

Science and cultural diversity in a post-colonial context

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"Cultural Diversity is to human species
what biological diversity is to the genetic
wealth of the world"

Rodolfo Stavenhagen

Science and cultural diversity has a little different meaning in post-colonial societies, different from the currently widespread understanding in Euro-American world. I do not wish to enter into the diverse meanings of post-colonialism, but in the South Asian context it means the era, which began with the end of British colonial rule. Thus most of the reactions to science in India as well as in other postcolonial societies are premised on a wide range of colonial experiences as the project of modern science itself unfolded here with imperialism. Another contributory factor to the current understanding of science in postcolonial societies is the characteristic bluntness of some of the leading lights in the Euro-American world when they talk of the mission of spreading science to Third World countries. As an example, we can look at the following lines:

With European industrial civilization comes European science. It is a package deal. The question whether a culture thus superseded or repressed had its own form of science has become purely academic....In the present discussion, it is taken for granted that European science should become a dominant cultural force throughout the world.¹

Such Eurocentric constructions are not only nasty, to say the least, but also hurt the self-esteem of the postcolonial societies. They are akin to the missionaries of old, who so fervently believed in Christian salvation. For them the so-called 'superseded or repressed' societies are worthy of the trash bin. But what happens to the vast corpus of knowledge that the Chinese, Mayan, Islamic and Hindu civilizations claim they have exchanged with each other and with Europe since ages? Keeping the above in mind, I want to raise few points on science and cultural diversity in a postcolonial context.

¹ Michael Moravcsik and John Ziman in 'Problems of Science Development', World Scientific, Singapore, cited in Pervez Hoodbhoy, *Islam and Science*, Zed Books, London, 1991, pp. 18-19.

- Most of the postcolonial societies feel that science is taught at the expense of indigenous knowledge and this precipitates charges of epistemological hegemony and cultural imperialism. The nature of colonial rule itself is seen as a concerted 'history of the cultural hegemony of the imperial powers established over the dominated societies'.² Thus what follows is the conclusion that modern "western" science is hegemonic and oppressive and invoking cultural diversity, the indigenists propose an alternative called indigenous science, which will be traditional, kinder, and will have gentler ways to relate to each other and to nature and thus will not be as arrogant as western science.
- What follows from above is that the third world witnesses the shadow of revivalism lingering in the background. The space created for the critical evaluation of indigenous knowledge systems has inadvertently reinforced the claims made by a new community of religious essentialists in South Asian sub-continent, and by these I mean the Hindu and Islamic-centrists. This is a menacing development for it threatens existing pedagogy of science and posits social schisms that were not as antagonistic in the past as they are now, thanks to the media. The need for working towards a more cognitively just framework for the history of science becomes all the more urgent.

The challenge then exists at least at two levels:

1. The pedagogy of science teaching. Multiculturalism was an offshoot of postcolonialism and the phenomenon of failed states in the postcolonial world, seen socially in the migration of people from the former colonies to the developed world. In way multiculturalism as pedagogic movement in the Euro-American world embodies a modality of coping with the changing character of Western societies over the last few decades. We can see the most radical changes taking place in the USA, where courses are being redone in the light of multicultural pressures, particularly the diversity in the classroom. The students from diverse cultural backgrounds demand their share of civilizational contribution to the corpus of modern science. This has thrown up new research concerns for the history of sciences-concerns that feed into the pedagogy of science education, but mediated through developments in the cognitive sciences, and cognitive learning.³
2. The political legitimization of a totalitarianism when it speaks in the name of indigenous knowledge, but in fact foregrounds one dominant tradition and destroys cultural diversity. For example, the Islamic past is being seen by the interpreters today as something pure and unadulterated, much different from what it has become now a mix of varied cultures and languages. They

² Amartya Sen, *On Interpreting India's Past*, Calcutta, 1996, p. 27.

³ Dhruv Raina, "The Present in the Past: Trajectories for the Social History of Science", in Romila Thapar (ed.), *India Another Millennium*, Viking, New Delhi, 2000, p. 24.

fail to realize that Islam had been a culturally diversified project from its very inception, which should be projected as its strength and not weakness. In this era of exclusivism, identity consciousness has taken a heavy toll of cross-cultural contributions in different civilizations and science is one of its major victims. Historian of science Roshdi Rashed points out in extensive researches that the first international science emerged in the Arab world during the early five centuries of Islam.⁴

However, the opposition to Eurocentrism and the inability to effectively engage with Western hegemony in the domain of international affairs, or the poor performance of former colonial governments back home has provoked reverse commentaries that mirror the chauvinism of Eurocentrism in the history of science. The main feature of this sort of history is that it seeks to claim priority of discovery for every scientific theory or any significant invention. Despite these developments there are historians of science committed to understanding the process of evolution of scientific ideas rather than getting bogged down by question of priority. But it seems that the pressures of globalization on the developing countries is likely to exacerbate the politics of identity, the parochial genre of the history of science will continue to prosper for some time to come.⁵

The Universality of science in a post-colonial context

Most of the multi-cultural literature on science seems to say that the problem with the Standard Account is that it is taken to be the only account of science. It is an exclusive and universally appropriate account. But is it really the bone of contention among those who talk of diversity? Is it the alleged universality of science or is it the intellectual exclusiveness of science according to the Standard Account or the universalist perspective of science. We raise this because the post-colonialist arguments rejecting the universality of science seem to be arguments more about the exclusivity of science. It seems that even if the definition of science were broadened to include what is now excluded, one would still have a universal science. That means modern science can be really culturally diversified only when it allows itself to be more inclusive. I mean all the indigenous knowledges find a place in the redefined and broadened definition of science.

Unfortunately even this is not going to solve the problem. The above solution comes from within science, with empathy for other knowledge systems. But a large number of post-colonial critics seek an epistemologically different science, different from modern science. They have a lot in agreement with the feminist critics of Sandra Harding variety, who talk in terms of ethnosciences and modern science thus for them is just a Western ethnoscience. In that case they have no problem

⁴ Roshdi Rashed, "Appendice: La notion de science occidentale", in *Entre Arithmétique et algebra*, Les Belles Lettres, Paris, 1984.

⁵ *Ibid.*, pp. 25-26.

with the categories like Hindu science or Islamic science and some have gone to the extent of calling modern science just a Christian science, which is of course necessary for the justification of their own existence. In such a situation what exactly one has to do, keeping in mind one's respect for the universality of science and also the cultural diversity, which I believe is one of the strongest weapons to defend science. For me Needhamian ecumenism and his river metaphor is one valid recourse. He proposed an ecumenical history of science that would recognize the different contributions of civilizations and cultures to the growth of modern science. While this has enabled non-Western civilizations to look upon themselves with a greater degree of self-confidence, and depart from colonial constructions of the East, at the epistemological level, critical scholars in the area would not entirely like to abandon the enlightenment ideal. What is considered problematic is the privileging of a European version of universality over other definitions of universality a paradox in terms. Rather one must now ask whether it is possible to speak in terms of a critical enlightenment that would reinstate the dialogue across civilizations in more egalitarian terms.