

The third un-culture

The editorial 'The Third Culture' (*Curr. Sci.*, 2001, **80**, 1361–1362) is likely to be misconceived as anti-commerce, anti-computer and with an IT-hatred, just as C. P. Snow's righteous anger against the hollow egoism of literary culture was wrongly attacked in the 1960s of England. True, Snow, being himself a litterateur, denigrated literature and literary intellectuals as goalless, non-serious, inconsistent with an imbecile attitude of tradition. Poverty, hunger, disease and deprivation of peoples were only considered as thematic variations for these self-conceived literary 'intellectuals', and not treated as forms of human agony to be eradicated. 'Only exception were writers from Russia and China', Snow contended in his Rede lecture. It was only science and scientific culture that had engaged itself for the emancipation of mankind with its brilliant discoveries, developmental projects and material production.

And the so-called first-culturists dare say that 'Shakespeare is more relevant and needed than the second law of thermodynamics'. It is at this recklessness that Snow got wild and called the literary intellectuals virtual 'Luddites'. The counter attack that followed in *Spectator* by Leavis and others was vile and venomous, labelling Snow as stupid and a stooge of Russia and China, ignorant and infamous. The attack went unabated until stalwart thinkers like Bertrand Russell interfered (in a letter to *Spectator*, which spearheaded the attack on Snow) and suggested that literature stands not on par with scientific action.

The present editorial, which drew a parallel between the traditional block-headedness of the literary intellectuals of England in 1960s and the mercantile craze of cyber-hardnuts in the field of IT in India deserves the attention of scientists, science-philosophers and social thinkers.

Should a Clinton tell us that our priority should be on protected water, universal education and rural-health and not on cyber-towers? What a fuss about IT in a country with no information about Veerappans and Sakhi-peelers, with much less 'information' about the devastating earthquakes rocking the country? But the management-commerce-computer trio has already begun to parade in campuses as the leading light of the nation, with a lodestar pointing towards US immigration. For students, researchers and prospective scientists, all other courses in basic and applied sciences are relegated to an inferior status. This is the third un-culture which is spreading like a virus in our academic milieu.

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Role of science in higher education

The word 'science' expresses the thrust and wonder of the world. In this article, I would like to express my opinion about the role of science in higher education. Education is a life-long dynamic process and it helps to develop any nation through the development of its people. Development of a nation is mainly based on the advancement of science and technology. Science education is needed to develop basic knowledge and innovative ideas among the students.

Higher education should be under the control of science and technology and it must provide basic skills for a job or advanced training. Science is shaping our world, but most of us are completing our higher education without any major contribution from science. There should be a better interaction between science and other fields, i.e. science must be popularized and well-focused. For example, a commerce graduate must know about the functions of calculators and computers,

which come under the purview of science. A historian must be familiar with archaeology, dating techniques, etc. Even a literature student must be acquainted with syntactic tools and algorithms, as advocated by Noam Chomsky.

In recent years, the number of students opting for pure sciences is very less when compared to other courses like engineering, medicine, etc. The quality of students seeking admission to pure sciences has deteriorated over the years. This, in turn, will affect scientific research, which is the backbone of technology. The development of science and technology is not only confined to science graduates but also to engineering graduates. Without basic knowledge of sciences we cannot create engineers or technologists, since science and technology go hand in hand. Students must be encouraged and guided to pursue higher education in the field of science and technology, for a secure and comfortable career.

Engineering is nothing but applied sciences; subjects like physics, chemistry and mathematics must be taught in addition to engineering subjects in the curriculum. For proper understanding of engineering subjects, sound knowledge of basic sciences is necessary. The syllabi of various engineering courses should have relevant science subjects according to the basic requirements. The need for science subjects in the engineering/technical education is well-accepted by major universities around the world. Engineering students must pursue their projects and other co-curricular activities with the adventure of science and technology. We must encourage them, by introducing value-based science subjects in their curriculum.

Curriculum plays an important role in deciding the quality of higher education. To improve the quality of science in higher education, we have to realize the need for value-based science subjects and

their impact on higher education. Increasing the number of colleges alone cannot help to improve the quality of science education. Science subjects and industry-oriented programmes must be updated from time to time. But most of the universities have old syllabi with minor modifications and if they feel that the subject is outdated, they introduce new IT (information technology) subjects instead of science subjects. This attitude must be shunned and latest science subjects must be introduced according to the requirement of the new era. Personal conflicts should not be reflected in the syllabi.

Nowadays we are producing a large number of IT graduates, rather than science graduates. Though this is good in some respects, mushrooming growth will produce a large number of unemployed graduates, rather than IT professionals. Most of the technical discoveries have been made by scientists. Hence the opportunities for studying science in technical education should be increased. Universities and other educational institutions must accept the responsibility of bringing out new syllabi, which will meet the global requirement.

Science should be popularized in two ways. One, by introducing value-based and industry-oriented programmes. Two, by government support in the form of funds and sanction of more science projects. Hence both government and private educational charitable trusts must take necessary action to bring about a revolution in science education.

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Mad cow disease – A timely warning

Amidst all the hype and furore over the UGC and Vedic astrology controversy, a grave and important warning given by Jacob John from the Kerala State Institute of Virology and Infectious Diseases (*Curr. Sci.*, 2001, **80**, 1090) on the possibility of bovine spongiform encephalopathy (BSE), or mad cow disease-infected cattle having already entered India, needs to be noted. Ignoring this would be at our own peril. Given the extent of apathy among our scientific community on important issues like this (didn't we all sleep blissfully while UGC was already getting its circular ready), we will most likely prevaricate until a few million cattle die here or a few thousand humans contract the variant form of the rogue protein-induced disease called vCJD (variant

Creutzfeldt Jacob disease). On the other hand, almost every issue of *Nature* or *Science* has an article on the spectre of BSE stalking continental Europe. Countries that 'had judged themselves BSE-free have been shocked out of their complacency' (*Nature*, 2001, **409**, 658–659). The same article goes on to warn public that, 'No one knows whether the diagnostic tests being used to search for BSE infection in Europe's cattle can reliably detect animals incubating the disease'. I was rather amused by a more recent issue of *Nature* discussing the resolution passed at the 1 January 2001 meeting of the European Commission as a package of measures to combat BSE. (i) Complete ban on the use of mammalian meat and bone meal for all livestock. (ii) Removal

of bovine intestine from food chain. To the poor farmer in India, using mammalian meat to feed his herbivorous cattle would be an act of 'sacrilege', an 'unthinkable distortion of the mind'. Let scientists, administrators of science and policy makers remember this the next time we go overboard on accepting everything coming from the 'Western world', be it GM food, golden rice or the mandatory CFC certificate for refrigerators and freezers.

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The Vedic astrology controversy

I have no particular position in this controversy nor is it necessary. What you believe is really your own prerogative. Does it hurt others? That is the question.

The debate has the ridiculous and the sublime sides, which require equal attention.

The ridiculous: Everybody knows why UGC started this. We are not talking about rational approaches, but of platforms (of government) and of mindsets (of ourselves) in all these. 'Indian vs foreign' evokes many chords, some sympathetic and some antagonistic, in all

of us. What was suggested by some was a class action. St George raises again to slay the dragon of irrationality. Where is the damsel in distress?

1. Does it hurt science? No. It should be explicitly recognized that science has no