

Applied cognitive neuroscience: Pitfalls of funding an ideology

A debate is on in the US cognitive science and education circles which is more relevant to India, now than ever before, as we stand on the threshold of a new era – an era of putting neurosciences from the ‘neglected’ list to the ‘priority’ list. With the initiatives of setting up of NBRC, Manesar, the excellent neuroscience groups in NCBS, Bangalore and a cognitive science school in Allahabad, cognitive neuroscience in India has had a ‘spurt’ in recent years. The rightly skeptical Editorial and News¹ in *Nature* on the US National Science Foundation (NSF) effort towards ‘bringing neuroscience to the classroom’ sets the stage for this very debate. While initiatives that look at the neuroscience of learning, reading and cognitive development are welcome, those with the explicit purpose of translating the results into superior education strategies, can, at best, be termed premature. This bent of fast-track translation of concepts and ideas of a discipline as nascent as cognitive neuroscience is potentially damaging for the discourse and society. We have had ample experience of this kind in the past, when ‘science’, notably the Freudian² variant, has been unleashed on society, causing decades of setback to the science of the mind. And if one looks

back to contemporary commentaries of those times, there is an unmistakable positivist arrogance of solution providing, which hardly ever arose from the naked facts of the discourse. It is this obscurantist dissociation that cognitive neuroscience has to avoid. There are neologisms already when an impending explosion of findings in ‘learning science’ is talked about! The present respectability and excitement cognitive neuroscience has gathered from the monumental works of Michael Gazzaniga and others, are to be preserved at all costs.

NSF scheme of granting US\$ 90 million to such projects has a connotation to it. One might realize that it is not a simple, happy issue of increased funding for some focus areas within cognitive neurosciences, but the express idea behind this funding and the implications thereof, which are deeply troubling. The NSF plan almost conjures up images of the following scenario – Cognitive Neurosciences Inc – Smart Educational Technology Providers since 2005. This might as well be an expectation, but never a vision – and the philosophical divide between those two positions is important. The difference is essentially between a spin-off and a start-up.

At another level, such drum-beating would invariably spawn many homegrown ‘brain-smart’ solution providers, who will claim scientific basis for their products. The way ageing research is misrepresented daily for peddling dietary supplements, is a ready example. Initiatives in disseminating the present state of knowledge about issues like cognitive development, learning, memory, reading, numerical ability, etc. with explicit mention of the wide gaps that exist in our understanding of the same would go a long way to clear things up. Funding agencies and the powers-to-be in India might do well to create a more shining example of pursuit of knowledge, as India ‘arrives’ in the neuroscience panorama.

-
1. *Nature*, 2005, **435**, 1156–1158.
 2. Grunbaum, A., *Z. Philos. Forsch.*, 1977, **31**, 333–533.
-

GARGA CHATTERJEE

78, Chetla Road,
Dipanwita, W-1/5,
Kolkata 700 027, India
e-mail: drgarga@gmail.com

IndCollections: biological specimens in Indian collections

Specimens housed in the natural history collections across the world are the fundamental underpinnings of all biological information. They are time capsules to analyse conditions from the past and compare them with our present-day state of affairs. This information provides baseline data against which biological variations and environmental changes can be measured. Therefore, collections are absolutely essential to biodiversity research and education¹.

India, which is one of the megadiversity countries, harbours rich floral and faunal diversity. Several government agencies such as Zoological Survey of India, Botanical Survey of India, Forest Survey of India and academic institutions, universities, as well as non-governmental organizations

are involved in floristic and faunal surveys². Majority of these agencies also maintain biological collections. It is estimated that over 200 herbariums, 100 zoological collections, and 40 microorganism collections spread across the country together house more than 10–15 million specimens¹. However, due to changing trends in biological sciences coupled with unavailability of sufficient funds, majority of these collections are experiencing survival crisis.

Though this applies to the collections both from developed and developing as well as under-developed regions of the world, the collection community in developed regions has put its hands together to overcome the crisis by adopting newer tools and techniques offered by information and communication technologies. In or-

der to secure increasing resources, these museums are ensuring wider visibility to the data associated with the specimens that they house by releasing them in public domain through the net. Some of these regional initiatives include ENBI³, BioCASE⁵, Species Analyst⁶, and ENHSIN⁷. These initiatives together with the Global Biodiversity Information Facility (GBIF)⁸, ensure that data associated with specimens from other regions of the world are shared with the countries of their origin. GBIF alone is able to pull together over 74,000,000 specimen records from 533 collections⁸. There is a rich promise for novel research and conservation results based on natural history collections data. Further, the data can be integrated into other research programmes that are trying