

Islam, Colonialism and Modern science during the Nineteenth century¹

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Muslims of India have applied the desire to defend religion, or religious zeal, in a very bad way. For they have carried zeal, through misuse, to a point where it has become a cause of hatred for knowledge and the sciences...They believed they must, out of religious zeal, hate and abominate what was connected with the opponents of faith, even though these things were sciences and arts. [Jamaluddin Afghani]

If one investigates into the dissemination of modern science and the social discourses of the nineteenth century infected by the scientific imperialism of the times, a close connection is revealed between science, politics and culture. Colonialism unleashed a process exposing Indian intellectuals, with diverse religious and cultural backgrounds to modern scientific ideas. In other words, the reception of modern science embedded in the rationalizing discourse of Baconian epistemology among the Indian people was not solely responsible for the erosion of indigenous knowledge traditions. The erosion of the traditional norms of Indian society was more a consequence of colonial encounter, than one triggered off by the impact of the tenets of the scientific method à la Bacon or modern science per se.²

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² Dhruv Raina and S Irfan Habib, *Domesticating Modern Science: A Social History of Science and Culture during Colonial India*, Tulika, New Delhi, 2004

For Islam in particular, European imperialist expansion into the Islamic world occupied central concern of the Islamist intellectuals and most of their reactions were motivated by colonial presence. However, this engagement was diverse and the late Eqbal Ahmad had outlined three main trends called restorationist, reconstructionist and pragmatist.³ The first can be easily equated with revivalism where attempts were made to restore the pristine purity of Islam and modern advancements in knowledge were viewed with suspicion. This trend was not so acute during the 19th century but is certainly very pronounced these days all over the Islamic world.⁴ I will refer to it in the discussion of the current paper but will mainly concentrate on the latter two trends. The latter two constitute some of the dissenting voices within Islam where attempts were made to engage with the Western onslaught within the available colonial constraints.

We also need to keep in mind that most of these reformers and modernists, who espoused the cause of modern science, were not scientists themselves and quite a few were not even trained in western education. The need to acquire new knowledge, lack of which was held responsible for the colonial subjugation, became a battle cry for all nineteenth century groups except a small section of the *ulama* who called for the revival of the Islamic spiritual and ethical norms. Their attempt to justify modern science on religious grounds was meant to serve a double purpose: first to defend true Islam from intellectual onslaughts of Orientalism and in the Arab world, to defend it from the highly secularized and westernized Arab Christian thinkers who appealed to modern science

³ Eqbal Ahmad, 'Roots of the Religious Right', Dawn, January 24, 1999.

⁴ The restorationists want to go back to the old way of life and re-impose the laws or customs that were, recapture lost virtues and restore what they believe to be the golden pasts-it is *Nizam-I-Mustafa* for the Islamists and *Ramraj* for the Hindutva enthusiasts.

as the basis of their rejection of the traditional and religious worldview; and second, to liberate true Islam from the clutches of the religious establishment, who, in the name of safeguarding the *shariah* and the traditional legacy, resisted *ijtihad* and maintained a negative attitude toward modern civilization of which science is one of the major fruits.⁵ This engagement with modern science has been dubbed as the 'colonized discourse' by some scholars.⁶ In a recent work, Muzaffar Iqbal goes into the early years of Islam to conclude that "unlike the Islam and science nexus that had developed naturally in the eighth century...the new discourse is strained, laboured and carries the burden assigned to Islam in the discourse: the legitimization of the modernists' agenda."⁷ There is no doubt about the fact that colonial presence conditioned most of the responses but that does not mean that it can not be viewed on its own terms and each time we raise the issue of science and Islam we need to get back to the so called golden age of science in Islam- almost a millennium apart from each other. It is all part of history that most of the non-European cultures were on the defensive when it came to confronting post-Enlightenment Europe and colonization further closed its options. However, Ram Mohan Roy, despite being an Anglicist and protagonist of modern (western) knowledge, wrote his *Tuhfat-ul-Muwahidin* in 1803 in Persian, with an introduction in Arabic, where he attempted to provide an alternative notion of modernity- a non-Western view of modernity and rationality based both on Hindu as well as Islamic sources.⁸

⁵ Osman Bakar, *Tawhid and Science*, Lahore, 1991, p.210.

⁶ Muzaffar Iqbal, *Islam and Science*, Ashgate, Burlington, 2002, p.243.

⁷ *Ibid.*

⁸ Dhruv Raina and S Irfan Habib, *op.cit.*

I propose to look at some of the 19th century Islamic intellectuals and see how they engaged with the questions of science, colonialism and modernity. In the process I will also talk about their perception of modern science and contrast their inclusivist approach with the exclusivism and sectarianism of the present day enthusiasts. The 19th century intellectuals were faced with the brutal onslaught of mercantile imperialism and reduced to civilizational nothingness due to a concerted Orientalist discourse preceding colonization. Yet some of them tried making a distinction between imperialist project and its concerns and the project of modern science. They were bitter critics of imperialism all over the Islamic world but were not prepared to disown modern science. Even today, the postcolonial Islamic societies are faced with some real as well as perceived Western cultural and intellectual hegemonisation. This is being misused by some ideologues of Islamic science to dub modern science as part of the evil colonial baggage to be accepted at your own peril. For them modern science is an epistemological as well as cultural break from an earlier unadulterated Islamic past.⁹

I will mainly deal with Maulvi Karamat Ali Jaunpuri, Munshi Zakaullah, and Syed Jamaluddin Afghani. The first was Calcutta based Islamic scholar and teacher while Zakaullah was a Delhi based autodidact. Jamaluddin Afghani is a better-known pan-Islamist and anti-imperialist, who spent few eventful years in India in the 1880s. Let me point out that they raised questions at a very rudimentary level, attempting to convey the

⁹ Osman Bakar, *op.cit*, p.16. Even this past, perceived as unadulterated, was not really so. This most sought after and pristine Islamic past had its illustrious Nestorian Christian, Jewish, Hindu, Chinese and Buddhist contributors, who were welcomed by the liberal Caliphs of Baghdad to engage in the production of this corpus of scientific knowledge, which later came to be called Islamic science. Today one tries to forget or deliberately overlook its multicultural and multi-religious origins.

feeling that modern civilization, represented by the Euro-American world, was the outcome of joint human effort, cutting across cultural or religious barriers. We may not be justified in locating the current understanding of multiculturalism or Needhamian ecumenism in their writings, yet they did have a vision of knowledge, which was premised on the cross-cultural exchange of ideas through the ages. In doing so they saw Islamic civilizational contribution as an important component of modern science and did not feel the necessity of carving out a lone furrow, premised on a religious distinction.

Karamat Ali was born in the early 19th century in Jaunpur¹⁰ but spent most of his productive years in Calcutta as a teacher and mutawalli of Hooghly Imambara. He studied theology and other Muslim sciences under various celebrated teachers, including the famous Shah Abdul Aziz of Delhi. Karamat Ali's outlook on Islam and its relation with the world at large show a radical departure from that of the majority of the ulama of his time. He is, therefore, called the father of modernist movement in India.¹¹ He urged Indian Muslims to learn European languages so that western scientific works can be translated into Arabic, Persian and Urdu. His views on history and science are best reflected in his book called *Ma'akhiz al-Ulum* written in 1865.¹² He was therefore the founder of that intellectual school of Indian Muslims, called by Professor al-Faruqi the "One-Book school", which

¹⁰ Jaunpur today is an insignificant town in Uttar Pradesh. It had been an important cultural and intellectual centre during the 15th and 18th centuries. Mulla Mahmud Jaunpuri was a well-known scholar from the town whose book *Shams I Bazegha* remained influential among traditional scholars till the late 19th century. Jamaluddin Afghani also took note of this book in his India writings in the 1880s.

¹¹ Muhammad Aslam Syed, *Muslim Response to the West: Muslim Historiography in India 1857-1914*, Islamabad, 1988, p.36.

¹² Karamat Ali, *Ma'akhiz al-Ulum: A treatise on the origin of the sciences*, Calcutta, 1965 (in Persian). Ubaydi and Amir Ali translated this work into English in 1867.

identifies the Quranic worldview with scientific worldview.¹³ His comments on the state of science and education in the Muslim world, including India during the nineteenth century are worth reporting before we get into other questions related to science and Islam. He concedes that 'we, the Musallmans of India, have fallen far behind other nations in art and learning-the main cause of that is, that noblemen in this country, whether Hindoo or Mahomedan, pay no regard at all to learning and science and never spend a trifle even on such matters; and other people, though they spend enormous sums on marriage and funeral ceremonies, keep their eyes shut with reference to the education of their children.'¹⁴ He called such a conduct of his countrymen and coreligionists all over the Islamic world as 'antagonistic to civilization and to national prosperity.'¹⁵

He begins with a conviction that the Quran formed an intellectual watershed dividing the ancient philosophies from the modern epistemologies; he argued that it still could provide guidance for modern sciences. To quote his words:

The whole Koran is full of passages containing information on physical and mathematical sciences. If we would but spend a little reflection over it we should find wondrous meanings in every word it contains. The Koran has most satisfactorily confuted all the systems of ancient philosophies; it plucked up from the root, the physical sciences as prevalent among the

¹³ Ismail R al-Faruqi, 'Science and Traditional Values in Islamic Society', in Ward Morehouse, ed, *Science and Human Conditions in India and Pakistan*, New York, 1968, pp.12-28.

¹⁴ *Ibid.* p.78.

¹⁵ Karamat Ali expressed shock at music lovers' ignorance with mathematics in his country and Persia, where he travelled during the 1830s. While in Persia, a nobleman and private steward of the king wanted to learn music from him, 'but as they were unacquainted with mathematics, they could not understand the other science, so in the end I had to teach them mathematics first.'

ancients. What a strange coincidence exists between the Koran and the philosophy of modern Europe.¹⁶

Karamat Ali's faith in the Quranic knowledge and its utility in modern times did not go beyond treating it as a guide to progress. He did not look at it as a scientific text that had answers to all the complex scientific problems of today.¹⁷ Quran, like all other religious books including the Vedas, is all encompassing in its range and it certainly talks about science (not exactly in a way science is known today). One can find interesting insights in all these sacred books but the engagement should end there and not in making Quran or the Vedas as full time preoccupation to read science in them, making it an end in itself. There are scholars who argue that the work done by such scholars is useful in a sense that it has reawakened Muslims to the value of their inheritance and rekindled the desire for further research with awareness that there is Quranic sanction for scientific research. As a matter of fact all such attempts have actually exposed Islam to Western ridicule, bringing it into conflict with not only science but with any rational thinking itself.¹⁸ Sayyid Qutb describing such an exercise as 'a methodological error' has insisted that while the Quran contains guidance on scientific subjects, it is not a textbook of science.¹⁹

¹⁶ *Ibid.* p.40-42.

¹⁷ Maurice Bucaille is one of the foremost articulators of Islamic science and author of an exegesis called *The Bible, The Quran and Science*. He has concluded that whereas the Bible is often wrong in the description of natural phenomena, the Quran is invariably correct and that it correctly anticipated all major discoveries of modern science.

¹⁸ A Pakistani neuropsychiatrist called AA Abbasi authored a book titled *The Quran and Mental Hygiene* where he found in the Quran modern cures for diabetes, tuberculosis, stomach ulcers, rheumatism, arthritis, asthma and paralysis. In the end these claims could not go beyond intellectual amusement. Another Pakistani nuclear engineer suggested that the jinn whom God made out of fire, should be used as a source of energy to combat the energy crisis.

¹⁹ Ziauddin Sardar, *Explorations in Islamic Science*, London, 1989, pp.35-36.

Karamat Ali was of the view that under Quranic guidance, Muslims had developed Greek sciences into modern sciences and transmitted them to Europe through their centres of education in Spain. This process of cultural and intellectual diffusion had resulted in the nineteenth century scientific discoveries of Europe from which the Muslims of India could justly benefit without any sense of inferiority.²⁰ Other 19th century Islamic intellectuals expressed similar sentiments as well. Munshi Zakaullah in Delhi also believed that knowledge or science was the outcome of cumulative human effort over the centuries, and each century added a new chapter to the progress of science. The 19th century, in particular, had been an auspicious century in the history of science, as it had brought about revolutionary changes in knowledge never even conceived of by earlier generations.²¹

Karamat Ali also observes that “Charlemagne, following the example of the Arabs, instituted seminaries and colleges in Paris and other cities of the empire...The barbarians soon became alive to the fact that without knowledge nothing could be done, and began to make efforts in its pursuit”.²² However he conceded that “the tables are now turned on the latter, they have contracted a dislike for all sorts of learning and have forgotten that knowledge will not come to any person unless wooed with the utmost assiduity, the Europeans on the other hand have become exceedingly alive to this fact”.²³ Zakaullah expressed similar sentiment while contrasting the Eastern and Western sciences saying `these days contrasting the Western or modern sciences with the Eastern or traditional

²⁰ Karamat Ali, *op.cit.* pp. 15-22.

²¹ Munshi Zakaullah, *Tabiyat-Sharqi wa Gharbi ki Abjad (Beginnings of the Eastern and Western Sciences)*, Delhi: Matbua Ahmadi, 1900, p.6.

²² *Ibid.* p.73.

²³ *Ibid.* pp.76-77.

sciences is like lighting a candle before the sun'. He moves further and says that 'there has been no progress at all in the traditional sciences since ages. Now they are like grandma's stories which can amuse only little children'.²⁴ As an old man, he shared with C F Andrews his enthusiasm for the new knowledge while a student at Delhi College saying 'the young students....were allowed to try astonishing experiments with unknown chemical gases. They were invited to dip into the mysteries of magnetism, which was just then coming to the front as a freshly discovered science.'²⁵

Jamaluddin Afghani represents another trend during the 19th century where he did some tight rope walking in his attempts to balance his anti-imperialist nationalism with philosophic rationalism and support for modern advances in sciences.²⁶ He got into a duel with Syed Ahmad Khan on this issue and attacked him for his cooperation with the British while sharing Ahmad Khan's rationalism, reformism, and scant orthodoxy. While formulating his arguments against Syed Ahmad Khan, Afghani outlined three types of education. First, a man can be educated to be part of a nation (*qaum*), and to serve its social order. Second, education can be based on the interests of the individual, with no regard for the nation and finally, education can be based on the interests of foreigners²⁷ Afghani put Syed Ahmad Khan in the third category saying that it would be thousand times better to have no education at all than to have that harms one's own nation. He personally espoused the first category of national type of education to strengthen the nationalism and community feeling. Afghani's engagement with the British imperialism had pan-Islamic implications and

²⁴ Zakaullah, *Mahakmat-i- Tabiyat Gharbi wa Sharqi*, Matbua-i-Ahmadi, Delhi, 1900, p.1.

²⁵ C F Andrews, *Zakaullah of Delhi*, Cambridge, 1929, pp.42-23.

²⁶ Nikkie R Keddie, 1968, *An Islamic Response to Imperialism*, University of California Press, Berkeley,. p.67.

²⁷ *Ibid*.p.68

he was not bogged down by the specificity of Indian conditions. Syed Ahmad was preoccupied with the dismal state of Muslim education in the post 1857 scenario and thus found British cooperation indispensable²⁸. Ram Mohan Roy could talk of reform and modernization through British collaboration in the early decades of the 19th century²⁹ but Syed Ahmad had to cope with the emerging nationalism and its compulsions in the post 1857 India. Let me digress a bit and talk about Mahendra Lal Sircar and his efforts at founding a science institution on nationalist lines called the Indian Association for the Cultivation of Science (IACS) in Calcutta in 1876. He made a passionate plea to his countrymen and to the colonial government to come forward and help in establishing an institution of science on nationalist lines, which he felt was indispensable for the regeneration of India. Let me give a longish quote from his pamphlet to understand the arguments he made:

.... But for the present we should deem ourselves fortunate indeed, if we enjoy the same liberty of thought and action as any Englishman does. This would be enjoying more liberty in fact than a Hindu ever did in his own golden ages. Nothing in our opinion could be greater tyranny than the monopolizing of learning by one section or caste of the community, which prevailed in India even in the most ancient times. Let us thank heaven then, that though nominally under a foreign power, that foreign power is really more friendly towards us, than we could call our own ever was....³⁰

²⁸ For a detailed discussion on this issue see S Irfan Habib, 'Reconciling Science with Islam in nineteenth century India, Contributions to Indian Sociology, Vol.34, No.1, 2000.

²⁹ Saumyendranath Tagore, Ram Mohan Roy: His Role in Indian Renaissance, The Asiatic Society, Calcutta, 1975, pp.53-55.

³⁰ Mahendra Lal Sircar, On the Desirability of A National Institution for the Cultivation of the Sciences by the Natives of India, Calcutta Journal of Medicine, August, 1869, p.5.

Sircar, like Syed Ahmad Khan, was moved by the state of decline in science and learning and did not hesitate to thank the “inherent generosity that flows through every British heart” in removing all possible hurdles and hoping that soon we will see that in what respects “will a native of India differ from a native of England”.

Despite his radical and sometimes even overenthusiastic interpretations of Quranic verses, Syed Ahmad did open up a new world for the community tormented by decades of depression and lack of self confidence. He certainly can not be held responsible for the decline in the community’s fortunes as Muzaffar Iqbal accuses him saying that” he (Syed Ahmad) embarked them upon a path that made no sense of their history and heritage and that led to the eclipse of the tradition of learning and excellence that had been the hallmark of Islamic civilization for more than a millennium.”³¹

Getting back to Jamaluddin Afghani, he believed that `science is continually changing capitals. Sometimes it has moved from East to West and other times from West to East.’³² Probably referring to the Asharite reaction to the early Islamic scientific resurgence, called the “Golden Age” of Science in Islam, Afghani pointed out that `Muslim religion has tried to stifle science and stop its progress. It has thus succeeded in halting the philosophical or intellectual movement and in turning minds from the search for scientific truth.’³³

Afghani conceived of modern science as a universal science that transcends nations, cultures, and religions, although he recognized the role

³¹ Muzaffar Iqbal, *op.cit.* p.252.

³² Nikki R Keddie, *op.cit.* p.

³³ *Ibid.*p.185.

of cultural values in the domain of technological applications.³⁴ He goes further saying that 'the strangest thing of all is that our *ulema* these days have divided science into two parts. One they call Muslim science and one European science.... They have not understood that science is that noble thing that has no connection with any nation, and is not distinguished by anything but itself.'³⁵ To use the expression of Farouk El-Baz, an Egyptian geologist at Boston, "Science is International. There is no such thing as Islamic science. Science is like building a big building, a pyramid. Each person puts up a block. These blocks have never had a religion. Its irrelevant, the colour of the guy who put up the block."³⁶ Abdus Salam, the only Nobel Laureate in sciences in the Islamic world, and a great believer himself categorically held that 'There is only one universal science, its problems and modalities are international and there is no such thing as Islamic science just as there is no Hindu science, no Jewish science, no Confucian science nor Christian science.'³⁷ Afghani laid great emphasis on the cultivation of philosophic spirit and the spirit of scientific inquiry itself, which in fact is demanded by the Quran. The loss of this spirit in the Muslim world has resulted in its stagnation and deterioration, whereas the West has prospered and become powerful because it has nurtured this spirit inherited from the Muslims. In learning science afresh from the developed West, the Muslims are actually engaged in recovering their past glory and re-fulfilling the long neglected commandments of the Quran concerning the study of nature.³⁸ The early Islamic scientific resurgence was premised on this spirit based on *ijtihad*- to exert the utmost effort, to struggle, to do one's best to

³⁴ Osman Bakar, *op.cit.* p.215.

³⁵ Nikki R. Keddie, *op.cit.*

³⁶ Dennis Overbye, *op.cit.*

³⁷ Abdus Salam, *op.cit.* p.ix.

³⁸ Osman Bakar, *op.cit.* p.218.

know something, which was lost in the battle with orthodoxy and replaced by *taqlid*- the tyrannical attitude of passive resistance. Ziauddin Sardar concedes that the day *taqlid* was accepted as the dominant paradigm, Islamic science truly became a matter of history.³⁹ Today, when Nasr and Sardar talk about the glorious tradition of Islamic science as an epistemologically distinct category, one wonders which science or scientific tradition is being referred to. Is it the science of the Islamic renaissance of the 8th-13th centuries? So far we have little evidence of Islamic science being practiced today, including the countries like Saudi Arabia, which invests a lot in promoting the idea of Islamic science.

Like Syed Ahmad Khan, Obaidullah found it futile to regard the Quran as a work of science and for them the crux of their belief was that 'the real purpose of religion is to improve morality'. Let scientific truths be established by observation and experiment, they believed, and not by attempting to interpret a religious text as a book of science.⁴⁰ Obaidullah, going back to the history of science in Islamic civilization, wrote that when Aristotelian philosophy and Ptolemaic astronomy were introduced in the Mohammedan schools, their absurd doctrines seemed to be irreconcilable with the Islamitic (sic) religious precepts; therefore our divines, thinking it dangerous to the faith, were compelled to defend revelation with great difficulty, but on the introduction of the European inductive philosophy there is no apprehension of this kind. Our sacred faith, whose essential part is Theism or natural religion, being little shaken by the Western experimental philosophy, which is only a copy of nature and by which the existence, unity, power and wisdom of that Sole being are proved, will rather gain

³⁹ Ziauddin Sardar, 'Can Science come back to Islam?' New Scientist, Vol. 88 No.1224, October 1980, p.215.

greater strength, than was possible by means of Grecian philosophy which caused a great controversy and the division of sects. We ought to regard Aristotle and Ptolemy as greater enemies to our faith than Copernicus and Newton.⁴¹ Contrast this with Syed Hossein Nasr's views today that find no consistency between Islam and modern science. He relentlessly castigates those:

.... modernistic Muslim apologetic writings, which would go to any extreme to placate modernism and would pay any price to show that Islam is 'modern' after all and that in contrast to Christianity is not in conflict with 'science'.⁴²

He finds that the modernistic writings claiming compatibility between Islam and the science of Galileo and Newton are flawed because they wilfully distort the meaning of the Arabic word *ilm*, whose pursuit is the religious duty, into meaning science and secular learning. This is false because *ilm* refers to knowledge of God, not to knowledge of the profane. As a matter of fact this position contradicts the famous saying of the Prophet himself where he exhorted the believers of Islam 'to pursue knowledge even unto China'. What was this knowledge, which the Muslims were supposed to pursue? It was certainly not the knowledge only about God and the Prophet himself did not mean it to be so. It is only the sectarian interpreters today who are trying to make this distinction between knowledge and *ilm*. A recent study dubs all nineteenth century reformist

⁴⁰ Pervez Hoodbhoy, *Islam and Science: Religious Orthodoxy and the battle for Rationality*, Zed Books, London, 1991, pp.68-69.

⁴¹ Obaidullah Ubedi, *Reciprocal Influence of Mahomedan and European Learning and Inference therefrom as to the possible influence of European Learning on the Mahomedan Mind in India, 1877*, Calcutta, p.48.

⁴² S H Nasr, *Islam and Contemporary Society*, London, 1982, p.176.

exhortations to pursue modern science as reductionist because the word '*ilm*' was conveniently used to produce a new strand of Islam and science discourse.⁴³ In that case, is it not reductionism to limit *ilm* to mean merely knowledge about God? If that was so then why did the prophet make this distinction in his famous saying "To listen to the words of the learned, and to instil into the heart the lessons of science, is better than religious exercises"⁴⁴ The prophet of Islam exhorted his newfound followers to pursue both the sacred as well as secular and both the exercises for him were ultimately a search for the Truth of God. The concept of '*ilm*' or knowledge is being misread and misinterpreted by a large number of Islamic scholars and activists today in the same manner as the notion of *jihad* is being hijacked and trivialized by some Islamic extremists⁴⁵. Both are akin to the vandalization of the core edifice of Islam where *ilm* and *jihad* occupied a central place. The 19th century interlocutors may not be as sophisticated as our present day ideologues but they knew their Islam well enough.

⁴³ Muzaffar Iqbal, *op.cit.* p.244.

⁴⁴ Cited in Syed Amir Ali, *The Spirit of Islam*, Delhi, 1978 (first published in 1922). P.362.

⁴⁵ The notion of *jihad* in Islam is not so simple and easy as it is being made out to be to serve narrow and devious political objectives. *Jihad* in Arabic means to strive, which has nothing to do with violence. It is a multi-layered concept and not just one-dimensional as it is being projected. The greater *jihad* or *jihad-i-akbar* is to control one's greed and selfish desires and lesser *jihad* or *jihad-i-asghar* is war with sword in defense of Islam.