

Why should non-residents pay more conference fees?

With the conference season fast approaching, I wish to point out an unjustifiable asymmetry that we practise in India with regard to the conference registration fees that we charge Indian participants on one hand and foreign colleagues on the other. For example, the forthcoming Science Congress in Lucknow charges fees and subscriptions of Rs 50, 200 and 250 from Indians, and US \$ 20, 50 and 60 from one who is normally a resident outside India. The annual meeting of the Society of Biological Chemists to be held in Hyderabad in December wants Rs 1000 (or Rs 1200 if late) from Indians and US \$ 100 (or \$ 150) from foreigners. How can we justify these differential rates?

To get a feel of what some non-residents think about this asymmetry, I quote a letter that a distinguished Indian-born scientist from the US has written to a conference organizer in India.

'About a year ago, I visited India and was shocked to discover that the entrance fees to see various national monuments such as Mahabalipuram or Taj Mahal was different for Indian and for non-Indians (Rs 10 vs Rs 500!). I also met many non-Indian friends who saw this as gross discrimination and oversimplified rationale to exploit NRIs and foreigners. It is not surprising that the number of tourists visiting Singapore and Hong Kong is twenty times greater than those visiting India. Such a policy leaves a bad taste in the mouth of visitors.

'I recently got an invitation from organizers in New Delhi to participate in an International Conference, I found out that the registration fees for Indian scientists was Rs 500 vs US \$ 500 (or Rs 25,000) for non-Indian scientists. I politely declined their invitation to present a lecture as I will not attend any conference where scientists are discriminated on the basis of their nationality. This kind of fee structure makes many questionable assumptions. One, that Indian scientists are poorer than any other scientist in the world. It puts scientists from Egypt, Malaysia, Spain, Poland, UK or USA in the same category of affluence. If all participants listen to the same lectures, get the same coffee or tea, the same abstract and programme book, then why they should be charged different registration fees? In India, for the same dish in a restaurant, do we pay according to our annual income? In any case, I need to know before I accept your invitation to be a plenary speaker, whether all participants are charged the same registration fees or different depending on their nationality.

'People who have recently visited India and have experienced such government-sponsored and approved discrimination have made rather very unpleasant remarks about India. My final answer depends on your clarification of my concerns about the equal treatment of all individuals attending the conference. If your conference has different rates for Indian vs non-

Indian, I will have to say a polite no to attend your conference. I am looking forward to hearing from you.'

May I point out here that when international conferences are held in India under the auspices of international professional societies (such as IUBMB, IUPAB or ISER), the latter insist on a uniform registration fee across the globe? The Indian organizers comply by persuading national agencies such as DBT, DST and CSIR to pitch in and help Indian participants pay the hefty amount.

The practice of differential rates of journal subscription for Indians and people living elsewhere has existed for long (*Current Science* costs me Rs 300 per year, but my daughter in Seattle US \$ 100); the justification, weak or not, may be that the postal rates are hefty. If this argument is to be used by conference organizers, they may wish to charge non-resident registrants a bit more – but six-fold, twelve-fold?

I believe we have been doing this differential charging more out of historical inertia, and it is time to rethink this practice, as has been forcefully but graciously argued by the colleague in the US quoted above.

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Science, history and the dissemination of knowledge

What can progress in science and dissemination of such knowledge aid in accurate interpretation and widespread understanding of one's own history? Very little apparently. Your readers are probably aware that over the past couple of years, new research – to be exact – three papers (Human Evolution: The Southern Route to Asia, *Current Biology* 1999 Dispatch R295; Deep Common Ancestry of Indian and Western Euro-

pean Mitochondrial Lineages, *Current Biology*, 1999; Fundamental Genomic Unity of Ethnic India is Revealed by Analysis of Mitochondrial DNA, *Current Science*, 2000, 79), have been published, the last one just recently on both the genetic breakup of modern Indian populations as well as likely conclusions regarding the time, magnitude and type of their original migrations into the Indian subcontinent and beyond. Since

the facts are pertinent to make a case later on, here are the simplified facts in a nutshell. The published findings essentially draw upon the by-now well-known facts relating to mtDNA data breakups within and outside the Indian populations, viz. (1) In general, East Africans, most Europeans and most Indians possess haplogroup *U* – considered a prime West European marker. (2) Some East Africans from Ethiopia, some coastal Arabians,

most East Asian populations and almost all Indians have haplogroup *M*. Haplogroup *M* is considered a basic East Asian Marker. This is however conspicuously absent in Europeans. (3) The coalescence age of haplogroup *M* is considered about 60,000 YBP and that of haplogroup *U* around 55,000 YBP. (4) Among Indian populations within each gene pool, tribal populations have greater haplogroup *M* than any other, North Indians have more haplogroup *U* than haplogroup *M*, South Indians have more haplogroup *M* than haplogroup *U*, and as one moves up the caste ladder – whether in North Indians or South Indians – more haplogroup *U* than *M* is present.

From these, researchers have broadly come to a consensus that there were most likely two migrations into India. Each probably a small group of females (or more females than males). One carrying haplogroup *M* around 60,000 YBP starting from Ethiopia, rounding the Arabian coast, landing into the Indian subcontinent, some of whom must have proceeded eastwards to populate SE Asia, Australia and beyond. Then around 55,000 YBP, a second group of females carrying the haplogroup *U* marker got out of Africa, and on reaching the Middle

East – split into two groups – one headed west to Europe and the other east towards India, merging with the forerunners, i.e. the haplogroup *M*. This explanation would reconcile all of the above listed facts. Though there are some data to indicate smaller admixtures around 32,000 YBP and a much smaller one centering over a time period ~ 9000 YBP, the researchers point out that none of these or any other data indicate any major splash in our gene pool occurring in the recent past.

Now, what should all this lead our eminent historians to declare *vis-à-vis* the conventional take on our ancient history? For starters, one would think that the Aryan invasion theory would be pronounced dead. And yet this theory has persisted, not only among seasoned researchers within the ASI, ICHR and other historical organizations entrusted with documenting our history, but also finds its way into respected mainstream magazines from time to time. Pick up any recent issue of an in-flight magazine and odds are, you will to run into the old-familiar ‘when the Aryans overran Harappa around 1500 BC...’, etc. Why would such notions persist in spite of seemingly water-tight facts being now available? The reasons are not hard to

find. For one thing, the information is simply not widely known. For another, it is still complex enough not to be easily susceptible to sensationalism in the popular press. It is far easier to misinterpret some other data and breathtakingly declare ‘European gene found in upper caste Indians’. But more importantly, when non-mainstream historians pointing to the new facts draw ‘non-traditional’ conclusions, cries accusing them of being revisionist-history-fanatics or pro-Hindutva or some bogey is raised to pare them to size. And mainstream academics? Well, in their safe positions, they are by and large unwilling to rock the boat and say anything seemingly radical, if at all. On the contrary, much efforts are directed at belittling the new-fangled interpretations. The end result is that our history textbooks continue to carry outdated and disproven theories and our popular magazines blithely mouth inaccuracies oblivious of recent developments.

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Science education: Some comments and observations

There has been a spate of letters in *Current Science* since 1999 expressing concerns over the plight of science education in the country and the remedies thereof. In this context, I wish to ventilate my perceptions on the issue.

First, I shall focus on the science curriculum. The framing of a curriculum may be treated as a two-box problem, as depicted in Figure 1. One box is the syllabus (curriculum) box and the other is the lecture-period (teaching-hour) box.

What happens if syllabus box is made first, and then the lecture-period box

(Path-I)? There is a high probability that this would produce a vast curriculum wherein the correlation between topics to be taught and lecture periods available is irrational. Consequently, it would fail to serve the purpose. This is because the size of lecture-period box (maximum number of lecture periods available for a subject in the course duration) is defined (closed box!), while the size of the syllabus box is undefined (open box!), permitting a tendency to add more and more topics. Now consider Path-II – start with the lecture-period box, choose topics of a subject with reasonable number of lecture periods assigned and proceed to build the syllabus box. This path would provide a mechanism of restraint on the size of curriculum, making it a rational one. It is not difficult to ascertain the relevance and importance of topics for a subject to be

incorporated in the curriculum, but it is quite difficult to make an effective and optimum size of the syllabus. The present problem of a huge and unmanageable curriculum probably lies in Path-I and its solution in Path-II.

The students’ approach to study the syllabus, the standard of teaching imparted and the evaluation procedure are all inter-related. The first two are often guided by the third. The quality of questions designed for evaluation is thus critically important. A ‘more concept than information’-based evaluation would guide the students in the path of logical thinking, analysis and inquiry. Further, the merit of the questions can also provide a direction of teaching with regard to the topics involved.

Teaching, to be effective, requires the continuing process of learning, and the

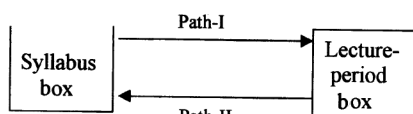


Figure 1. The two-box problem.