

Science and Social Movements in India

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Historians of Indian science and philosophers have often wondered as to why India lagged behind Europe in the Scientific and Industrial Revolutions, despite a head start of more than 1500 years. Many reasons have been suggested for this regression. Chattopadhyaya (2001) had suggested that the ability to swallow logical contradictions wholesale left its stamp upon the Indian national character, noticed by modern observers, as also by the Arabs and Greeks before them. The absence of logic, contempt for mundane reality, the inability to work at manual and menial tasks, emphasis upon learning basic formulations by rote with the secret meaning to be expounded by a high guru and respect for tradition (no matter how silly) backed by fictitious ancient authority had a devastating effect upon Indian science. For historical descriptions of ancient Indian scenes and people, sometimes even for the identification of ruins, we have to rely upon Greek geographers, Arab merchant travellers and Chinese pilgrims. Not one Indian source exists of comparable value.

One has also to critically assess if the Sufi and Bhakti spirit of resignation and reconciliation, emotion and acceptance, adversely affected the critical temper and scientific research in India during the last millennium. One of the reasons why science did not have in India a career comparable to that of the post-Renaissance Europe is often attributed to the rise of devotionism, mysticism and indifference. Rahman addresses this problem and tries to evaluate the role of Bhakti and Sufism in the development of science in India.

In his foreword to the *History of Indian Science Technology and Culture AD 1000-1800*, D. P. Chattopadhyaya writes that it is widely recognized that India had a rich philosophical and religious heritage to its credit but the Euro-American world of learning seemed to be sadly unaware of its scientific and technological traditions. It does not matter whether the Euro-American learning simply continues to ignore or undermine the knowledge extraneous to itself deliberately or otherwise. People are either directly questioning the particularistic, reductionist science itself as it has become an exclusive symbol of the West alone, or are indirectly challenging its domain by trying to bring out the science that the past civilizations and cultures had. The essay, *Science and Social Movements: Bhakti and Sufi Movements* by A. Rahman, is an attempt to bring out the state of science during the Bhakti and Sufi movements of India. A. Rahman, who was the first director of the National Institute of Science, Technology and Development Studies (NISTADS), New Delhi and a pioneer in the field of History of Science and Technology in India is the editor of the present volume (*History of Indian Science Technology and Culture AD 1000-1800*).

Before bringing out the status of science during the periods of Bhakti and Sufi movements in India, Rahman raises many questions, outlines the contradictions with regard to science as it has come to be understood and gives fresh perspectives. He says that the Euro-

American framework of history of science has led to the marginalization of scientific and technological developments. Further, it has projected science and technology as exclusively a European phenomenon. He also points out that one tends to look at the past from within the contemporary framework, evolved over the years, as a result of the industrial revolution and the French revolution. The main assumption of this approach according to Professor Alan Mackay, Rahman points out, is that the world can be changed by technology, which can serve as a motor for perpetual change or development - an ideology having its basis in the Industrial Revolution. Rahman says that the dominance of science in contemporary society, both in personal and social lifestyles, the institutions created to promote it, and the resources required by it have also created a reaction, against the method of science, its philosophy, and the emphasis on research for creating weapons of destruction. These developments in the contemporary world have created doubts about scientific pursuits, putting the neat picture of science under a cloud. Moreover, the implicit philosophy and framework of science, created by the Industrial Revolution and French Enlightenment, is being questioned. The deleterious effects of industrialization on environment and ecology and the depletion of non-renewable resources have come under serious criticism. The critique has triggered endeavours to find alternatives without discarding knowledge itself.

A very important point that Rahman makes is that the primacy given to scientific and technological research has to an extent, marginalized human needs. This linkage of science with social, cultural and political activities of man has often been obscured by the widely held view that science is socially, politically and morally neutral. While considering the development of science in the Indian context, Rahman says that the Indian studies in the history of science have followed the European framework which is based on chronological and compartmentalized arrangement of historical facts and events, divorced from social and political contexts - an approach that provides only a picture of linear development. He points out that recent studies in history of science have not only negated this approach of tracking the linear development of science and technology, but have also brought out the importance of the social, economic, cultural and political framework of scientific and technological developments.

Here Rahman links the concept of Cultural Area to the development of science, with particular reference to India, which he says the Euro-American science fails to address resulting in the neglect of the intellectual endeavours in the social and cultural sphere. In this regard it is pointed out that Asia has seen three major cultures- the Vedic, the Buddhist and the Islamic. Each of these interacted with one another in successive periods of history. One may notice many common features in these culture areas. The most significant feature is the emphasis on man - the promotion of self-discipline to look inwards in search of spirituality, developing a symbolic relation with nature and evolving a defined culture in human relationship. Rahman does not say if this feature could be considered science but points out that such a viewpoint suffused in religion divided knowledge into two compartments: 1) Knowledge derived through the interpretation of sacred texts; and 2) Knowledge obtained through observation and experimentation. Apparently the latter alone is seen as science here. The theoretical and philosophical aspects related to the development of man were contained in the former, which apparently do not make up for science. It is also pointed out that in these culture areas the former tended to dominate the

latter to the detriment of science. Rahman says when science reaches a high level of development in a culture, different social forces emerge to marginalize it that is to say that other intellectual and social activities come to dominate society in place of scientific activity. With the presumption that science having developed to a high level in earlier agricultural periods the needs and demands of society in the period under review, which was predominantly agricultural, remained at a level that could be easily met by the already developed science. Rahman presupposes that not only during the Bhakti and Sufi periods in India but during the entire period ranging from the 12th to the 18th century science lagged behind. This however did not preclude the further development of science to satisfy human curiosity. In fact, during this period some of the most significant general statements were made regarding matter, life and other aspects of knowledge. Science was also being used in tackling matters in everyday life though he implies that science remained with the elite while the common people went by popular knowledge and popular religion. He points out that a bibliography of source materials of books written in India in Arabic, Persian and Sanskrit during that period lists about 10,000 manuscripts, which still remains unexplored. In view of this he raises the question that if this was the scale of scientific activity and if India was ahead of Europe in this sphere till about the 17th century then why did not this activity result in a major scientific development. A similar question occupied Needham's mind when he asked why the body of systematized knowledge and theory about nature, which we call science, did not develop also in India or China. One reason that Rahman gives for the growth of science being arrested is that science tends to become a tool in the hands of few, the so called elite as is the case with religion. But he points out that in reality there is no decline at all in science, rather having reached a certain stage the scientific activity continues at the level in a particular society while in another society it develops with a new framework. Rahman perhaps has in mind the growth of science in different cultural areas such as India, Greece, the Islamic world and Europe in succession or with overlap. Besides these various other reasons have been enumerated by Rahman for the stagnation of science during the mediaeval period in India and Asia. Among these - wars, invasions, political and economic instability, lack of patronage, suppression of free inquiry and preoccupation with the problems of social equality and harmony etc. - have been outlined. He also quotes Abdus Salam and Nizami as saying that the growth of Sufi mysticism was the cause of decline in science.

Bhakti Marg

With this perspective, Rahman looks into the Bhakti and the Sufi movements separately. His treatment of the subject seems to be descriptive, rather than an attempt to discover science in them. He says little about the origin of the Bhakti movement. It first began in the south between the sixth and tenth centuries. Dr Tara Chand felt that one of the possible influences might have been the advent of Islam. The Bhakti Marg, both in the south and in the north, could not be considered as a single unified movement; it had many facets and its sources were diverse. Bhakti literature is an important part of Tamil literature. It is non-Vedic and its traces are found in Buddhist and Jain literature as well. One significant development in Bhakti was the effort by Ramanuja, who was credited with the integration of Vedic and Bhakti streams in Tamil Nadu through his doctrine of Dual Vedanta, which placed the hymns of the Alvars at par with Upanishads. The literature of Bhakti Marg was in the language of the people, instead of Sanskrit. The Bhakti Marg was neither a mass

movement, nor was it a social reform movement, it was based on the reform of the individual. Every man or woman who became a Bhakt was for the salvation of the individual.

The growth of Bhakti was indeed a part of the social turmoil and upheaval and the social ferment of the period due to two factors: one internal and the other external. The internal factor covered the social impact of the rise and fall of dynasties, conflict with Buddhism and Jainism, internal religious debates and sectarian conflicts, and the reaction against a monistic, closed, ethno-centric environment, as a result of imposition of a pristine model from above which did not allow for variety, individuality and emotional satisfaction. The external factor included the activities of Sufis, due to the Arab traders and others settling first in the south and later in the north. The latter may also account for the late rise of Bhakti Marg in north India. Rahman says Bhakti can also be taken as a revolt against Brahmanical particularism, an assertion of the rights of the under-privileged, promoting equality, variety and individuality as against the monopolistic Brahman-centric environment. Its expression and the language of expression differed from person to person, from Alvares to Ramanuja, from women saints Mirabai to Lal Ded, from Ravidas to Kabir, and from Tulsidas to Guru Nanak. As one could infer from the writings of the Bhakts, religion was presented as a matter of experience rather than the following of rituals. Despite the prevalence of Bhakti, and the presence of a number of Bhakts in different parts of India, Bhakti could not become a movement. Groups formed around different Bhakts to propagate their messages. Only Guru Nanak laid the foundation of a religion and Sikhism became a movement of social and religious reform.

The religious fervour of its upsurge and its nature, as also the social and cultural dimensions of Bhakti have been explored to some extent. But some of its linkages with intellectual activities and cultural movements remain to be investigated. Did the Bhakts, through their practices, apart from getting individual solace, hope to give a meaning to their lives or prolonging their lives? What was their interaction with the *Rasayana* practices, particularly of those who came from the artisan class? Was there any link between Bhakti and *Tantric* practices, which were quite common in those days? Further, we do not know how many of the Bhakts had an education or proper understanding of scientific knowledge of the period.

Rahman says that these and other dimensions and questions require further study.

Sufi Movement

Sufism in fact was not one single system. It was as complex as the various trends in medieval life, society and culture woven together. The medieval time was dominated by the mysteries of life, which the human mind was unable to fathom: the decay of beauty, of natural things and their impermanence, on the one hand, and the birth and purpose of life, the life after-death, and the mysteries of soul, on the other. Moreover, the elite and the highly educated did not find any logic or rationality in the running of human and social affairs. And lastly, there was the utter helplessness of humans, who despite their knowledge and reasoning power could not fight their destiny; in other words, they were caught in the trap between predestined action and free will. Under these conditions of uncertainty and

shortness of life, destruction and decay, people yearned for a peaceful and long life, with some degree of certainty. They desired their name and fame to continue after their deaths. For this purpose, the rich and the powerful tried to construct magnificent buildings, places of worship, palaces and tombs. Litterateurs and poets achieved this through their works, artisans and craftsmen through their creations. There were, however, other streams for prolongation of life and for attaining immortality. For example, through alchemy men endeavoured to produce the elixir of life for prolonging life or even achieving immortality. The knowledge in the Islamic framework was divided in *Ilmal-Adyan* and *Ilmal-Dunya*, that is, knowledge of the religion and knowledge of the world (including the natural sciences). The corresponding Sufi nomenclature was *Ilme-Batin* (knowledge of the self) and *Ilme-Zahir* (knowledge outside the self). This division of knowledge is exactly the same that Rahman has enumerated for Hinduism or the Bhakti Marg.

Sufis, through various practices like fasting, meditation and other means (common with Hinduism or adopted from it) strived to purify the soul, to attain the status of *Insane Kamil* (the perfect man) so that, finally, on their passing away, the soul would meet its ultimate goal. It is interesting to note that an early book of the tenth century AD. *Kashful Mahjub* by Ali Hujwari (known as Data Ganj, and buried in Lahore), advocated *Hallul* (i.e. transmigration of soul). The inclusion of this concept from Hindu philosophy of transmigration of soul in an early text is quite significant. It is most interesting to find commonality of approach between Hindu and Muslim practices. In India the alchemical route was through *Rasayana* and *Tantric* practices, to which yogic exercises could be added. The Sufi tradition had its similarity in practices with the Bhakti and the ascetic practices of the Brahman. This commonality of approach represented similar goals towards which humans aspired, although the similarity of practices was the result of interaction over centuries. This is also brought out by Al-Beruni's observations. Among the major beliefs of the period were the concepts of Macrocosm and Microcosm, the universal and the human systems respectively. The Macrocosm was reflected in the Microcosm and the release of soul from humans and its unity with the universal soul came to be the ultimate in Sufi philosophy and the main objective of their practices. Knowledge of nature, and how it works through observation, experimentation, and logical analysis, was of not much use to Sufis, because they saw in natural phenomena the attributes of God, a reflection of his power, omnipotence and his omnipresence. This according to them could be arrived at by meditation and development of spiritual powers, which when fully developed could enlighten the seeker through revelations. Thus, they felt that true knowledge, or knowing the reality, could not be obtained through observation and experimentation but through revelation.

At this point, Rahman looks into the relationship of science to mysticism and a contradiction crops up. Earlier Rahman quoted Abdus Salam and Nizami as stating that mysticism was the cause of decline of science, whereas here Needham has been quoted as saying that development of science owes much to mysticism. Here Rahman also tries to look into the coexistence of different religions primarily Hinduism and Islam. He says the Sufis in thought and practice attempted to reconcile the thoughts and practices of different religions. They preached unity of God and brotherhood of man. Sheikh Abdul Quddus of Gangoh, for instance, said, 'What is all this noise and controversy as to who is a pious

Muslim and who is a *kafir*; who has submitted to God and who is the sinner; who is following the correct path and who is not; who is Muslim and saintly, who is the atheist: they all belong to the same tradition.' Mirza Mazhar Jane Janan, talking about Hinduism, said that it is not easy to call anyone *kafir*. He considered the Vedas as sacred, revealed books and called the Hindus *Ahle Kitab* (i.e. People of the Sacred Book). The effort of Akbar for the establishment of *Din-e-Ilahi* is also mentioned and it is pointed out that the Sufi line of thought found its highest expression in the works of Dara Shikoh. The translation by Dara Shikoh of the Upanishads entitled *Sirr-i-Akbar* (The Great Secret) into lucid Persian, according to Tara Chand, was responsible for the introduction of Upanishads to Europe. This dimension of Sufi thought and practice was beautifully expressed by Shah Khamosh of Hyderabad:

*Kufr Kafir to Bhla, Sheikh to Islam Bhla
Ishq Aashiq to Bhla, Apna Dil Aram Bhla*

(Let everyone find peace in following his own path - of Kafir in his practice or Muslim in Islam or lover in his love).

With many poems and couplets by Hindu Bhakti poets and Urdu poets Rahman concludes, when scientific and technological development reaches a high point in a society, social forces emerge and assert themselves to bring humans to centre stage by allowing personal experiences, feelings and emotions to have a free play, to bring back human values to their assigned role in society. It happened in earlier societies and cultures. And he asks: Will it happen now?

He finally says there are some indications in that direction. Some critical thinkers and some groups on the fringes are already pointing in this direction.

Source:

Rahman, A. 1998. Science and social movements: Bhakti and Sufi movements. In (Ed.) A. Rahman, *History of Indian Science Technology and Culture AD 1000-1800*. Vol. III, Part I. PHISPC Series. New Delhi: Oxford University Press. Pp. 415-436.

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