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Reviving *Kalām Jadīd* in the Modern Age: The Perpetual Relevance of al-Ghazālī and Fakhr al-Dīn al-Rāzī*

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Abstract:
The new *kalām* (*kalām jadīd* or new dialectics) intellectual movement started by al-Ghazālī and matured by Fakhr al-Dīn al-Rāzī succeeded in putting all the hellenising philosophical and natural sciences 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 a *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 westernising sciences.

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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.

– A.I Sabra[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] and 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 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

1. See p. 70 of his "The Simple Ontology of *Kalām* Atomism: An Outline," *Early Science and Medicine* 14 (2009): 68–78.
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. See Mohd Zaidi Ismail, "The Cosmos as the created book and its implications for the orientation of science," *Islam & Science* 6, no. 1 (Summer, 2008): 31–53.
5. *Fuṣṣilat* (41): 53.
6. For instance, Hans Daiber in his unpublished series of lectures entitled "Islamic Philosophy: Innovation and Mediation between Greek and

it, "the Qur'an 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, Averroes notwithstanding, the peculiarly medieval Christian and early modern problem of reconciling between reason and revelation as if the two were somehow mutually exclusive avenues to truth and knowledge that have to be brought together in some form of uneasy compromise and co-existence.[9] As far as Muslims are concerned, revelation and reason are in mutual harmony as complementary avenues to objective knowledge that springs

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Medieval European Thought," delivered to his students at ISTAC during the 2001–2002 academic year; see also his "The Qur'an 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 *Studies on the First Century of Islamic Society*, ed. G. H. A. Juynboll (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 Muhammad 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 Qur'an: God's Arguments* (London: Routledge, 2004).

9. 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 integration 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.

ultimately from the same transcendent source, as is quite evident in al-Nasafī's important epistemological preamble to his creed.[10] For them, to whom belief (*īmān*) must be grounded in knowledge (*'ilm*), the problem is merely that of specifying the precise relation between the two, which is that reason finds its role and proper place (and hence its cognitive limits) within the enveloping context of experience, including the "trans-empirical" religious or spiritual experience of divine revelation, or Transcendence.[11] Such was the position taken by the *mutakallimīn* and the *falāsifah*, both of whom "did not distinguish theology from philosophy,"[12] and neither did they distinguish it from physics or mathematics or medicine for that matter.[13] Hence, al-Attas makes clear that:

10. Syed Muhammad Naquib al-Attas, *The Oldest Known Malay Manuscript: A 16th Century Malay Translation of the* 'Aqā'id *of al-Nasafī* (Kuala Lumpur: University of Malaya Press, 1988), 1–52 passim.
11. 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).
12. Richard M. Frank, "The Science of *Kalām*," *Arabic Sciences and Philosophy* 2, no. 1 (March, 1992): 7–37 (on p. 19).
13. They realised that acceptance of atomism entails rejection of Euclidean geometry and affirmation of discontinous 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," *Isis* 56 (1965): 426–33. See also, Anton M. Heinen, "Mutakallimūn and Mathematicians: Traces of a controversy with lasting consequences," *Der Islam* 55 (1978): 57–73; and George Saliba, "The Ash'arites and the Science of the Stars," in *Religion and Culture in Medieval Islam*, eds. R. G. Hovannisian and Georges Sabbagh (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 *Avicenna and His Legacy: A Golden Age of Science*

> Islamic science and philosophy (i.e. *hikmah* 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.[14]

Their underlying conceptual point of departure is that true belief cannot be simply "willed,"[15] for it has objective cognitive content that must be known or understood in order to be properly affirmed. Moreover, that content can be demonstratable in various ways, thus, communicated, shared, debated and *rationalised*.[16] 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.[17]

The Islamic scientific endeavour

The scientific endeavour (in the sense of systematic intellectual inquiry) in Islam began with the textual standardisation of the

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and Philosophy, ed. Y. Tzvi Langermann (Turnhout, Belgium: Brepols, 2009), 307–326.

14. Syed Muhammad Naquib al-Attas, *A Commentary on the* Ḥujjat al-Siddīq *of Nūr al-Dīn al-Rānirī* (Kuala Lumpur: Ministry of Culture), 464–465; Adi Setia, "Philosophy of Science," 171.
15. 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).
16. 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.
17. Keller, "*Kalam* and Islam," 26 (italics mine).

Qur'ān, and with the systematic transmission, collection and authentication of the *Sunnah*.[18] 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 Qur'ānic recitation) which emphasised the precise relations between words and their meanings.[19] On these elaborate linguistic foundations, the science of jurisprudence (*fiqh*) was rigorously developed with its own internal analogical principles (*qiyās*) or "comparative-deductive"[20] method of juristic inference which facilitated the creative application of the normative injunctions of the Qur'ān and *Sunnah* to the particular local and temporal contexts of diverse Muslim communities. This cultivation of linguistic definition[21] 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

18. M. M. Aʿẓamī, *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).
19. G. Bohas, Jean-Patrick Guillaume and D. E. Kouloughli, *The Arabic Linguistic Tradition* (London: Routledge, 1990).
20. Hans Daiber's term, unpublished academic course lectures delivered at ISTAC, 2001–2002.
21. 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).

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 borders of the Arabian peninsula.

The Muslims were most attracted to Greek philosophical, logical, mathematical, scientific and ethical principles, and studied them very thoroughly, critically and *self-consciously*, indeed.[22] By the time of Caliph al-Maʾmūn (10th century), a *cross-cultural*[23] intellectual movement for translating these Greek works into Arabic was in full swing with the active support of the state and rich 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 critical, 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 empire and by the intrinsic intellectual allure and challenge of the new, "foreign" system of knowledge.[24] 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[25]

22. George Saliba, *Islamic Science and the Making of the European Renaissance* (Cambridge, MA: MIT Press, 2007), 1–72 passim.
23. Ibid., 1–130 passim. See also the interesting discussion in Roshdi Rashed, "Greek into Arabic: Transmission and Translation," in *Arabic Theology, Arabic Philosophy, from the Many to the One: Essays in Celebration of Richard M. Frank*, ed. James E. Montgomery (Leuven, Belgium: Peeters, 2006), 157–198.
24. Ibid.; see also Dimitri Gutas, *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Baghdad and Early ʿAbbasid* (London: Routledge, 1998).
25. 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).

as well as by intra-Muslim political, theological and juristic controversies which resulted in the rise of distinct, opposing doctrinal sects (*firaq*),[26] and schools of thought (*madhāhib*) in theological, philosophical, scientific and legal matters.[27]

Indeed, there were heated controversies amongst these opposing schools of thought as to the extent to which Greek philosophico-scientific thought was or was not in accord with the worldview of Islam projected by the Qurʾān.[28] On the one hand,stood the Muslim philosophers (*falāsifah/ḥukamāʾ*),for example, al-Kindī (d. 866), al-Fārābī (d. 950) and Ibn Sīnā (d. 1037) who 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),[29] al-Ghazālī (d. 1111) and Fakhr al-Dīn al-Rāzī (d. 1209) 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 Ḥanbalites, Muʿtazilites and

26. Abd al-Qāhir ibn Ṭāhir ibn Muhammad Abī Manṣūr al-Baghdādī (1037/429), *al-Farq bayn al-Firaq* (Beirut: Dār al-Maʿārif, 2001).
27. 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: Brill, 1972); and Josef van Ess, "ʿUmar II and His Epistle against the Qadariyya," *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).
28. 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."
29. 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.

Shīʿites.[30] 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*[31] 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 couldnot 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-Rāzī.[32]

Ironically, even surprisingly, the perceived intellectual threat of Hellenistic thought, particularly Aristotelianism in its Neoplatonic garb,[33] was in the end overcome by a gradual process of a very self-conscious cooption on the part of post-Ghazālīan *mutakallimūn* in which 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

30. 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).

31. *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).

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

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

much have the two been fused together.[34] It may be surmised that the eventual triumph of Ashʿarism (including Māturīdism and Ṭahāwism, 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[35] which "gave both *naql* and *ʿaql* their due, and took a middle course between the doctrines of the opposing sects."[36]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 views and other schools within what may be referred to as a hierarchic onto-epistemic "scale of truth-reality"in which *Kalām* theology was harmonised with, or rather, integrated into, *Ṣūfi* metaphysics and ontology.[37]

Not only were *kalām* and *falsafah* fused together in this long process of intellectual appropriation and naturalisation

34. 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," *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," *Arabic Sciences and Philosophy* 15 (2005): 141–179.

35 On "synthetic" theological framework, see Ceric, *Roots*.

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

37. Al-Attas, *Prolegomena*, 177–332 passim; idem, *A Commentary*; 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 fi Taḥqiq Madhhab al-Ṣūfiyyah wa al-Mutakallimīn wa al-Ḥukamā' al-Mutaqaddimīn*, trans. Nicholas Heer as *The Precious Pearl* (Albany, NY: SUNY, 1979). See also the nuanced, comprehensive discussions by Ayman Shihadeh in *Sufism and Theology*, ed. Ayman Shihadeh (Edinburgh: Edinburgh University Press, 2007), 1–14; and Toby Mayer, "Theology and Sufism," in *The Cambridge Companion to Classical Islamic Theology*, ed. Tim Winter (Cambridge: Cambridge University Press, 2008), 258–287.

(or even "Islamisation" in the Attasian sense of the term),[38] but that all the four main mutually autonomous intellectual systems, namely, *kalām*, *falsafa*h, *fiqh* and *usul al-fiqh*[39] and *taṣawwuf*[40] were fused together into a single, enlarged more encompassing and self-consciously integrative Orthodoxy, which thereby, thoroughly *embedded* all the intellectual or discursive sciences (*ʿaqliyyat*) into the firm ambit of divine revelation and prophetic tradition (*naqliyyāt/samʿiyyāt*). In other words, the intellectual was fused with, or rather into the religious, so much so that the intellectual man and the religious man was one and the same man or woman;[41] 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.

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 through subsequent

38. On the definition of "Islamisation," see Syed Muhammad Naquib al-Attas, *Islam and Secularism* (Kuala Lumpur: ISTAC, 1993), 44–45.
39. 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 Kalam and Usul 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 *The Cambridge Companion to Classical Islamic Theology*, ed. Tim Winter (Cambridge: Cambridge University Press, 2008), 237–257.
40. 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.
41. As in the remarkable case of Ibn al-Nafīs; see Nahyan Fancy, "The Virtuous Son," 219–248. See also Gerhard Endress, "Reading Avicenna in the *Madrasa*," in *Arabic Theology, Arabic Philosophy, from the Many to the One: Essays in Celebration of Richard M. Frank*, ed. James E. Montgomery (Leuven, Belgium: Peeters, 2006), 371–424.

centuries, actually did much to hasten this process of critical, self-conscious synthesis and naturalisation. 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 and logical terms, a polemic which ended with the former taking over as its own much of the ground covered by the latter.[42] By the time al-Ghazālī died, 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,[43] 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."[44] 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."[45]

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

42. Al-Ghazālī, *The Incoherence of the Philosophers*, trans. Michael Marmura (Provo, Utah: Brigham Young University Press, 2000), xv–xvi.
43. Nicholas Rescher, *The Development of Arabic Logic* (Pittsburgh: University of Pittsburgh Press, 1964), 51–54, and 57ff.
44. Earl Edgar Elder, trans., *A Commentary on the Creed of Islam: Sa'd al-Dīn al-Taftāzānī on the Creed of Najm al-Dīn al-Nasafī* (New York: Columbia University Press, 1950), xvi.
45. Ibn Khaldūn, *Muqaddimah*, 3: 43.

ḥikmah ishrāqiyyah (which can be read as metaphysical Sufism/mysticism) at the hands of al-Suhrawardī and his successors,[46] and in the form of *manṭiq* and philosophical *kalām* at the hands of al-Rāzī and his sucessors from al-Āmidī[47] to al-Taftāzānī, as well as, al-Ījī to al-Jurjānī.[48] Indeed, there would always be influential detractors, for example, Ibn Taymiyyah and al-Suyūṭī,[49] or scholars of the calibre of, Tāj al-Dīn al-Subkī (d. 1370/771), for instance, who voiced their misgivings over some of *kalām jadīd*'s perceived excesses,[50] but for all intents and purposes, *falsafah* in the guise of *kalām*, and *manṭiq* as a conceptual tool became thoroughly Islamised and firmly entrenched in mainstream traditional Islamic education

46. 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, *Ismā'il 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).
47. Syamsuddin Arif, "Al-Āmidī's Reception of Ibn Sīnā: Reading *al-Nūr al-Bāhir fi al-Ḥikam al-Zawāhir*," in *Avicenna and His Legacy: A Golden Age of Science and Philosophy*, ed. Y. Tzvi Langermann (Turnhout, Belgium: Brepols, 2009), 205–217.
48. Shlomo Pines, "Some Problems of Islamic Philosophy," *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.
49. Jalāl al-Dīn al-Suyūṭī *Ṣawn al-Manṭiq wa al-Kalām ʿan Fann al-Manṭiq wa al-Kalām*, bound in one volume with his abridgement of Taqī al-Dīn ibn Taymiyyah, *Naṣīḥat Ahl al-Īmān fi Radd ʿalā Manṭiq al-Yūnān*, ed. ʿAlī Sāmī al-Nashshār (Cairo, 1947).
50. Tāj al-Dīn al-Subkī, *Muʿid al-Niʿam*, 79–80, cited in Keller "*Kalam* and Islam," 22 and 27n.2 (italics mine).

from the Maghrib[51] to the Malay Archipelago.[52] It is against this general intellectual historical background that one must situate and evaluate the significance of al-Ghazālī and al-Rāzī and their works.

The Ghazālian-Fakhrurāzian investigative (*tabayyunī*) approach and its historical impact

The works of al-Ghazālī and al-Rāzī mark a historic turning point in the long "movement of thought"[53] in the Sunni *kalām* engagement with Hellenistic philosophy and science from al-Ashʿarī (d. 935), al-Māturīdī (d. 944), al-Bāqillānī (d. 1013), al-Juwaynī (d. 1085) and al-Rāzī (d. 1206), al-Nasafī (ca. d. 1142), al-Shahrastānī (d. 1153) to al-Āmidī (d. 1233), al-Bayḍāwī (d. 1286), al-Ījī (d. 1355), al-Taftāzānī (1390) and al-Jurjānī (d. 1413). 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*).

51. 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. 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).
52. For the case of the Malay Archipelago, see, for instance, al-Attas, *The Oldest Known*, 1–52 passim.
53. 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 *Arabic Theology, Arabic Philosophy, from the Many to the One: Essays in Celebration of Richard M. Frank*, ed. James E. Montgomery (Leuven, Belgium: Peeters, 2006), 199–272.

As Sabra puts 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,"[54] 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.[55]

Sabra applies this characterisation to both Muʿtazilite and Ashʿarite *kalām*,[56] and in this regard, finds ready support in R. M. Frank,[57] and in the important recent, as yet unpublished doctoral dissertation of Muhammad Afifi al-Akiti.[58] 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 Sunnī who was an Ashʿarī theologian as well as a Shāfiʿī jurist. These scholars included Fakhr

54. Sabra, "Science and Philosophy," 11.
55. Ibid., p. 23n.24.
56. See also Sabra, "The Simple Ontology," 68–78; and idem, "*Kalām* Atomism," 199–272.
57. Idem, "Science and Philosophy," 11; R. M. Frank, "The Science of Kalām," *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.
58. 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 *Avicenna and His Legacy: A Golden Age of Science and Philosophy*, ed. Y. Tzvi Langermann (Turnhout, Belgium: Brepols, 2009), 51–100.

> 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 doorsto a restricted audience, they were able to publish their *ilāhiyyāt* and *falsafī* works in the full light of day.[59]

To quote 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 Asharite school, men such as Fakhr al-Dīn al-Rāzī (d. 606/1209–10)—a *doctor subtilis* 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).[60]

59. Al-Akiti, "The Good," 94–95 (addition in [] mine).
60. Ibid., 91.

The investigative (*tabayyunī*)[61] nature of dialectical theology

"Investigation" or "research" is the key word in *al-Ḥaththʿalā al-Baḥth* (*The Encouragement to Investigation*), the title given by the great al-Ashʿarī himself to his work with the purpose of encouraging the study of *kalām* or rationalistic theology.[62] 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 inconsistency 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 and apologetic. As Langermann puts it in summarising al-Akiti's study:

> 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

61. 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.

62. R. M. Frank, trans. & ed., "Al-Ashʿarī's *Kitāb al-Ḥaththʿalā al-Baḥth*," *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."

> 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.[63]

Similarly, 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 intellectual life a work very critical of Avicennan philosophy, somewhat in the spirit of Abū al-Barakāt's *Kitāb al-Muʿtabar*, or even as some have claimed, in the spirit of al-Ghazālī's *Tahāfut*.[64] It cannot be said that he started out as a straightforward 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*.

Although the century after al-Ghazālī witnessed some notable *mutakallimūn* such as al-Nasafī and al-Shahrastānī,[65]

63. Langermann, "Foreword," in *Avicenna and His Legacy: A Golden Age of Science and Philosophy*, ed. Y. Tzvi Langermann (Turnhout, Belgium: Brepols, 2009), viii–ix.
64. 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. 270n.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.
65. 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," *Majallat Maʿhad al-Makhṭūṭaṭ al-ʿArabiyyah* 25 (1979): 195–218.

al-Rāzī is still clearly the first post-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 *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 into his great commentary on the Qur'ān, *al-Tafsīr al-Kabīr* or *Mafātīḥ al-Ghayb*. He is noted by Dhanani as the first *mutakallim* to discuss space and time in a comprehensive manner,[66] and probably the first also to undertake a critical comparative study of atomism and hylomorphism of any comprehensive scope and intensity of treatment. This versatility is no doubt due in large part to his own intimate, first-hand knowledge of the philosophical sciences such as logic, physics, medicine, mathematics and astronomy, in addition to his complete mastery of the traditional Islamic sciences.[67] Hence, it is hardly surprising that "here Fakhr al-Dīn al-Rāzī was to become al-Ghazāli's most influential continuator,"[68] and perhaps 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*."[69] 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, hence, his appropriation of some key Avicennan

66. 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, 6–7.
67. Zarkān, *Fakhr al-Dīn al-Rāzī*, 37–55.
68. Gerhard Endress, "The Defense of Reason: The Plea for Philosophy in the Religious Community," *ZGAIW* 6 (1990): 1–49 (on p. 37).
69. Michael Marmura, "Avicenna and the *Kalām*," *ZGAIW* 6 (1990): 173–206 (on p. 206).

ideas to flesh out his basically Ashʿarite framework.[70] As al-Ghazālī's "most influential continuator," and most probably also "the most outstanding Sunnite figure"[71] after him, al-Rāzī took up where the former had left, and intensified the debate with Ibn Sīnā, 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.[72]

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.[73] So, it seems that historically the "exciting intellectual combat"[74] 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[75] 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

70. R. M. Frank's misgivings notwithstanding.
71. 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.
72. 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).
73. Ibn Khaldūn, *Muqaddimah*, 3: 43.
74. Hourani, "Dialogue," 183.
75. Interestingly Hourani ("Dialogue," p. 191) judged Ibn Rushd argumentative performance to be "disappointing," as had van den Bergh (*Averroes*, p. 20, and p. 23 n.1).

they, as responsible thinking individuals, be self-conscious and self-critical about their beliefs, al-Ghazālī's (somewhat ambivalent?) *Iljām al-ʿAwāmm* notwithstanding.[76]

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,[77] and by the formulators of Shīʿī *kalām* in the Persian East, such as al-Ṭūsī (d. 1274),[78] and the Christian scholastics of the late medieval Latin West.[79] 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[80] was also felt by medieval Jewish thinkers[81] and the thinkers, philosophers and scientists of the

76. Al-Ghazālī, *Iljām al-ʿAwāmm ʿan ʿIlm al-Kalām*, trans. Abdullah bin Hamid Ali, *A Return to Purity of Faith* (Philadelphia: Lamppost, 2008).
77. See, for instance, Hoover, "Perpetual Creativity," 287–329.
78. 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*.
79. Pines, "Some Problems," p. 68 n. 2; cf. Hans Daiber, unpublished ISTAC lectures, parts 5 and 6 with copious invaluable references.
80. ʿAḍud al-Dīn ʿAbd al-Raḥmān ibn Aḥmad al-Ījī, *Kitāb al-Mawāqif fi 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 fi ʿIlm al-Kalām* (Beirut: Dār al-Jīl, 1997).
81. 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 *Avicenna and His Legacy: A Golden Age of Science and Philosophy*, ed. Y. Tzvi Langermann (Turnhout, Belgium: Brepols, 2009), 338–339.

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."[82] 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.[83] Even modern-day Christian creationist theologians and philosophers have 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 and mathematical terms.[84]

Kalām jadīd and contemporary concerns

In the light of the foregoing overview of the intellectual historical impact and relevance of the new *kalām*, the whole point of the first part of this discourse is dealt with, at least

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

83. 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.

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

insofar as it concerns thinking Muslims who are concerned about how to intelligently engage the all-enveloping secular modernity of our day. Muslim progress in appreciating their rich intellectual heritage will not be boosted by the prevailing negative attitude, implicit or explicit, amongst many Muslim academicians, educationists and intellectuals about the contemporary relevance, or lack thereof, of the seemingly "obtruse" and "error-prone" traditional Islamic philosophies and sciences of the long bygone and forgotten past. Quite on the contrary, 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.[85] In short, if Muslims fail to appreciate the achievement of their past history, they thereby fail to comprehend the predicament of their present moment, and in turn fail to plan for their future revival as a positive civilisational force for the common good in the postmodern, post-industrial and post-development world. Intelligent, thinking, reflective, self-conscious Muslims should read their rich classical past as a *beacon for the present toward the future*, hence, the past has not "passed" away into oblivion but is always perpetually present as a living tradition from which insights (*tabṣirah*) and lessons (*ʿibrah*) can always be drawn for overcoming the challenges of the present age, or of any future ages for that matter.

It has been said 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

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

modern and perennial.[86] A case in point is al-Ghazālī's overriding concern in the first book of his magnum opus *Iḥyā' 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—a concern which resonates very well with current debates in both East and West about the form, substance and objectives of modern religious and secular education.[87] The revival of his 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 "powerful and elaborate enough" to replace a modern, exploitative Western science and civilisation that is now well into its twilight phase.[88]

But what about al-Ghazālī's *Iljām al-ʿAwāmm ʿan ʿIlm al-Kalām*, which seems to bar Muslims in general from indulging in 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 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

86. 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*.

87. 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).

88. 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.

something like a disembodied mega-machine that has long cut itself loose from its original masters—a kind of turbo-charged techno-Frankenstein—an age when the West and the East are intermingling everywhere, strange knowledge 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. In an age when the laity are compelled in one way or another, directly or indirectly, to be among the educated 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 do some good to his or her mind and soul.

Al-Ghazālī and the Islamisation of *falsafah*

Hellenising *falsafah* was 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 *fuqahāʾ* and *muḥaddithīn*. But when it became increasingly clear to orthodoxy that the language used by *falsafah* to describe the relation between God and the world was compromising the foundational Qurʾānic doctrines of divine omnipotence and

omniscience and of 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, as it were, and come to a head on, close engagement with the truth-claims of *falsafah*, especially when some of these truth-claims were seen to pose a direct challenge to the Sunni theological orthodoxy established by the Ashʿarī-Māturīdī-Ṭahawī school.

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 it 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. Thus, the Ghazālīan-Fakhrurāzian encounter with *falsafah* can 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 generated from it.

In short, Ghazālīan initiated *kalām jadīd* was a long-term theologico-philosophico-scientific research programme that has served its purpose wonderfully well in the classical age of Islam. There is a real need now for Muslim '*ulamā*', scholars, intellectuals, thinkers and scientists of today's age to learn afresh from that rich intellectual historical experience and revive that research programme in contemporary terms in close, critical engagement with all aspects of Western science and philosophy.[89]

89. Adi Setia, "The Theologico-Scientific Research Program of the Mutakallimūn: Intellectual Historical Context and Contemporary Con-

Toward a "*Kalām* of the Age" (*kalām al-ʿaṣr*)

The intellectual challenge faced and overcome 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 in the modern mainstream academia, but with a much more draconian objective, namely, a thoroughgoing nihilistic disenchantment of the world and the whole of existence. Moreover, young, intelligent Muslims in their countless millions imbue this secularising nihilism masquerading as value-free education and knowledge quite oblivious to its negative conceptual and actual impact on their belief and value system as Muslims, and on their communities and societies, if insofar as being "Muslim" to them denote any substantial intellectual and practical content different and distinct from being "non-Muslim."

Hence, the relevance and lesson of the Ghazālīan-Fakhrurāzian encounter with *falsafah* to Muslims in the present age may be encapsulated into the"*Kalām* of the Age" initiative (*kalām al-ʿaṣr* 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 and philosophies and their impact on our religio-cultural traditions and values and our communities. The author's 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, 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, with

cerns with Special Reference to Fakhr al-Dīn al-Rāzī," *Islam & Science* 3, no. 2 (Winter 2005): 127–151.

which many major Western thinkers, authors and activists are becoming increasingly disillusioned as evidenced in their current conceptual and practical experiments with diverse strands of postmodernism and various "post-isms."[90] The

90. 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," *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," *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 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.

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 these sciences and philosophies and aspects thereof, may be seen to be irrelevant or even discardable altogether, while others modified, restructured and redirected to serve

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, 198); 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," *Environmental Practice* 8, no. 3 (September 2006).

the higher axiological purposes of the divine Law (*maqāṣid al-sharīʿah*),[91] i.e., to serve the true purpose of our lives as Muslims in this temporal world, which to us is but the seedbed of the next world of eternal life (*al-dunyā mazraʿat al-ākhirah*).

Let not our present preoccupation with the current socio-political upheavals in the Muslim world,[92] or intra-Muslim credal controversies, or even the commendable inter-religious "Common Word" initiative[93] 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 systemically imparted into the minds and hearts of both Muslim and non-Muslim students and scholars in Western and Western-type universities (including those calling 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 on that common enemy, for instance. 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."[94] 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

91. 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.
92. Ali A. Allawi, *The Crisis of Islamic Civilization* (New Haven: Yale University Press, 2009).
93. See the official website, http://www.acommonword.com/.
94. Keller, "*Kalam* and Islam," 25.

through Tradition in Contemporary Muslim Intellectual Discourse: The Neo-Ghazalian, Attasian Perspective."[95]

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

> . . . attacks today on religion by scientism should be met by Muslims as al-Ashʿarī and Maturidi met the Muʿtazilites and Jahmites in their times: with a dialectic critique of the premises and conclusions thoroughly grounded in their own terms.[96]

In light of this consideration, understanding the Ghazālīan *Tahāfut* and the Fakhrurāzian *Maṭālib* and the creative re-articulation of this understanding in contemporary philosophical and scientific terms, should be rendered accessible to all who are studying, teaching or practising the Western sciences—who, by the very fact of their engagement with the modern sciences, cease to be *ʿawāmm* but become from among the *khawāṣṣ*. The real intellectual battleground for Muslims in the modern age is the neo-Dahrism of the western

95. 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.

96. Keller, "*Kalam* and Islam," 26. 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).

sciences which they all gleefully imbibe, including those students who might right now be sojourning at the feet of the great living *shuyūkh* of our time in Malaysia, Indonesia, Patani, Syria, Jordan, Egypt, Yemen, Morocco, Mauritania, Pakistan and India, nourishing themselves from the wellsprings of tradition. By "gleefully," it refers to the gleeful innocence or naivete of those who do not have a clue as to what they are actually imbibing as "education" or "knowledge" or "skills" in the modern universities. Indeed, "gleefully" is an apt description because, by enrolling in the modern academia, they are rather unlikely to be able to avoid becoming unwitting intellectual victims of that grand, elaborate and systemic charade called modern science, technology and economics, the *funūn min al-ẓunūn* (multifarious sciences of conjectures)[97] of the modern age.

The great task of these students and scholars is to see through the 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, or shall they go on allowing their own knowledge of tradition to be intellectually impotent and silent 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. None of these are new, for even the conscientious

97. 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 of conjectures," in which case then al-Ghazālī is rebuking those so enamoured 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 Al-Ghazālī, *The Incoherence*, 1–2.

thinkers of the West are making similar forceful indictment of their own elaborate intellectual edifice (*wa shahidū ʿalā anfusihim*, i.e., "and they bear witness against their own selves")[98] such as Martin Heidegger,[99] Jacques Ellul,[100] Karl Polanyi,[101] E. F. Schumacher,[102] Serge Latouche,[103] Michael Sahlins,[104] James Howard Kunstler,[105] 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.*"[106] Without a rigorous *Kalām* of the Age, Muslims today cannot be too sure that they are in fact not collaborating in that "*sacrifice of the future for the present.*"

Knowing the tradition alone is not enough, for the carriers of this 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 means of a Dialectics of the Age (*kalām al-ʿaṣr*),

98. Allusion to the verse "the life of the world deceived them and so they testified against themselves that they were atheistic" (*wa gharrathum al-ḥayātu al-dunyā wa shahidū ʿalā anfusihim annahum kānū kāfirīn*) (Cleary's translation) in *al-Anʿām* (6): 130.
99. Martin Heidegger, "The Question Concerning Technology," in *Basic Writings*, ed. David Krell (New York: HarperCollins Publishers, 1993).
100. 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."
101. Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, 2001).
102. E. F. Schumacher, *Small is Beautiful: Economics as if People Mattered* (New York: Harper Collins, 2010).
103. Latouche, *The Westernization of the World*; idem, *In the Wake of the Affluent Society: An Exploration of Post-Development* (London: Zed Books, 1993).
104. Marshall Sahlins, *Stone Age Economics* (Piscataway, New Jersey: Aldine Transaction, 1972); idem, *The Western Illusion of Human Nature* (Chicago: Prickly Paradigm Press, 2008).
105. Kunstler, *The Long Emergency: Surviving the Coverging Catastrophes of the Twenty-first Century* (New York: Grove/Atlantic, 2005).
106. As cited in ibid., 185 (italics mine).

and thereby, avoid falling into the pitfalls of nihilistic neo-Dahrism masquerading as evolution, progress, historicism, growth, development, change, globalisation, science and technology. This is called neo-Dahrism because it harks back at the Dahrism and the *Dahriyyīn*[107] of old, so that we may be shocked out of our slumber to real constructive, proactive and anticipative intellectual and educational action, and hence, social action, and thereby, *go way beyond the 9/11 agenda* that has been imposed on us, directly or indirectly, for the real ongoing challenge is at the core intellectual, even if there happens in the near future a complete political peace between Islam and the West.

The whole problem with neo-Dahrism (*al-dahriyyah al-jadīdah*) is that it does not ostensibly present itself as heresy, and thus, are not largely seen 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*, and failing to do so may not necessarily render us formal neo-Dahris (self-conscious believers in secular progress). Nevertheless, we will be neo-Dahris in practice because the neo-Dahrist disciplines imbibed in the universities present themselves as value-neutral objective data, facts 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.

107. 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.

Therefore, it is of the outmost imperative that we not only master completely the Worldview of Islam[108] but also master completely the various specific civilisational contexts in which it is to be made *operational*, for the Worldview of Islam must not only inform, it must also transform. 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," has to be revived and implemented which, as al-Attas incisively observes, is the challenge,

> . . . 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 masquerades 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 civilization 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 civilization—knowledge as presented and conveyed

108. 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*.

> 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*.[109]

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 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 contributes to the universal revival of a heart-felt consciousness of the Transcendent in human life and society.

Kalām al-ʿaṣr, worldview of Islam and the comprehensive critical mapping of the modern sciences

In the present context of freeing oneself from the intellectual and cultural hegemony of the West, *Islamisation entails Dewesternisation*. As a matter of fact, al-Attas is saying to the effect that dewesternisation is a condition of Islamisation:

> In appraising the present situation with regard to the formulation and dissemination of knowledge in the Muslim world, we must see that 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

109. 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.

> 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 *interpretation 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, 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 Islām.[110]

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

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

participants engage creatively and closely with both tradition and modernity in a manner that enable them to bring the tradition to bear critically and constructively on the sciences of the modern academia, and thereby, differentiating between objective truths and subjective fictions,[111] 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*[112] 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 historical and cultural moment condition the very nature of questions it can ask—or answer."[113]

Conceptually, the Worldview of Islam Course (WIC) or Worldview of Islam Intellectual Series (WISE)[114] shall

111. 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).
112. 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.
113. Keller, "*Kalam* and Islam," 25.
114. Title and acronym proposed by Dr. Mohd Zaidi Ismail of IKIM, and accepted by the management of the course.

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 for 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. The two levels are conceptually connected but with different immediate pragmatic objectives.

The objective of the first level or WIC 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 such a way that they can 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, 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 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 this critical mapping, it is hoped that students will choose disciplines and decide on career paths that are 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, one may opt for green chemistry[115] rather than conventional chemistry, natural medicine[116] or naturopathy over conventional allopathic medicine, cognitive psychology[117] over behaviourial psychology, ecological and steady-state economics[118] over neoliberal capitalism, organic or permaculture[119] over chemical intensive agriculture, biomimicry[120] over biotechnology,[121] appropriate technology[122] over high technology. Such choices are arguably more in accord with the Islamic axiological principles of non-harmful (*lā ḍarara wa lā ḍirara*), beneficial knowledge (*'ilm nāfi'*) and mercy (*raḥmah*). Along the way, one is also to be guided by means

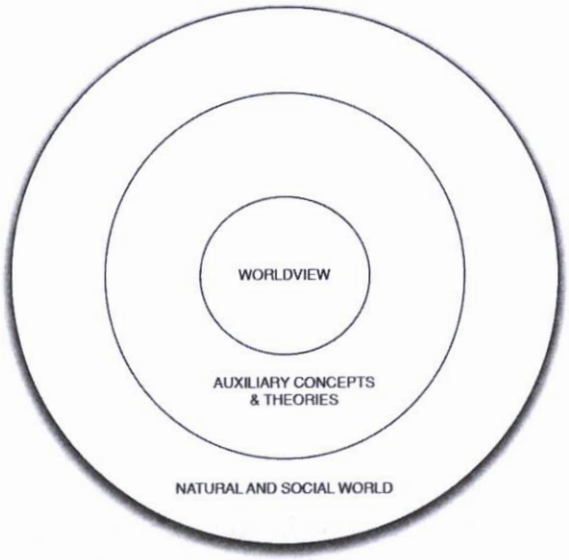
115. Including related areas such as green engineering and green technology; see, for instance, Paul T. Anastas and John C. Warner, *Green Chemistry: Theory and Practice* (Oxford: Oxford University Press, 1998).
116. Leon Chaitow et al., *Naturopathic Physical Medicine: Theory and Practice for Manual Therapists and Naturopaths* (Philadelphia: Elsevier, 2008).
117. Cognitive psychology is on the whole arguably more in accord with traditional Islamic faculty psychology; see Syed Muhammad Naquib 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).
118. Herman Daly, *Steady-State Economics*, 2d edition (Washington, DC.: Island Press, 1991).
119. Bill C. Mollison, *Permaculture: A Designer's Manual* (Sisters Creek, Tasmania: Tagari Publications, 1988).
120. Janine M. Benyus, *Biomimicry: Innovation Inspired by Nature* (New York: William Morrow, 1997).
121. On the dangers of biotechnology, see Brian Tokar, ed., *Redesigning Life?: The Worldwide Challenge to Genetic Engineering* (London: Zed Books, 2001).
122. Barrett Hazeltine and Christopher Bull, eds., *Field Guide to Appropriate Technology* (New York: Academic Press, 2003).

of this critical mapping toward unravelling the philosophical and metaphysical assumptions underpinning those disciplines and the often hidden, murky parochial background of their original development in Western, Enlightenment socio-intellectual history.

The objective of the second level or WIC Level II is to help working professionals, researchers and policy-makers 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 may opt for the Bohmian ontological interpretation of quantum mechanics over the mainstream Copenhagen instrumentalist interpretation.[123] 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,[124] thereby creating what can be termed as an *ecologics of economics*. 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 opting for the class to study, as an example, actual living frogs by a pond embedded in the wild, rather than dead, dissected frogs pinned to a lab bench, which is thoroughly disembedded from any ecosystemic contexts of the natural world.[125]

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

123. 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).
124. Herman E. Daly and Joshua Farley, *Ecological Economics: Principles And Applications* (Washington, D.C.: Island Press, 2004).
125. Erin Radelfinger, "Dissecting Dissection: A Resource Handbook for High School Biology Educators," accessible online at http://www.scoe.org/files/dissection.pdf.



The inner circle represents the unchanging, permanent, revealed metaphysical core expressed as the "Worldview of Islam" (*ruʾyat al-Islām li al-wujūd*).[126] 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-ṭabīʿah*), 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 embedded in the larger natural world. The challenge of Islamic scientific creativity presently lies squarely in the middle circle and consists in the intellectual work of articulating objective

126. Al-Attas, *Prolegomena*, 2.

conceptual and theoretical frameworks for bringing the worldview of tradition to bear evaluatively on our engagement with and understanding of the natural and cultural world, especially the cultural world which is now 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.[127]

By "objective" is meant that the dialectics is to be 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), by reference to the very same physical and social world 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 and incorporating certain positive elements of Western and Eastern sciences and insights into both their intellectual and practical work.[128] 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 as follows suffices.

127. 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.

128. To underline this important point, 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 in Kuang, Selangor, Malaysia. Most of the nearly twenty participants were Muslims but the three non-Muslims participants also found the course to be very useful and beneficial to them. A review of the course is on the website: http://murujan.com/2012/03/19/permaculture-design-course-review/.

The Qurʾān says that the Prophet was sent as a mercy to all the worlds (*raḥmatan lil-ʿālamīn*). 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-ṭabīʿata*) is constrained by the prophetic ethics of cosmic mercy. This means that much of what we do or take for granted in contemporary science and technology has to be seriously and systemically rethought since it is obviously unrestrained by the ethics of mercy. Modern science and its technological offshoots are, in many diverse, complex ways, very aggressive toward nature and, by extension, toward humankind as part of nature. 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 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 Muslim scientists. For them, the Qurʾānic ethics of universal, cosmic mercy shows the way 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 will facilitate the way toward realising that science in practice. The following are some specific examples by way of illustration.

Vivisection, meaning "to cut alive" hence, the preferred term, "animal testing," in modern academia, is the way modern, business-driven medicine tortures live animals to test drugs in order to rid humanity of their ever-lengthening list

of old and new diseases. As a method of medical research, it is relatively new (only a hundred or so years old) and peculiar to modern Western medical culture. Quite apart from the extrinsic question of ethics in respect thereof, 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 and physiological similarity between laboratory test animals and human beings justifying extrapolations of clinical results from one to the other.[129] 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 and ethical integrity to vivisection, including valid alternatives critically-sourced from presently marginalised Western (e.g., homeopathy) and eastern medical traditions (e.g., traditional Chinese medicine) which could be incorporated into a well-articulated Islamic Medicine Research Program. 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.[130]

129. 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).

130. In Malaysia, we are in the process of establishing the Hakim Islamic Medicine Institute & Academy (HIMIA) in order to systemically revive the study, teaching and practice of Islamic Medicine. For further deliberation on this, see Adi Setia, "Some Current Critical Rethinkings in Modern Medicine: Outlining an Autonomous Islamic Medicine Research Program," paper presented at the HAKIM-IYC Islamic Medicine Colloquium on Prophetic Medicine in the Light of Eastern Medicine, Kuala Lumpur, Malaysia, 6 March 2010.

Modern agriculture, to take another case in point, is overly chemical-intensive with widespread use of pesticides, herbicides, synthetic nitrogen fertilisers and others, which poison the soil, kill rural wildlife, even toxify the harvests and disrupt the health of farmers. 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. 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 (*'ilm al-filāḥah*)[131] show. It is not a mere business, as the modern corruption of the original word into "agribusiness" would have it—most exemplified perhaps in the case of Monsanto[132]—which imposes the face-less corporate tyranny of impersonal profit-maximisation on once self-respectful, independent farmers and indigenous peoples, reducing them to wage-and debt-slaves, squatters on the very lands they once have had native customary rights to but presently wrested from them by faceless, soulless corporations. Ironically, the agricultural food production, which once unquestionably served the welfare of humankind, should now, in the hands of big agrochemical companies, be seen to be working toward destroying the very ecological basis of that welfare. In order

131. Abū Zakariyyā Yaḥyā ibn Muḥammad ibn Aḥmad ibn Al-Awwām Al-Ishbilī (ca. 12th century), *Kitāb al-Filāḥah* as described in Toufic Fahd, "Botany and Agriculture," in Regis Morelon and Roshdi Rashed, *Encyclopedia of the History of Arabic Science* (London: Routledge, 1996).

132. For the case against Monsanto, see Peter Pringle, *From 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).

to return agricultural practice onto the ethical path of mercy 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 develop new ones by, for instance, drawing on the thousand years' accumulated experience of a very successful Islamic agricultural tradition—the original, truly "green" revolution in the history of mankind.[133] In this respect, the "greening the desert" initiative by Geoff Lawton and his partners in Jordan is a great inspiration.[134]

Ultimately, all such initiatives toward a constructive *counter-academia* will have to be systemically-consolidated under an academic and vocational educational structure quite independent of the mainstream educational establishment. The underlying idea is that we want our students and graduates not only to understand the Islamic tradition and the Worldview of Islam, but are also able to have careers and make a decent, respectable and meaningful livelihood for the common good by using their knowledge and training to operationalise the Worldview of Islam in the public, socio-economic domain within the local communities in which they are embedded.[135]

133. To realise this civilisational vision, links are being forged with the Cambridge-based Golden Web Foundation, and the Permaculture Research Institute of Australia to set up Fitrah Organics and working closely with University of Malaya Environmental Secretariat (UMCares). Plans are underway to send suitable people for formal training in permaculture and set up sustainable agricultural communities in Malaysia.

134. http://permaculture.org.au/project_profiles/middle_east/jordan_valley_permaculture_project.htm.

135. Mention should here be made of the HAKIM (see http://www.hakim.org.my/) initiative in organising the public educational Worldview of Islam Intellectual Series (WISE) with various partners, and the Muʿamalah Research Unit (MRU) at the International Islamic University Malaysia (IIUM). While WISE works toward fleshing out in conceptual and pragmatic terms the operational implications of the Worldview of Islam

The question of scientific objectivity (i.e., what should count as objectively-verified knowledge and the research methods by which this objectivity is ascertained) 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 *taʿdīb* (education as discipline of mind, soul and body).[136] In other words, cognitive evaluation and ethical evaluation are both intrinsic to the scientific enterprise in Islam, as is quite evident in Ibn Haytham's much studied scientific methodology which involved a thoroughgoing "kalāmic" dialectics with Greek physical and optical theories.[137] 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 the Islamic position, thus, allowing room for mutual constructive engagement on this important meta-scientific issue.

by formulating and offering curricula, syllabi and courses for reviving the arts and sciences of responsible 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," and thereby, put into operation the Islamic Gift Economy (IGE, *al-iqtiṣād al-infāqī*) or Common-Good Economics. For further explanation on the Islamic Gift Economy, see Adi Setia, "*Waqf* and the Revival of the Islamic Gift Economy," *Awqaf Insights* 3 (2010): 14–15; idem, "*Muʿamala* and the Revival of the Islamic Gift Economy," *Islam & Science* (Summer 2011), 67–88; idem, "Reviving an Economics for the Common Good: The Science of Earning in al-Shaybani, al-Ghazali and al-Dimashqi," *Islam & Science* (Winter 2011), 177–184.

136. Al-Attas, *The Concept of Education*; see also the elaborate discussion in Wan Mohd Nor, *The Educational Philosophy*.

137. 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).

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, consider the twin Qurā'nic 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 *Nature, Science, New Scientist* and *Scientific American*. It will be irresponsible of them to take these reports at face value without undertaking their own investigation (*tabayyun*) into the often hidden, diverse underlying contexts of these reports and ascertaining their empirical adequacy (*burhān*) and *epistemic autonomy* (*al-istiqlāl al-ʿilmī*) from powerful forces geared less toward global scientific enlightenment than narrow political economic self-enrichment. 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 incorporate it into an integrative Islamic Science Research Program (ISRP). For instance, in the case of chemistry, the growing new field of "green chemistry"[138] is something that shows great promise for eliminating the threat of toxic chemicals from the cultural and natural environment, thus realising the foundational ethico-juridical principle of *lā ḍarara wa lā ḍirara* ("no harming and no reciprocating harm"),[139] which is itself derived from the cosmic, prophetic principle of universal mercy.

138. And related areas such as green technology, green engineering and green architecture (eco-building).
139. Which is actually hadith no. 32 in Imām al-Nawawī's *Forty Hadiths* (*al-Arbaʿīn al-Nawawiyyah*).

Conclusion

As alluded to above, the highly important, strategic question of the appropriate higher educational institutional framework needs to be addressed for realising the Islamic Science Research Program (ISRP)[140] 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 and philosophy of science)[141] to their respective specialisations.

This author harbours some doubts as to whether the vision of the ISRP in the framework of a *Kalām* of the Age can be faithfully and successfully realised from within the current restrictive pedagogic framework of the modern academia including the current "Islamic University" system, which to a large extent, is either overly coopted into the secular agenda of corporate globalisation or into the political economic agenda of the over-centralised state, or both. Under the current circumstances, the way forward may take the form of a loose, informal network of autonomous grassroots educational initiatives, such as, institutes, academies, *madrasahs* and think-tanks, built up by independent scholar-intellectuals of conscience and vision and their student-supporters who know one another intimately through visits, conferences and other avenues of close intellectual interactions toward a common educational and civilisational mission, in which the ISRP can be embedded. Some of these grassroots educational initiatives are already well-established and flourishing in places such as Malaysia, Turkey, Syria, Egypt, Libya, Dubai, Jordan, Yemen,

140. Adi Setia, "Islamic Science as a Scientific Research Program: Conceptual and Pragmatic Issues," *Islam & Science* 3, no. 1 (Summer 2005): 93–101.
141. See idem, "Three Meanings," 23–52.

England, Scotland, the United States, South Africa, Indonesia and Canada.[142]

Eventually, some form of consensus will emerge on common academic standards by which a student qualified in the traditional religious sciences from one institute can be recognised and accepted to study the intellectual, empirical and vocational sciences in another institute dedicated to the programme of Islamising 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).

As pointed out by S. Nomanul Haq, there is a great need to revise the way we educate university science students so that they know how to integrate their scientific knowledge and expertise into the more fundamental and higher goals of human life, and thus, avoid the destructive pitfalls of scientism.[143] True science is beneficial knowledge (*al-ʿilm al-nāfiʿ*) resulting in beneficial works (*al-aʿmāl al-nāfiʿah*) that is geared toward serving rather than subverting these higher, human goals. The highest goal, the *summum bonum*, is, of course, "to bring a sound conscience to the meeting with the Lord,"[144] and thereby, to attain His pleasure (*marḍātiLlāh*).

142. The author had indeed personally visited some of them.
143. Syed Nomanul Haq, "Science, Scientism and the Liberal Arts," *Islam & Science* 1, no. 2 (December 2003): 267–271.
144. *Al-Shuʿarāʾ* (26): 89.