

## CAN SCIENCE RECREATE CULTURE ?

(Paul Gregorios)

In this birth centenary year of Jawaharlal Nehru, let me add my own humble tribute to a great statesman and world leader, whose policies have played a major role in the shaping the development of both culture and science in India in the last forty years.

As Arnold Taynbee said about Nehru, he "served his fellow-men most fruitfully and most characteristically by taking his place in a series of interpreters and mediators between the civilisation of the West and other living civilisations". It is that task of mediation and interpretation that has to continue through seminars like the present one. My present paper on Science and Culture is offered as foot-note to that ongoing mediation.

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1. A. B. Shah, ed. Jawaharlal Nehru, A Critical Tribute,  
Manaktalas, Bombay, 1965 P-31.

## 1. Clarifying Concepts

Both words, 'Culture' and 'Science' are used in so many different senses and with so much ambiguity that frustration faces attempts at definition. Let us begin by noting that both 'Culture' and 'Science' are abstract words. We need to bring them to some kind of less abstract, phenomenal base before we can begin to understand either term.

Attempts at defining culture have been numerous in the past. One readily calls to mind T. S. Eliot's Notes towards the Definition of Culture (1948) and George Steiner's Bluebeard's Castle: Notes towards the Redefinition of Culture(1971). Between these two appeared the Peabody Museum of American Archaeology and Ethnology Publication(Vol. 41,1, 1952) entitled Culture: A Critical Review of Concepts and Definitions. The Judgement of Raymond Williams remains valid: "Culture is one of the two or three most complicated words in the English language".<sup>2</sup>

What makes me worried is that ~~that~~ the classical languages do not have a word for culture in the sense we use it, e. g. when we speak of "Harappan Culture" or our "Cultural heritage". We mean by that latter term, the ensemble of material artifacts, symbol systems, value perceptions, ideas and beliefs, institutions, religions, scriptures, and rituals, handed over from generation to generation.

We have no word for it in Sanskrit or Greek. Speaking of Sanskrit, the very name of the language seems to indicate a 'cultured' language over against a more primitive ~~Prakrit~~ Prakrit.

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2. Raymond Williams: Keywords: A Vocabulary of culture and society, New York, 1976, P. 76.

In the Brahmanical texts Samskāra<sup>3</sup> is a technical term for the various purificatory sacramental rites which integrate one into the corpus of the faithful and into the 'whole', making one holy. It is of frequent occurrence in that sense in the Dharmasastras; it is quite understandable that our sense of culture as the ensemble of social creativity was not central to the more Vedantic texts, where our earthly creativity has little significance in relation to the realisation of the identity with the Absolute.

Neither do we find an equivalent for German Kultur or English 'culture' in the Greek. The closest term is Paideia. Plato uses this term, which literally means the bringing up of a child, ~~as~~ also for mental culture<sup>4</sup>. But Paideia refers to cultural refinement in a person, rather than to the ensemble of cultural creativity in a society-education rather than culture in the anthropological sense.

The situation in Latin is slightly better, because the English word culture has its roots in Latin Colo= to cultivate, to tend; Cultus= cultivated, polished, refined; and Cultura= cultivating, refinement. It is in this sense that Cicero says that cultura animi philosophia est.<sup>5</sup>

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3. Samskāra also refers to capacities like Vega or motion, bhāvana or feeling, memory and imagination and sthitisthāpakatva or a kind of inertia. Samskr̥ti means sacramental purification, part of Karmayōga.

4. Protagoras 327 D, Gorgias, 470 ~~✶~~.E

5. 'The cultivating of the soul is philosophy' Cicero, Tusculanae Disputationes 2, 13.

It is this elitist sense of culture as personal refinement that came into our languages as culture or samskr̥ti, Samsk̥āra; with the advent of anthropology as a discipline, the new meaning of ensemble of social creativity came into vogue.

The Pali equivalent Samk̥tiāra, meaning all the potentialities and possible forms of sentient experience, has<sup>a</sup> negative meaning, denoting predispositions formed from past experiences, as something to be overcome in order to attain enlightenment.

Let us conclude this etymological excursus at this point and make a few affirmations;

- a) Culture in the sense of ensemble of a Society's creativity is rather new in all our languages; it dates from the development of cultural anthropology as an academic discipline and (b) The distinction has to be constantly kept in mind between culture as the personal refinement of a person or an elite group and culture as the sum-total of social creativity.

Our concern in this paper is with the latter.

Equally difficult is the definition of Science. We could point to the three different senses of modern science as (a) an approach or method<sup>of</sup> gaining knowledge; (b) as a body of knowledge and (c) as a huge human enterprise, inseparable from <sup>technology</sup>~~archaeology~~, political economy and cultural creativity. We will in this paper be focussing<sup>on</sup> ~~as~~ the third meaning of science- as the Wissenschaftsindustrie.

I am aware of other distinctions about the meaning of Science. e.g. those offered by the Australian A.F. Chalmers in What is This Thing called Science ? 6

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6. University of Queensland Press, 1976, see pp. 98ff.

Chalmers distinguishes between: (a) the Subjectivist approach to science, as a set of operational beliefs and hypotheses held by ~~in~~ individual scientists, (b) the Consensus approach to science (Kuhn)<sup>7</sup> as the beliefs, theories and convictions accepted by the scientific community; and (c) the Objectivist approach (Popper)<sup>8</sup> which regards the scientific theories having an autonomous existence on their own, apart from any individual or consensus opinion.

We will leave that debate aside and concentrate on Science as a corporate social activity of competent human beings in relations to each other and to the so-called world of nature. It involves an enormous budget, a huge number of workers, and big technologically sophisticated laboratories like for example the underground particle accelerator of C E R N near Geneva, partly in Switzerland and partly in France, some seven Kilometers long and costing billions of dollars. It is this huge <sup>Complex</sup> behemoth that I call the Wissenschaftsindustrie or science industry, a most powerful social force.

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7. Thomas Kuhn, The Structure of Scientific Revolutions,  
University of Chicago Press, 1970.
  8. Karl R. Popper, Objective Knowledge, Oxford,  
Oxford University Press, 1972.

## The Role of Science in Culture

The enterprise called science industry is part of the political economy. If ~~Science~~ - ~~Technology~~ forms the main current of social creativity or of the forces of production, then political economy deals with the way that social creativity is organized, managed and controlled, i.e. the relations of production. This classical marxist distinction and relation between forces of production and relations of production can be easily oversimplified.

The Science industry ~~is~~ plays a role at both levels - i.e. in the development of science/technology as force of production and as a lobby and power unit in the political economy. In science-industry we include all research programmes of corporations, of universities and institutes, and of the defence establishments. Obviously these are also political actors influencing and in some cases controlling the political economy.

We have to posit a third level in social creativity or culture - the level of ideological orientation or value choices. Unlike the lower levels of science/technology (forces of production) and political economy (relations of production) this third level is less tangible and structured, but by no means less decisive in shaping a culture. The value choices are not unrelated to the question of where the controlling power is concentrated in a society. In a bourgeois-liberal society, the interests of the class in power would dominate the value choices of society. If loyalty and fidelity were high values in a <sup>u</sup>feudal society, efficiency, <sup>t</sup>punctuality and responsibility became high values in a production-oriented bourgeois society. In Socialist societies the elimination of private dissent may have been a high value once; social conformity thus became a desired value choice.

At the level of value choice it is not simply the interests of the ruling class that plays a decisive role; it is also the particular religion or secular ideology which plays an equally decisive role. In Socialist ideology as well as <sup>in</sup> the bourgeois-liberal ideology, the role of science is an important factor, since both these ideologies and modern science are children of the European Enlightenment. It may be more accurate to say that modern science is a foster-child of the European Enlightenment, because the child had already been born and was struggling for survival when the Enlightenment began in Europe and adopted modern science as <sup>a</sup> useful foster-child.

Socialism puts a high value on science as a primary motor for social change and social development. Science/technology not only enhances the forces of production and thus changes also the political economy or the relations of production. It acts also as a revolutionary force in overcoming the forces of stagnation and backwardness, in counteracting the reactionary forces of superstition and dead tradition.

Nehru recognized this social revolutionary dynamic of science/technology, particularly in a caste-ridden, tradition-bound society such as ours. Hence his emphasis on the 'scientific temper' as something to be infused into the whole of society, rather than merely into the scientific community. The expressions 'Scientific temper', 'Scientific ethos' and 'scientific culture' were coined in the ~~mid~~ early decades of our century, when Western societies nurtured a basic optimism about science and its capacity to solve all the problems of humanity. 'Scientific Culture' was almost regarded as an alternative to traditional 'humanistic culture'. Our own Indian debate some years ago between the advocates of the scientific temper

manifesto of some scientists, and partisans of the opposing humanist manifesto of Ashish Nandy and his friends pointed to this conflict.

That debate was left unresolved and did not proceed very far beyond mutual recriminations. We need to re-open that debate and pursue it with less partisan fervour. C. P. Snow, in his famous lecture on 'Two Cultures' also sought to drive a wedge between science and art as determinants of culture. It was mostly directed against the Marxist contention that the material conditions of the base (Science- technology and political economy) largely determine the content of the super-structure, where art and culture were supposed to be lodged.

Marxism itself made the mistake of regarding art as 'illustrative science' and an ideological instrument. Modern Marxism is moving out of this unrealistic, scientific <sup>stic</sup> ~~ific~~ understanding <sup>of</sup> art and culture, either as a direct product of conditions in the base, or as a mere instrument of a 'scientific' ideology. Recent marxist writer advocate ~~the~~ "the harmonious integration of scientific-technical and humanitarian culture, the peculiarities and social functions of each being fully retained", 9

The point was put more elaborately by the Soviet Philosopher Dr. Boris Grigoryan (of the Institute of Philosophy of the U S S R Academy of Sciences) at the 18th World Congress of Philosophy (Brighton, U.K. 1988) :

" Scientific knowledge is a powerful means of mastering nature, of accomplishing practical tasks needed for the reproduction of human life. But for all its enormous potentialities.... this knowledge is unable to elaborate the general principles and norms of human behaviour which determine the basic vital attitudes of man, his way of



life and the strategy of individual and social development"

If one accepts this principle that scientific knowledge is unable to elaborate the general principles and norms for human behaviour, we will need to revise our views of the 'Scientific temper' and a 'Scientific culture'.

Science can be only one element in the evolution of human culture and should not be allowed to dominate culture, since it is intrinsically incapable of giving decisive orientation to human socio-cultural development. It is at this point necessary to stress the simple fact that scientism is a superstition, which must be counter-acted with the utmost vigour.

This can be done only by putting science in its place- as important operational knowledge, but no more. The mystique of science as omniscient and omni-competent must be dispelled if humanity is to survive. Just as the power of pseudo-religion was broken by the Renaissance, the Reformation and the Enlightenment in Europe, it is time for us, in this bicentennial year of the French Revolution, to dethrone science from the apex of culture, to emancipate science from its bondage to war and profit, and re-deploy it as an instrument of justice and peace, and of maintaining of the life-fostering quality of our environment.

There are at least two ways <sup>of</sup> ~~in which this~~ putting science in its place, not as authority over humanity, but as its faithful servant and often as its loving critic. The first is to promote the other aspects of human cultural creativity/- poetry and literature, art and music, dance and drama, film and TV/- in order to raise again in a fresh way the questions about orientation for human development, and not merely <sup>as</sup> entertainment and enjoyment. This implies that just as

the science industry is to be emancipated from its enslavement to war, profit and power-seeking, the culture-industry has also to be emancipated from bondage to the same <sup>p</sup>ressive forces. This is not to make art instrumental, but to restore it to its true function as an expression of fundamental human perceptions of reality and of fundamental human aspirations for fulfillment. These cannot be done in a conceptual<sup>ual</sup> - rational form, though the conceptual-rational as art criticism will still have an important part ~~to~~ to play.

For me this means primarily a new consciousness among the creators of culture, which always includes not only the professionals of art and art criticism, but also the common people to whom art is addressed and for whom true art exists.

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9. A. Ya. Zis: "On the ~~Q~~uestion of Correlation between the Structures of Philosophical and Artistic Thought", in Marxist-Leninist Aesthetic and ~~A~~ The Arts, Progress Publishers, Moscow, 1980, p. 118
10. U S S R Academy of Sciences, The Problem of Man in Philosophy, "Social Sciences Today" Editorial Board, Moscow, 1988 P. 142.

This triple liberation<sup>/</sup> of science-<sup>^</sup> technology, political econo  
and artistic creativity<sup>/</sup> from enslavement to war, profit and  
power-<sup>^</sup> mongering seems to me the only way to make culture healthy  
and life-fost<sup>e</sup>ring. All three power<sup>^</sup> - groupings must enter into  
a new dialogue, about human perceptions of reality and orientations  
for human development. They must ask afresh and in dialogue with ea  
other questions about the meaning of their own activity in the  
context of the present human predicament, and provide their own  
answers, also in dialogue, through their own media<sup>/</sup> new theoretical  
formulations and new technologies, fresh structurings of political  
economic power and creativity, and more humanity-oriented artistic  
and cultural creativity and criticism.

I do not have time here to further develop this notion of  
triple liberation and three-<sup>^</sup> ~~XXXXX~~ <sup>✓n</sup> covered dialogue in the interest  
of the whole of humanity, and all life and all existence. I have  
to conclude with a word about the second way of

putting science in its place, in the interest of making science itself serve human development and cultural creativity. I wish to say a word about 'religion', not because I am myself 'religious', but because I care about humanity and its ~~to~~ healing.

Religion ruled the ~~roost~~ <sup>Roman</sup> in Europe in the medieval period. The <sup>n</sup> Papacy took over the role of the ~~Empire~~ Roman Emperor in uniting the West. Through the development of a clerical cadre which functioned as a civil service (and sometimes as army), a <sup>ecclesiastical</sup> corpus of canon law taking the place of <sup>Roman</sup> civil law, and a body of precise dogmas as the expression of inviolable truth, ~~the~~ Roman Catholic popes like Leo I (died 461) Gregory I (ca 540-604) and Innocent III (1160-1216) managed to make the Roman Church's authority superior to everything else. <sup>European</sup> Kings trembled before Rome's 'spiritual' as well as civil-political authority exercised through the so-called 'spiritual' authority. Rome's theology dominated all European thought. 'Roma locuta est, causa finita est' (Rome has spoken, the matter is ~~finished~~ <sup>ended</sup>).

It is this authority of Rome that was gradually overthrown by the Renaissance, the Reformation and the Enlightenment; modern

Science came in to occupy the vacuum left by the church's dethronement. In this twentieth century European civilisation moved to the position: "scientia locuta est, causa finita est" (science has spoken, the matter is ended).

This enthronement of modern science on the world's imperial throne does not work in the interests of humanity. Science's place is not on the throne, but in the fields of labour. Emancipated from its throne and from its simultaneous bondage to the real occupants of the top of the power-pyramid (~~war, profit, power~~ those promoting war and militarism, pursuing profit and expanding their own power), science/technology can be an extremely efficient and necessary servant of humanity.

But it cannot be allowed to dominate culture. Science cannot recreate culture. Science-technology is already alienated from the people; and its run-away structures of domination — over people's minds, their daily activities, over politics and economics and over the science-industry and the culture-industry as well as over the academy — will have to be dismantled and new structures established. Science will have to accept its place along with art and literature as human activities and expressions

Religion has <sup>long ago</sup> been dethroned - not only from over-all imperial power, but from political-economic institutions, ~~and~~ from philosophy and from the academy. It cannot be re-enthroned, <sup>as some fundamentalists hope.</sup> But the civic rights of religions have to be re-recognized, and religious groups have to be re-trained to accept their civic responsibilities. Religions <sup>teachings</sup> must have at least as much place in society as secular ideologies.

Here in Asia, as also elsewhere, religion has been the matrix of all culture. We in Asia have a particular task. Our religious heritage is immensely rich and varied, but our educated elite has little access to it. We are heavily under the influence of European civilization and culture; so much so that western educated, <sup>Asian</sup> people are often psychologically ill fitted to respond ~~to the~~ positively to their own cultural heritage.

The world needs at this juncture a contribution from the various Asian cultures to balance the one-sided, <sup>European</sup> focus on the 'external' world and so-called 'objective' knowledge. The world is neither external to us, nor are we external to it. We are integral parts of the world with a capacity to transcend and to transform that world. That is what culture really means - transformation of

the human self and the world, in order that humanity-in-the-world expresses higher realms of meaning, both transcendental meaning and meaning within historical social existence.

Asian religions at present seem incapable of doing this self-and-world transformation in a creative way, drawing upon the immense wealth of Asia's cultural-religious heritage. Science-technology can be a very useful and powerful instrument in that transformation, but cannot provide the orientation for cultural creativity. The Asian religious-cultural-philosophical heritage when adequately absorbed, can create a new orientation for cultural creativity. That is the challenge before us. Science-technology can properly transform human culture, only when the orientation for such transformation comes from outside modern science-technology. A major source for such orientation lies to hand in our own cultural heritage, which we have so sadly neglected.