalām* dialectical deconstruction and reconstruction of modern medicine for Muslim medical researchers in this regard will be to find systemic alternatives of unquestioned scientific probity and ethical integrity to vivisection, including valid alternatives critically-sourced from presently marginalised Western (e.g., homeopathy, naturopathy) and eastern medical traditions (e.g., traditional Chinese medicine[175]) which could be incorporated into a well-articulated Islamic Medicine Research Program (IMRP). Some of these alternatives can also be gleaned by undertaking evidence-based medical research into the well-documented but largely neglected vast corpus of the very successful one thousand year-old Islamic cosmopolitan medical tradition.

Modern agriculture, to take another case in point, is overly chemical-intensive with widespread use of pesticides, herbicides, synthetic nitrogen fertilisers and other toxic inputs, which poison and degrade the soil, kill rural wildlife, even toxify the harvests and disrupt the health of farmers and workers. Traditional farming methods have been perfectly adapted to local socio-natural conditions generating a symbiotic, holistic balance between the needs of humanity and the rights of nature.[176] As the word implies, agriculture is a *culture*, a whole way of life of mutual respect, communal give and take, and cooperative rather than competitive living. Indeed, there are also agro-innovations, but innovations within ecological and cultural limits, as the case of Andalusian agricultural science and practice (*ʿilm al-filāḥah*) shows.[177] It is not a mere business, as the modern corruption of the original word into "agribusiness" would have it—most exemplified perhaps in the infamous case of Monsanto[178]—which imposes the *face-less* corporate tyranny of disembedded, impersonal profit-

---

[174] Pietro Croce, *Vivisection or Science: An Investigation into Testing Drugs and Safeguarding Health* (London: Zed Books, 1999). See also C. Ray Greek and Jean Swingle Greek, *Sacred Cows and Golden Geese: The Human Costs of Experiments on Animals* (New York: Continuum. 2002); and Ray Greek and Niall Shanks, *FAQS about the Use of Animals in Science: A Handbook for the Scientifically Perplexed* (Lanham, MD: University Press of America, 2009).

[175] For understanding traditional Chinese medicine, see the sensitive, nuanced and deeply reflective book by Stephen Fulder, *The Tao of Medicine: Oriental Remedies and the Pharmacology of Harmony* (Rochester, Vermont: Destiny Books, 1987).

[176] Mae-Wan Ho, Sam Burcher et al., *Food Futures Now: Organic, Sustainable, Fossil Fuel Free* (Penang: Third World Network, and London: Institute of Science in Society, 2008).

[177] Abū Zakariyyā Yaḥyā ibn Muḥammad ibn Aḥmad ibn Al-Awwām Al-Ishbilī (ca. 12th century), *Kitāb al-Filāḥaḥ* as described in Toufic Fahd, "Botany and Agriculture," in Regis Morelon and Roshdi Rashed, *Encyclopedia of the History of Arabic Science* (London: Routledge, 1996). See also the website of The Filaha Texts Project: The Arabic Books of Husbandry, http://www.filaha.org/. For *filāḥah* in the Yemen, see Daniel Martin Varisco, *Medieval Agriculture and Islamic Science: The Almanac of a Yemeni Sultan* (Seattle: University of Washington Press, 1994).

[178] For the case against Monsanto, see Peter Pringle, *Food, Inc.: Mendel to Monsanto, The Promises and Perils of the Biotech Harvest* (New York: Simon & Schuster, 2005); and Marie-Monique Robin, *The World According to Monsanto: Pollution, Corruption, and the Control of Our Food Supply, An Investigation into the World's Most Controversial Company* (New York: New Press, 2010). See also Karl Weber, ed., *Food, Inc.: How Industrial Food is Making Us Sicker, Fatter, and Poorer, and What You can Do about It* (New York: Public Affairs, 2009), a book companion to the acclaimed and influential film documentary, *Food, Inc.*

maximisation on once self-respectful, independent farmers and indigenous peoples, reducing them to wage- and debt-slaves, squatters and refugees on the very lands they once have had ancestral and native customary rights to, but now wrested from them by faceless, soulless corporations which have cleverly lobbied and coopted the political and legal structures of the state into serving their narrow, self-serving agenda.

It is strange that agricultural food production, which once unquestionably served the well-being of humankind, should now, in the hands of big transnational agrochemical companies like Monsanto, be seen to be working toward destroying the very ecological and cultural basis of that well-being. In order to return agricultural practice onto the ethical and moral path of compassion and service toward both culture and nature, the *kalām* dialectics would work toward rearticulating an authentic Islamic Agricultural Research Program (IARP) as one that eschews harmful chemicals altogether, and instead looks into the various effective sustainable organic agricultural methods now available, such as permaculture and natural farming,[179] and develop new ones by, for instance, drawing on the thousand years' accumulated experience of the very successful Islamic agricultural tradition—the original, truly "green" revolution in the history of mankind.[180] In this respect, the "greening the desert"[181] initiative by the world-renowned permaculturist Geoff Lawton and his partners in Jordan is a great inspiration for us all who care deeply about nurturing a healthy relationship with "soil, soul and society."[182]

## 10. Worldview of Islam, the Counter-Academia, and the Imperative of Scientific Objectivity

Ultimately, all these initiatives toward a constructive *counter-academia*[183] will have to be systemically consolidated under academic and vocational educational structures quite independent of the mainstream educational establishment. The underlying consideration here is that we really want our students and graduates to be able not only to understand the Islamic tradition and the Worldview of Islam, but also to be able have careers and make a decent, respectable and meaningful livelihood for the common good (*al-maṣlaḥah al-ʿāmmah*) by using their knowledge and training to operationalise the Worldview of Islam in the

---

179 Bill Mollison, *Permaculture: A Designers' Manual* (Tasmania: Sisters Creek, Tagari, 1988)

180 Andrew M. Watson, *Agricultural Innovation in the Early Islamic World: The Diffusion of Crops and Farming Techniques, 700—1100* (Cambridge: Cambridge University Press, 2008), especially 123—138 passim.

181 Please access the information about this wonderful work online at the website, http://permaculture.org.au/project_profiles/middle_east/jordan_valley_permaculture_project.htm

182 Allusion to the book by Alastair McIntosh, *Soil and Soul: People Against Corporate Power* (London: Aurum Press, 2004).

183 Examples that spring to mind is the Schumacher College in the UK and the networks of permaculture research institutes throughout the world. Another recent and promising initiative in this regard (though as yet not totally independent) is the Center for Advanced Studies on Islam, Science and Civilisation (CASIS), based in Kuala Lumpur, Malaysia, http://www.utm.my/casis/. There are also serious plans in place for establishing the Worldview of Islam Research Academy (WIRA) to be based in the state of Terengganu in Malaysia.

public, socio-economic domain within the local communities in which they are embedded, hence, for instance, the HAKIM (http://www.hakim.org.my/) initiative in organizing the public educational Worldview of Islam Intellectual Series (WISE) with various partners and supporters, and the Muʿamalah Research Unit (MRU) at the International Islamic University Malaysia (IIUM) for reviving an economics for the common good.

While WISE works toward fleshing out in conceptual and pragmatic terms the operational implications of the Worldview of Islam by formulating and offering curricula, syllabi and courses for reviving the arts and sciences of responsible intellectuality and sustainable living in the world, the focus of the MRU is to revive the original meaning and purpose of economics, which we have formally redefined as the science of "provisioning and sharing, by mutual giving and receiving, of natural and cultural abundance for realising material and spiritual well-being for the common good," or "the science of earning and provisioning for livelihoods," (= *ʿilm al-iktisāb wa al-infāq*) and thereby, put into operation the Islamic Gift Economy (IGE, *al-iqtiṣād al-infāqī*) or Common-Good Economics.[184]

The question of scientific objectivity (i.e., the question of what should count as objectively-verified knowledge and the research methods by which this objectivity is ascertained and attained) has more to do with the cognitive rather than ethical values underpinning the *kalām* dialectical approach, although in Islamic scientific practice, the cognitive merges seamlessly into the ethical and becomes one with it, hence, the foundational notion of *adab* as knowledge realised in virtue through *taʾdīb* (education as discipline of mind, soul and body).[185] In other words, cognitive evaluation and ethical evaluation are both intrinsic to the success of the scientific enterprise in Islam, as is quite evident in, say, Ibn Haytham's much studied scientific methodology, which also involved a thoroughgoing "kalāmic" dialectics with Greek physical and optical theories.[186] The realisation that scientific objectivity and methodological probity are not possible without concomitant ethico-moral integrity has been growing in the West and is now converging on a position more in accord with that of the Worldview of Islam, thereby allowing much room for mutual constructive engagement on this important meta-scientific issue.[187]

---

[184] Adi Setia, "*Waqf* and the Revival of the Islamic Gift Economy," in *Awqaf Insights* 3 (2010): 14–15; idem, "*Muʿāmala* and the Revival of the Islamic Gift Economy," in *Islam & Science* (Summer 2011), 67—88; idem, "Reviving an Economics for the Common Good: The Science of Earning in al-Shaybānī, al-Ghazālī and al-Dimashqī," in *Islam & Science* (Winter 2011), 177—184.

[185] Al-Attas, *The Concept of Education*; see also the elaborate and insightful discussion in Wan Mohd Nor, *The Educational Philosophy*.

[186] Muhammad Saud, *The Scientific Method of Ibn al-Haytham* (Islamabad: Islamic Research Institute, 1990); and A. I. Sabra, *The Optics of Ibn al-Haytham* (Kuwait: National Council for Culture, 2002).

[187] See, for instance, Alvin M. Weinberg, "The Axiology of Science: The urgent question of scientific priorities has helped promote a growing concern with value in science," in *American Scientist*, vol. 58 no. 6 (November-December 1970), 612-617; Brian Martin, "Scientific fraud and the power structure of science," *Prometheus*, vol. 10, no. 1 (June 1992), 83-98.

To illustrate briefly how the concept of scientific objectivity actually operates in the *kalām* dialectics with respect to cultivating an intellectually self-competent and self-confident critical attitude toward the Western sciences and disciplines, let us consider the twin Qurʾānic cognitive principles of *tabayyun* (investigation, scrutiny) and *tabarhun* (proof, evidence). Due to the global dominance of Western science, Muslim scientists are continuously bombarded with reports of promising new methods, discoveries and techniques in prestigious Western science journals like the *Journal of the American Medical Association* (JAMA), *Nature*, *Science*, *New Scientist* and *Scientific American*. It will be thoroughly irresponsible of them to take these reports at face value without undertaking their own investigation (*tabayyun*) into the often hidden, diverse underlying socio-economic contexts of these reports and ascertaining their *empirical adequacy* (*burhān*) and *epistemic autonomy* (*al-istighlāl al-ʿilmī*) from powerful forces geared less toward global scientific enlightenment than narrow political economic and commercial self-enrichment.[188]

Creative understanding and practice of *tabayyun* and *tabarhun*, as exemplified by Ibn Haytham, will help Muslim scientists to separate the wheat from the chaff of Western science and technology and incorporate it into an integrative Islamic Science Research Program (ISRP). For instance, in the case of chemistry, the growing new field of "green chemistry"[189] is something that shows great promise for eliminating the threat of toxic chemicals from the cultural and natural landscape, thus realising the foundational ethico-juridical principle of *lā ḍarara wa lā ḍirara* ("no harming and no reciprocating harm"),[190] which is itself derived from the cosmic, prophetic principle of universal mercy.

**11. Conclusion: The Question of Viable and Feasible Structures and Strategies**

As alluded to above, the highly important, strategic question of appropriate higher educational institutional structures needs to be addressed for realising the Islamic Science Research Program (ISRP)[191] over the long term, especially by educating and training postgraduate researchers (including university professors, even) to creatively apply ISRP principles (culled from *kalām jadīd* and contemporary history, philosophy and sociology of science)[192] to their respective specializations.

Frankly speaking, I harbour grave misgivings as to whether this vision of the ISRP in the framework of the *Kalām* of the Age can be faithfully and successfully realised from within the current restrictive and compromised pedagogic framework of the modern academia, including the current "Islamic University" system, which to a large extent, is either overly coopted into the

---

188 For the case of modern medicine and the structural conflicts of interest plaguing it, see Marc A. Rodwin, *Conflicts of Interest and the Future of Medicine: The United States, France, and Japan* (New York: Oxford University Press, 2011).

189 And related areas such as green technology, green engineering and green architecture (eco-building).

190 Which is actually hadith no. 32 in Imām al-Nawawī's *Forty Hadiths* (*al-Arbaʿīn al-Nawawiyyah*).

191 Adi Setia, "Islamic Science as a Scientific Research Program: Conceptual and Pragmatic Issues," *Islam & Science* 3, no. 1(Summer 2005): 93–101.

192 See idem, "Three Meanings," 23–52.

secular agenda of corporate globalization or into the political economic agenda of the over-centralised state, or into both.

Under the current difficult circumstances, the way forward may have to take the form of a loose, informal network of autonomous grassroots educational and research initiatives, such as centers, institutes, academies, *madrasah*s and think-tanks, build up by independent, community-rooted scholar-intellectuals of conscience and vision and their student-supporters who know one another intimately through formal and informal visits, talks, conferences and other avenues of close intellectual and personal interactions toward a common educational and civilisational mission in which the ISRP can be embedded and realised.

Some of these grassroots educational initiatives, though small and limited in scope and resources, are already well-established and flourishing in places such as Malaysia, Turkey, Syria, Egypt, Libya, Dubai, Jordan, Yemen, England, Scotland, the United States, South Africa, Indonesia and Canada, some of which I have personally visited to share some of the Worldview ideas outlined in this paper and other papers. I may take the liberty here of mentioning some of these initiatives by name, such as the Solas Foundation (UK), the Center for Islam & Science (Canada), HAKIM (Malaysia), Cambridge Muslim College (UK), CASIS (Malaysia), INSISTS (Indonesia), Andalus Institute (Singapore), Waqf Academy (South Africa) and others, some of which are currently in the early planning stages, such as the Worldview of Islam Research Academy (WIRA) project to be initially based in Tok Jiring, Terrengganu, Malaysia.

Eventually, some form of consensus will emerge on common academic and scholarly standards by which a student qualified in, say, the traditional religious sciences from one institute can be recognised and accepted for a course of study in the intellectual, empirical and vocational sciences in another institute dedicated to the programme of Islamizing the disciplines that have to do with earning an honourable and meaningful livelihood in the service of the common good of the community—i.e., the *farḍu kifāyah* sciences in general. This will of course entail a really, really hard-headed look at how the concept of *farḍu kifāyah* (communal duty realised for the common good) should actually be made operative in serving the common good rather than remaining for the most part a deceptive feel-good slogan, as is largely the case today. One bad habit we definitely need to overcome is reducing lofty Islamic principles and concepts (e.g., *farḍu kifāyah*, *maqāṣid al-sharīʿah*) into verbal fodder for empty sloganeering.

As pointed out by S. Nomanul Haq, there is a great need today to revise the way we educate university science students so that they know how to integrate their scientific learning and expertise into the more fundamental and higher goals of human life, and thus, avoid altogether the destructive, suicidal pitfalls of scientism.[193] True science is beneficial knowledge (*al-ʿilm al-nāfiʿ*) resulting in wholesome livelihoods (*al-kasb al- ṭayyib*) and virtous works (*al-aʿmāl al-ṣāliḥah*) that are geared toward serving rather than subverting these higher, human goals. The highest goal, the *summum bonum*, is, of course, "to bring a sound conscience

[193] Syed Nomanul Haq, "Science, Scientism and the Liberal Arts," *Islam & Science* 1, no. 2 (December 2003), 267–271.

(*qalbin salīm*) to the meeting with the Lord,"[194] and thereby, to attain His pleasure (*marḍātiI.lāh*). We may now finally wrap up all these intertwined considerations and reflections with these wise and perceptive words of counsel from Professor Syed Muhammad Naquib al-Attas:

> What we need, then, is not a *reconstruction*, but a *restatement* of the statements and conclusions of Islamic metaphysics in accordance with the intellectual perspectives of our times and the developments in the domain of knowledge; and this entails an *realignment*, where relevant and necessary, of the *direction* of developments in the various sciences such that they become integrated with it.[195]

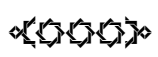
In another place, he says:

> We must learn from the great of the past their knowledge and wisdom. This does not mean that we ourselves cannot contribute any further knowledge that can be contributed, but it does mean that we must first draw our strength [and] inspiration from their wisdom and knowledge, and that when we do begin to contribute ours, we must recognize and acknowledge them as our teachers. and not disparage and denounce, for ijtihad can be exercised without having to undermine legitimate authority. They are like torches that light the way along difficult paths; when we have such torches to light our way, of what use are mere candles?[196]

In short, we all have to learn again how to stand firmly on the shoulders of giants, and reapply their insight, vison and wisdom to engaging the difficult situation of our age, dispelling its darkness and shadows, and finding the liberating light at the end of the long, winding tunnel. *WaI.lāhu aʿlam.*

*yahdiI.lāhu li nūrihī man yashāʾu*

ALLĀH GUIDES TO HIS LIGHT WHOMEVER HE WILLS[197]



---

[194] *Al-Shuʿarāʾ* (26): 89.

[195] *Ḥujjat al-Ṣiddīq*, 465. In a similar vein, Maulana Ashraf Ali al-Thanvi (1863—1934), in his *al-Intibahat al-Mufeedah*, translated by Muhammad Hassan Askari and Karrar Husain as *Answer to Modernism*, 2nd ed. (Karachi: Maktaba Darul-Uloom), has pointed to the fact that this intellectual engagement would require an elaborate reapplication of the "sufficient and comprehensive" principles of traditional *ʿilm kalām* (dialectical theology) to answering the challenge of modern science and philosophy (on pp. 1—5).

[196] *Islam and Secularism*, 132.

[197] Qurʾān, *al-Nūr*: 35.

## Principal References and Recommended Readings[198]


Al-Akiti, Afifi. "The Good, the Bad, and the Ugly of Falsafa: Al-Ghazālī's *Maḍnūn*, *Tahāfut*, and *Maqāṣid*, with Particular Attention to their Falsafi Treatments of God's Knowledge of Temporal Events," in Y. Tzvi Langermann, ed., *Avicenna and His Legacy: A Golden Age of Science and Philosophy* (Turnhout, Belgium: Brepols, 2009), pp. 51—100.

_____and Hisham Hellyer, "The Negotiation of Modernity through Tradition in Contemporary Muslim Intellectual Discourse: The Neo-Ghazalian, Attasian Perspective," in Wan Mohd Nor Wan Daud & Muhammad Zaini Uthman, eds., *Knowledge, Language, Thought & the Civilization of Islam: Essays in Honor of Syed Muhammad Naquib al-Attas* (Kuala Lumpur: UTM, 2010), pp. 119—134.

Al-Attas, Syed Muhammad Naquib. *Islam and Secularism* (Kuala Lumpur: ISTAC, 1993).

_____*Prolegomena to the Metaphysics of Islam: An Exposition of the Fundamental Elements of the Worldview of Islam* (Kuala Lumpur: ISTAC, 2001).

_____*The Concept of Education in Islam: A Framework for an Islamic Philosophy of Education* (Kuala Lumpur: ISTAC, 1991).

Alvares, Claude and Shad Saleem Faruqi, *Decolonising the University: The Emerging Quest for Non-Eurocentric Paradigms* (Penang: USM, 2012).

Bakar, Osman. *Classification of Knowledge in Islam: A Study in Islamic Philosophies of Science* (Cambridge: Islamic Texts Society, 1998).

Al-Ghazālī, Abū Ḥamīd Muḥammad. *Tahāfut al-Falāsifah*, trans. Michael Marmura, *The Incoherence of the Philosophers* (Provo, Utah: Brigham Young University Press, 2000).

_____ *Kitāb al-ʿIlm*, trans. Nabih Amin Faris, *The Book of Knowledge* (New Delhi: Idara, 2008).

Kalin, Ibrahim. *Reason and Rationality in the Qur'an* (Amman: Royal Aal al-Bayt Institute, 2012).


[198] Lest the average, interested reader feels overwhelmed by the many academic and popular references cited in the copious footnotes to this paper, what follows is a hopefully more manageable guide to what I believe are some of the more accessible principal readings in English pertaining to the paper's thesis that they can peruse at a steady yet leisurely pace over the course of a month or so, *in shāʾ Allāh*.

Keller, Nuh Ha Mim, "Kalam and Islam: Traditional Theology and the Future of Islam," *Islamica*, no. 13 (Summer 2005), pp. 15—27.

Latouche, Serge. *The Westernization of the World: The Significance, Scope and Limits of the Drive towards Global Uniformity* (Cambridge: Polity Press, 1996).

Sabra, A. I. "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement," *History of Science*, 25 (1987), pp. 223—42.

_____"Science and Philosophy in Medieval Islamic Theology: The Evidence of the Fourteentn Century," *Zeitschrift fur Geschichte der Arabisch-Islamischen Wissenschaften*, 9 (1994), pp. 1—42.

_____"Kalām Atomism as an Alternative to Hellenizing Falsafa," in James E. Montgomery, ed., *Arabic Theology, Arabic Philosophy, from the Many to the One: Essays in Celebration of Richard M. Frank* (Leuven: Peeters, 2006), pp. 199—272.

Saliba, George. *Islamic Science and the Making of the European Renaissance* (Cambridge, MA: MIT Press, 2007).

Shihadeh, Ayman. "From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology," *Arabic Sciences and Philosophy*, vol. 15 (2005), pp. 141—179.

Setia, Adi. "Three Meanings of Islamic Science: Toward Operationalizing the Islamization of Science," *Islam & Science*, 3 (2007), pp. 23—52.

_____"The Philosophy of Science of Syed Muhammad Naquib al-Attas: An Extended Outline," *Islam & Science*, 1 (2003), pp. 165—214.

_____"*Taskhīr*, Fine-Tuning, Intelligent Design & the Scientific Appreciation of Nature," *Islam & Science*, 2 (2004). pp. 7—32.

Wan Daud, Wan Mohd Nor. *The Educational Philosophy and Practice of Syed Muhammad Naquib al-Attas: An Exposition of the Original Conception of Islamization* (Kuala Lumpur; ISTAC, 1998).

_____"Dewesternization and Islamization: Their Epistemic Framework and Final Purpose," in Noritah Omar, Washima Che Dan *et al*., eds., *Critical Perspectives on Literature and Culture in the New World Order* (Newcastle: Cambridge Scholars Publishing, 2010), 2—25.