

## Some remedial measures for unemployed young and not so young Indian scientists

During the past one year, *Current Science* has published letters about the plight of young Indian scientists. I wish to attract the attention of concerned high-ups in the hierarchy of science and HRD bodies towards the genesis of the problem and offer some concrete remedial measures.

Creation of a floating or overflowing population of bright scientists on short tenure fellowships or jobless state after 8–10 years of doctoral and post-doctoral researches begins with the success in UGC/CSIR National Test and GATE for fellowship up to 5 years. The best brains 15–20 years back went to the science stream and the very best succeeded in NET/GATE. A few join Central and State Civil and Forest services, while those who opt for research as a career try for Research Associateship. The cream of the creamy layer gets into Research Associateship for 3–5 years and carves a name in the chosen specialty through publications. By this time many cross the age of 35 years which is the cut off point for lectureship and Scientist B post. Due to an acute famine of jobs, particularly for those unlucky 'unreserved' or open category citizens of India, most of the Research Associates have failed to get selected. Perhaps in no other country in the world, is there so much discrimination against its own citizens and that too the most meritorious brains in the matter of recruitment.

Some extremely talented scientists get Senior Research Associateship (Pool Scientists) of CSIR, for a maximum period of 3 years, renewable on year-to-year progress. Usually between the age of 30 and 35 they get married and have family and children. In the absence of jobs, the world has become too gloomy to survive and manage household expenses. Some of the remedial measures suggested are:

1. For all Research Associates and Pool Scientists, an age relaxation of 5 years be given.
2. The candidate selected through NET/GATE with Ph D degree in science should be assured of a job and so long as the job is not provided, a reasonable maintenance allowance be given. A Central Scientist Manpower Commission (CSMC) may be formed to take care of placements appropriate to the achievements of the scientist. The employing laboratories, universities, colleges, and other organizations may be subsidized by the Government of India through UGC/CSIR, to appoint Research Associates and Pool Scientists, say by way of 80% of their salary for the first five years.
3. There is a great international demand for trained scientists. The CSMC may prepare a centralized CV of qualified job-seeking scien-

tists and float these on web sites internationally to universities, laboratories and multinationals. On each such placement, CSMC may charge some money from employers for hiring qualified scientists.

4. A few of the former Research Associates have taken up a short-term post-doctoral fellowship assignment in foreign countries. CSIR and DST laboratories, and central universities in India should be directed to consider *in absentia* such candidates for their vacancies.
5. In the meanwhile, the tenure of all such Research Associates and Pool Scientists who are nearing completion of their full tenure should be extended for two more years so that some concrete steps may be taken for permanent placement.
6. A small but important action to be taken is timely release of fellowship/salary grants and standing directives to the host organization for regular payment so that delays of order of 4–6 months currently seen in payment may be overcome.

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## Does language influence original thinking?

Language is the medium of communication and inducer of brain functions. We perhaps do not know which was the first language spoken by humans, however, as different languages developed over several millennia. Ancient humans used different kinds of voices, different types of symbols and movements and these were the ways of communication in the beginning. Currently humans are using many languages for communication. The pathways of evolution of different

languages were different in many nations and among different cultures. The consciousness of science in the human mind, was initiated by the discovery of fire by an unknown ancient human being. The later inventions and discoveries made by humans have made great impact on the human race. The invention of alphabets for many languages has a great impact in social development. The millennium event has coincided with the globalization in a number

of aspects that has had tremendous impact in terms of use of a single language for communication. However, science and its implementation has been accelerated by the use of English as a major language, even though many nations like to use their own languages to ensure scientific activities and to understand science. Both have merits and demerits. Modern English language and its present alphabets evolved by the collaborative efforts of many people.

The middle of the last century saw the discovery of the language of the genes, the elucidation of the structure of the DNA molecule by Watson and Crick. The molecular and cellular legacy of functional proteins in a living cell is mostly unknown until now and we need to understand the structural and functional basis of languages of every molecule of a living cell. And the template of a gene has only four alphabets. A – adenine, T – thymine, C – cytosine and G – guanine, and it is arranged so uniquely that it controls millions of events in a cell.

The French language helped Jacob and Monod to think of the regulation of genes. The Indian subcontinent is unique because it has a diverse population and many languages. During the Vedic period, people used different languages; however in course of time Sanskrit came to be the medium for communication for many people.

Latin is the language used by biologists in naming living organisms and fossils. Other languages such as German, Russian, French, Japanese, Chinese, etc. are languages for

communication in their respective nations and great inventors and discoverers, perhaps, thought of using their own language. As a matter of fact human social development came from the achievements of thousands of years of a long chain of thinkers in many aspects; the language has played a pivotal role to activate and execute them.

To understand how the human minds think, perhaps one may note that logic is the regulated expression of thoughts and that perhaps gets initiated with the language of thinking<sup>1-3</sup>. The phenomena behind thought processes in the human brain might be conceptualized as coordinated perception followed by its translation into a language and it is a quick process. A man cannot think without a language. The question arises therefore whether great discoveries and inventions need a separate kind of language? How does the brain do what it does – its activation with language of thinking? The functions of the human brain<sup>4,5</sup> and detailed molecular inceptions still remain in the juvenile stage, and those making contributions in science – possibly think using their own language

which they possess from the very beginning of their lives. A new avenue for understanding is thus perhaps to examine how language helps in thinking<sup>6</sup>. Out of thousands of languages, which language helps supra sensible thinking is an open question and the answer to this riddle will help in choice of an appropriate language for learning by future generations.

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## Need for development of a model for natural hazards and disaster management

India is prone to a variety of natural calamities such as cyclones, floods, earthquakes, land slides, droughts, etc. besides many types of man-made disasters. Increasing population and economic activities have brought more people and areas under the risk of these disasters.

The policies and strategies for disaster management and mitigation presently are focused on 'Crisis Management' and therefore long-term aspects of disaster reduction are almost ignored. Neither a definite policy nor appropriate models for disaster management and development for the disaster-prone areas of the country have been evolved. Whereas short-term measures like relief and rehabilitation are undertaken, little has been done to undertake preventive and protective measures on a long-term basis to mitigate impact of disasters.

Added to this, in spite of considerable efforts by government and non-government agencies, persistence of superstitious beliefs indicates the ineffectiveness of our education/extensional education. To overcome different hurdles we have to basically evolve a definite policy and create appropriate models for disaster management and development with a long-term perspective. This is possible by creating a well-organized scientific database system which not only helps in improving preparedness but also provides decision options in disaster management. People living in California, USA are fully aware that they are living in an earthquake-prone zone and the San Andreas fault is an active fault zone capable of producing high magnitude earthquakes. Whereas not even the educated are aware that the Himalayan belt is highly seismic, Cambay rift and surroundings,

parts of Narmada–Son lineament, segments of Eastern Ghat Mobile Belt and zones along and closer to Western Ghats are in seismically (micro to moderate level) active zones. Because of this, the common man reacts invariably in an unbalanced manner creating a type of chaos during and after a disaster. Awareness to prepare the community to plan for probable eventuality is extremely essential to lessen the effect of disasters. In this respect one can take note of various developments and behavioural aspects prior to, during and after the recently occurred natural disasters, namely the super cyclone that hit Orissa, the earthquakes in Latur (Maharashtra), Chamoli (Himalayan foothills region), Jabalpur (Narmada–Son lineament), Bhavnagar (Cambay rift zone), and Western Maharashtra and the very recent floods in Assam and Hyderabad.