Committee II
Ethnocentrism vs. World Unity:
Impacts on Socialization and
Education

DRAFT - 11/15/88
For Conference Distribution Only

ARE SCIENCE AND ETHNOCENTRISM COMPATIBLE?

by

Nicholas Kurti
Professor of Physics, Emeritus
University of Oxford
Oxford, ENGLAND

The Seventeenth International Conference on the Unity of the Sciences
Los Angeles, California November 24-27, 1988

Committee II

Ethnocentrism vs. World Unity:

Impacts on Socialization and

Education

ARE SCIENCE AND ETHNOCENTRISM COMPATIBLE?

by

Nicholas Kurti

Professor of Physics, Emeritus

University of Oxford

Oxford, ENGLAND

The Seventeenth International Conference on the Unity of the Sciences

Los Angeles, California November 24-27, 1988

<MI>ARE SCIENCE AND ETHNOCENTRISM COMPATIBLE?<D>

<MI>Introduction.<D>

To explain the nature and the extent of this paper I must recall its origin and discuss its title.

It was during ICUS XVI in Atlanta that the Co-chairmen of the Committee, Drs. Kozma and Schleicher, told me about their plans and showed me an outline of the programme. I was fascinated by it but, at the same time, I doubted whether I could be useful except as a discussant.

It seemed to me that <169>ethnocentrism,<170> whatever definition one may use, is alien to the objectivity of the natural sciences. On the other hand, national, even religious and racial characteristics may, and often do, influence the attitude ~~xx~~ to science, may engender preferences to some disciplines at the expense of others, may govern the ways in which science is taught and used.

We need only look at the 40 kms. divide of the English channel. Britain and its vast empire was, on the whole, ruled by public servants who were steeped in the classical tradition (Greek and Latin Languages, history, literature and philosophy) while in France it was mainly the <169>Anciens Elèves de l'Ecole Polytechnique<170> who occupied the top positions in public life. One could debate which of these two preparations was more appropriate for the tasks to be performed and one might be tempted to say neither. Yet the results were usually creditable, largely because <169>Greats<170> in Oxford and the Polytechnique in Paris selected the best brains from a large reserve of bright young people.

When, early in January 1988, I was asked whether I would be willing to be the discussant of a proposed paper on <169>Beyond ethnocentrism: the impact of technology<170> I gladly accepted, especially since this also provided an opportunity to give the scientists' views during the Committee's discussions.

When I visited Dr. Kozma early in April he asked me whether, because of some changes in the plans, I could write a paper on the influence of ethnocentrism on science I repeated the objections I raised a few months earlier and I strongly doubted that I could write 8000-10000 words on a topic which to me seemed non-existent. However, I was defeated by Dr. Kozma's persuasive eloquence and, much against my better judgment, I accepted the challenge.

<MI><169>Science,<170> <169>Ethnocentrism.<170><D>

My first task was to get a clear idea about the meaning of these two words.

ICUS is the acronym for <169>International Conference on the Unity of Sciences<170> and it is obvious from the aims of these meetings that the word science is meant to encompass all branches or disciplines of knowledge, all manifestations of the human intellect. In fact the word is used in the sense of the German <169>Wissenschaft,<170> the Russian <169>nauk,<170> the Dutch <169>Wetenschap<170> or the Hungarian <169>Tudomány,<170> and the German acronym of these conferences would be IKEW (Internationale Konferenz <129>ber die Einigkeit der Wissenschaften<170>). It is a great pity that the English language does not have a comprehensive term like <169>Wissenschaft.<170> It is interesting

to note that the Royal Society which is responsible for the <169>sciences<170> (in the narrow sense, i.e. physics, chemistry, biology, physiology, geology etc. mathematics and engineering) has for its full name <169>The Royal Society of London for <MI>Improving Natural Knowledge.<D><170> This is the translation of its name given in its second charter as <169>pro scientia naturali promotenda,<170> from which it appears that in the 17th century the Latin <169>scientia<170> covered <MI>all<D> learning or knowledge. Hence the qualifying adjective <169>naturalis.<170> However, I shall use <169>science<170> in the restricted sense and follow the advice of Robert Hooke's <169>Design for the Royal Society<170> and not <169><193>meddle with Divinity, Metaphysics, Moralls, Politicks, Grammar, Rhetoric and Logick<170> and other similar disciplines such as economics, sociology, history etc.

I now come to the word <169>ethnocentrism.<170>[1] I was fascinated by the subtle changes its meaning has undergone during the 90 years of its existence. According to the Supplement to the Oxford English Dictionary it was first used by W.G. Sumner in 1907 (see also the paper by Bernardi) who stated that ethnocentrism is the

---

[1] According to the Oxford English Dictionary the word was first used in 1900, albeit in a somewhat different sense. W.J. McGee, in the Annual Report of the Bureau of American Anthropology, wrote <169>In primitive cultures the epocentric and ethnocentric views are ever-present and always-dominant factors of both mentalism and action.<170> Here the expression serves to contrast social relations with language in governing the behaviour of an individual.

technical term for the view of things in which one's own group is the centre of everything and all others are scaled and rated with reference to it. This is a neutral, objective definition which, however, since then seems to have acquired an emotive meaning. Thus, the actual definition in the OED is <169>Regarding one's own race or ethnic group as of supreme importance,<170> and the American Heritage Dictionary definition <169>Belief in the superiority of one's own ethnic group<170> goes even further. Yet another meaning which, however, need not concern us, appeared recently in M. Critchley's <169>Developmental Dislexia<170> (1964). <169>The age at which a child normally begins to read with facility is also the age at which he turns from autistic, egocentric to a societal, ethnocentric being.<170>

One must ask whether in discussing science one should not endow ethnocentrism with a wider meaning. One's own race or ethnic group is indeed of supreme importance in the study of humanities, or at least, of many of the disciplines covered by that term. To discuss language without reference to the <MI>ethnos<D> would be as absurd as the study of botany without reference to plants and their environment, or astronomy without looking at the sky. However, human attributes, which form an essential part of the concept of <MI>ethnos<D> play no role in the laws of nature and in their manifestations. The results of an experiment carried out at the European Organisation for Nuclear Research (CERN) in Geneva by a team of 70 or 80 scientists or engineers will not

depend on the racial composition of the team. Even the interpretation of the results will be unaffected by the racial characteristics of the leaders of the team.

If racial or tribal attributes do not affect scientific laws the same is not true when one considers the <MI>attitudes<D> to science, the predilections for one discipline or another, the ways of approaching and solving the problems and the methods of teaching science. While such influences do sometimes stem from social or tribal emotions or beliefs they are more often governed by religion, by nationalism, by ideologies or even by the social structure. I shall therefore widen the scope of this enquiry and shall consider more generally how attributes based on types of groupings other than <MI>ethnos<D> can influence the development of some branches of science. Since these groupings are, in common with <MI>ethnos, external<D> to science<197>as defined here<197>one might be tempted to coin the word exocentrism for it. I mention this so as to discard it immediately and emphatically since there is no need for it. I am opposed to cluttering the language with technical terms denoting concepts of an ephemeral nature.

<MI>Religion and Science.<D>

Any religion based on or governed by dogmas is inimical to free

and unfettered enquiry and consequently harmful to science. The case of the Roman Catholic Church's absolute opposition to the Copernican view and strict belief in Ptolemy's geocentric conception of the sun and the planets resulted in Galileo's being judged and harshly sentenced by the Inquisition. But that was a long time ago, in the 16th century, and I believe that interference with science on such grounds is very sporadic nowadays and of no great importance. Nevertheless the following episode is a good illustration of the power of religious commands or prohibitions. A philosopher friend of mine instructed his family that his tombstone should bear the simple inscription: <169>Dubito ergo sum.<170> This saying of Descartes is less well known than his <169>Cogito ergo sum,<170> even though the former saying is a telling expression of the basic tenet of Descartes' philosophy, namely <169>Cartesian doubt.<170> However, the Anglican Vicar forbade the display of such an offensive inscription in the churchyard under his guardianship. Was this an isolated case of exaggerated zeal and would a Roman Catholic priest have felt likewise?

Religious fundamentalism on the other hand has had, and still has, a pernicious influence on the teaching and the development of certain branches of science. Physics, chemistry, meteorology, engineering are relatively little at risk since the detailed, analytical investigations which characterize these disciplines are not prominent in the written origins of the great religions.

This is not so for anything connected with <169>creation,<170> be it of the universe or our world and environment, or the development of life. Hence the pathological preoccupation of the Christian fundamentalists with modern theories of evolution, e.g. the <MI>unscientific<D> attack on Darwin's theory because it contradicted the story given in the Old Testament. Fortunately the influence of the <169>Bible-belt<170> in the southern States of the USA has lost in importance but it is interesting to note that every time new evidence leads to a reappraisal of the theory of evolution it is hailed as a vindication of the fundamentalists' campaign.

Religious interference with cosmology is less pronounced. This may be due to the fact that the time-scale and the result of the creation as described in Genesis are so vastly different from what scientific evidence tells us that even the most devoted fundamentalists find it unprofitable to defend the Old Testament version as the absolute truth. Anyway, without claiming prescience or omniscience for the author(s) of Genesis, the Old Testament version of the creation of the world might be regarded as a poetic version of the Big Band. This is shown in the following table: 9

<MI>t(time)<D> <MI>The State of the Universe<D>

t=-	Genesis 1.1 <169>In the beginning God created the Heavens and the Earth.<170>
t negative (B.B.B.: Before Big Bang)	Genesis 1.2.<169>And the earth was without form and void and darkness was upon the face of the deep. And the spirit of God moved upon the face of the waters.<170>
t=0 (The Big Bang)	Genesis 1.3.<169>And God said let there be light : and there was light.<170>
t positive (A.B.B.,After Big Bang)	Modern cosmology takes over from Old Testament poetry.

The problem which confronts scientists in how to cope with pseudo-scientific arguments fired by religious faith and fervour. Perhaps the above example taken from cosmology could serve as a model: treat the fundamentalist approach as a permissible analogy of the scientist's view.

Occasionally rigid adherence to religious laws can actually

benefit technology by stimulating development which would make it easier to circumvent tiresome restrictions. Take as an example the observance of the Sabbath by observant Jews: Lighting a candle or an oil lamp is not allowed on the Sabbath. Since an electric lamp is a substitute for a candle flicking an electric switch is not allowed. Hence the use of time switches which, with the advent of computers, are making the observance of the Sabbath less irksome than heretofore. I know of one distinguished scientist who, on settling in Israel, gave up a brilliant career in basic research to use his knowledge and skill to develop suitable gadgets. Even worse he has engaged in sterile speculation on whether, and if so how an observant orthodox Jew could engage in space missions, since sunset and sunrise lose their meanings in interplanetary space.

However it seems that modern technology cannot overcome all the difficulties. I was surprised that while one could get piping hot coffee in the hotel in Jerusalem on the Sabbath, toast was unobtainable. There seems to be no difference in principle between an electric lamp and an electric toaster yet the use of the first is permissible on the Sabbath but of the second is forbidden.

The development of the physical sciences<197>i.e. physics, chemistry, astronomy, cosmology, the earth sciences, does not seem to be strongly affected by the tenets of organised religion.

touch on the argument about the maximum age at which the abortion of an embryo should legally be permissible<197>upper limits of between 16 weeks and 28 weeks are being considered. These seem to be defensible and so is the question of when a foetus is capable of life outside the womb. Moves to give legal force to the 6th Commandment in this case are understandable, but when<169>Thou shalt not kill<170>is adduced to forbid experiments on a fertilized human ovum in its early stages of development the interpretation of the Mosaic law borders on the ludicrous. The attitude of those who attempt to prohibit by law experimentation on 8-cell or 16-cell<169>embryos<170>which would be of great scientific value is hypocritical because the very same people, members of organized religions, seem to condone, or even bless, wholesale massacres in war time.

The reaction to the scientific results about the age of the<169>Turin shroud<170>represent yet another example of the possible conflict between religious faith and scientific objectivity. The Turin shroud is a strip of linen about 1m wide and 4m long with the face of a bearded man imprinted on it. It was regarded for many centuries as the burial cloth of Jesus and as such was revered as an important relic. However, doubts were expressed about its authenticity and these could not be settled until the radioactive carbon dating techniques were sufficiently refined to permit tests to be carried out on tiny pieces of material measuring about 10mm across. The tests carried out

indepently from each other in 3 laboratories in Oxford, Tucson (Arizona) and Zurich respectively have shown with a 95% certainty that the shroud dates from between 1260 and 1390 AD and is thus a medieval fake. The likelihood of its being the burial cloth of Jesus is well below one in a million.

At the time of the writing of this article (middle of October 1988) no authoritative view about the result has been pronounced. The Cardinal Archbishop of Turin has accepted the scientists' finding that the shroud is a medieval fake and pointed out that the Church had never claimed that the shroud represented Jesus but that, having been venerated for centuries by the faithful, the shroud will probably remain an honoured relic in spite of the new scientific evidence. On the other hand there are those who, while not doubting the scientists' integrity and skill, were reluctant to accept the verdict that the cloth could not be the burial shroud of Jesus. Others now want the scientists to answer a question which was never asked, namely the origin of the imprint on the shroud and details of its chemical nature. This seems to be a safe question to ask because it would necessitate experimenting on the central and deeply revered portion of the shroud and this is unlikely to be permitted. Another argument of the doubters is directed at the scientists' reluctance to say with <MI>absolute<D> certainty that the material of the shroud could not be 2000 years old. For the scientist a 99.9999% likelihood is virtual certainty but for someone who has an

unshakeable belief in the genuineness of the shroud the one part in a million uncertainty is enough to destroy the scientists' credibility.

What the story of the Turin Shroud seems to show is that there are instances where the gulf between the findings of scientific experiments and deeply held religious beliefs are unbridgeable. But should one attempt to bridge it always, irrespective of the circumstances? Most scientists would say <169>yes<170> because they find it difficult to tolerate beliefs which contradict scientific evidence or which can be proved scientifically to be wrong. I would agree when beliefs based on fraud are harmful to the community but the Turin shroud is not in the category. So far as I know no healing powers are attributed to it, so its existence does not discourage the faithful from seeking medical help, no money has been obtained under false pretences nor has the result any historical importance. I believe that it would have been better not to embark on these lengthy and expensive investigations and I wonder whether those engaged in the work agree with me in view of the fact that declaring an honoured relic a fake is bound to create in some religious people animosity against science. I regard it as important that scientists should show tolerance and be ready to admit that for some people and in some circumstances religious beliefs transcend scientific objectivity.

<MI>Ideology and Science.<D>

I shall discuss two famous, or rather<169>infamous<170>20th century examples of the influence of ideology on the development and the practice of two scientific disciplines in two European countries. They are both well-known: one is the banning of<169>Jüdische Physik<170>(Jewish physics) under Hitler in Germany between 1933 and 1945 and the other<169>Lysenkoism<170>in the USSR under and after Stalin between 1925 and 1955.

The suppression of<169>Jewish Physics<170>in Nazi Germany was one of the many manifestations of the racist anti-Jewish attitudes and legislation under Hitler. It was particularly directed against the theory of relativity which, having been introduced and developed by Einstein, a Jew, was deemed to be wrong and its study and application were regarded as incompatible with the practice of Aryan German Physics. Two of the most important protagonists of this movement were the physicists P. Lenard and J. Stark, both of them Nobel Laureates. However the effect of the antics of Lenard and Stark on physics in Germany was small compared with that inflicted by the exodus of Jewish or politically left-of-centre scientists.

It will be interesting to examine whether the post-war sporadic anti-Einstein, anti-relativity skirmishes, often by serious scientists with no anti-semitic bias are, however tenuously,

connected with the Lenard-Stark movement. It happens occasionally that crazy ideas, after lying dormant for several years, reappear in a more acceptable form or stimulate further critical thinking on some far from simple concept.

The Lysenko affair is in an entirely different category. It had its origins in some practical research on plant growth carried out in the 1920s by the Soviet botanist T.D. Lysenko. He developed a process termed by him<169>vernalization<170>which had for its aim to control the time of flowering of plants (mainly cereals) by treatment of the germinating seeds usually by exposing them to low temperatures and soaking them. The successes of<169>vernalization,<170>sometimes real, sometimes imagined, led Lysenko to adopt Lamarck's ideas of heredity and to the belief that acquired characteristics rapidly find their way into the genetic material, and to the abandonment of Mendelism. By political manoeuvring he managed to silence his opponents and as a result by about 1948 his ideas dominated Soviet genetics to the extent that<169>chromosome<170>and<169>gene<170>became almost taboo words. Lysenkoism, i.e. the iron rule of a dictatorial government over science, had an effect on the attitude of scientists all over the world to the USSR and to communism. Thus the distinguished British geneticist J.B.S. Haldane severed his connexion with the Communist Party of which he had been a member for 10 years because of Lysenko's views on heredity. The end of Lysenkoism came in 1964 and was heralded in by a meeting of the

USSR Academy of Sciences in June of that year when two of Lysenko's ardent supporters failed to be elected. The case of N.Y. Nuzhdin is particularly telling since, being a corresponding member, his promotion to full membership would have been under normal circumstances almost automatic. Moreover he was proposed by the Biological Section of the Academy and it had never happened that the election of a candidate proposed by his section was not confirmed by the Academy's General Meeting. There was however strong opposition from other Sections of the Academy and the forthright condemnation by the physicist A.D. Sakharov is worth quoting:<169>...I call on all those present to vote so that the only<169>Ayes<170>will be by those who, together with Nuzhdin, together with Lysenko, bear the responsibility for the infamous, painful pages in the development of Soviet Science which fortunately are now coming to an end.<170>Nuzhdin was rejected by a majority of nearly 6 to 1.

In october 1964 Kruschev, who had supported Lysenko all along, was relieved of his post as First Secretary of the Central Executive Committee of the Communist Party (the Politbureau) and in January 1965 Lysenko was dismissed as Director of the Academy's Institute of Genetics and in June of the same year nearly a hundred Soviet geneticists attended the celebration in Brno of the hundredth anniversary of Mendel's first communication. And that was a fitting end to a shabby chapter in the history of Soviet science which showed with painful clarity

how ideological fervour and political domination can retard and even arrest the work in an important field of science for a whole generation.

<MI>SCIENCE and NATIONALISM.<D>

As I said at the beginning of this article true science, its results, its laws and, to a large extent, its interpretation are independent of race, religion, ideologies or nationality. A historical event, an economic prediction, a piece of literary criticism is never as objective as the treatment of a scientific problem. Or, to put it more crudely, emotion, sentiments, personal prejudices or preferences which can, and often do, play a role in the pursuit of the humanities are absent in scientific enquiry. This does not mean that subjective human attributes have no place in the practice of science. The thrill of discovering something new, the satisfaction of seeing a prediction come true, the aesthetic pleasure given by an elegantly drawn conclusion from the results of an experiment are important ingredients of the make-up of a scientist<197>they are usually the driving force behind scientific activities. But, unlike in the humanities, they do not affect the results.

However, the attitude to various scientific disciplines, the way science is taught, the place of science in culture are subject to individual or social or national preferences and are liable to

changes with time. Thus, for instance, modern, or rather 20th century theoretical physics, especially quantum mechanics, although based mainly on de Broglie's ideas, grew and came to fruition in Central Europe and in Britain: the way physics was taught in France both in its Universities and its‹169›grandes Ecoles‹170›did not provide a fertile ground for its development. On the other hand by the 1950s and '60s as more attention was being paid in France to‹169›modern‹170›physics, those differences diminished.

Quite generally national differences in the education of scientists are becoming less and less pronounced for two obvious and connected reasons: 1) It may sound pompous but‹169›Science knows no frontiers‹170›and, aided by the fact that English is becoming the `lingua franca' of science and technology, scientists of different countries can communicate with each other more easily; 2)scientists are becoming increasingly mobile and often spend long periods or even settle in foreign countries. Moreover there are many schemes for student, teacher and researcher exchanges. All this has brought about the setting of general standards in curricula and attainments and a less variable attitude to postgraduate work and research.

Large international research centres, close collaboration between research groups in laboratories of different countries have further contributed to breaking down frontiers as far as science

is concerned. Also learned societies and academies are in the vanguard of activities to facilitate the free movement of scientists and scholars between countries.

Because the scientific community is truly international, because scientists, especially those in universities, are mostly free of governmental constraints, they seem to be well qualified to discuss on an international scale scientific questions of political relevance. A good example of such activities is provided by the<169>Pugwash<170>conferences started some 30 years ago. They bring together scientists from both<169>West<170>and<169>East<170>to discuss scientific aspects of defence, armaments, disarmament, most particularly relating to nuclear warfare, and during the<169>Cold War<170>they were probably the only forum at which such matters could be discussed relatively free of government controls.

Whenever scientists of different nationalities confer about politically sensitive matters doubts may arise about the extent to which scientific objectivity might be influenced by patriotism, loyalty to one's country and, in the worst case, by pressure from one's government. Such things are likely to happen but before passing judgment one should look at the statements issued from such meetings and not rely on second or third hand reports.

About 15 years ago, at the time of the early French nuclear tests in the South Pacific, there was concern in Australia and in New Zealand about the possible harmful effects of those tests on the inhabitants of these countries. A committee consisting of 4 Australian and 4 French scientists was set up under the auspices of the Australian Academy of Sciences which met for 2 days in 1973. When I read the, admittedly brief, newspaper reports about the committee's findings it seemed that contrary conclusions were drawn by the Australian and the French contingents. This was very upsetting because it meant that the opinions of a group of reputedly honest scientists were divided according to their nationalities. However, a look at the actual report set my mind at rest because it consisted of 2 parts.

The first, signed by both groups, gave the dose levels of radioactive fall out from the French tests, and I give here the joint agreed conclusion.

<169>There was general agreement between both groups that for certain dose levels radiation is known to cause damage in humans. However, there may be a threshold below which lower levels of radiation have no effect, the action on human beings of low doses and very low doses such as result from the tests never having been observed. Current work, for example on the phenomenon of repair by living cells of damage they have suffered at high doses of radiation, suggests that low doses may not cause cancer or

genetic defects at a rate proportional to dose. Nevertheless the international authorities have prudently accepted the hypothesis of direct proportionality in order to establish accepted dose limits. Certain additional factors may operate to reduce significantly the risks below those predicted from a simple estimation based on proportionality. These include the lesser effects of certain types of radiation, radiation received at low dose rates, or over extended rather than brief time periods.<170>

The second part addresses the question whether, on the basis of the scientific evidence, the French tests can be justified or excused, and I give below the conclusions of the two versions.

<MI>Australian.<D>

<169>The Australian scientists drew attention to the additional harmful effects which would accrue to the Australian population as a result of the improbable event in which the explosion of a high-powered bomb was combined with quite exceptional meteorological conditions giving a high fallout over Australia.

Although the levels of radiation due to the French test are unlikely to cause a statistically detectable increase in the frequency of cancer or genetic abnormalities in Australia, it is emphasized that there should be no <MI>unwarrented<D> (my underlining) exposure to radiation. Further, with the long-lived

isotopes produced as the result of nuclear explosions, the genetic effects on the Australian population, though small, are cumulative.<170>

<MI>French.<D>

<169>The French experts feel that on certain points, notably on the effect of unusual meteorological occurrences, further exchanges of views based on existing documentation, could enable a better appreciation of the respective positions of the two groups.

The level of dose commitments resulting from the French tests in the Pacific, their comparison on the one hand with the natural radiation levels to which man is permanently exposed and on the other hand with the dose limits established with the greatest prudence by competent international organisations, show that the fall-out as a result of these tests <MI>can<D> in no way constitute a danger to the health of populations.<170> (my underlining)

A comparison of these two reports show that, apart from the underlined passages, they express similar views. And even the underlined words might have been accepted by the other side. The Australians might agree that the tests constituted no danger to the health of the population, unless you regard one or two

additional and statistically insignificant deaths as a <MI>danger.<D> Similarly the French might agree that unwarranted tests should be avoided<197>but would ask whether considerations of national defence provide a justification. But this takes us out of science, and hence out of the field of the present discussion, into the realm of<169>transcience,<170>a concept created by Dr. Weinberg and one which every scientist venturing outside the confines of science should bear in mind before passing judgment on matters which cannot be treated by purely scientific arguments.

It seems that nationalism plays a diminishing role in the practice of science but this does not mean that chauvinism and national rivalries are absent from science. Fortunately they are not as marked as in sport and one can attend international scientific gatherings without the risk of being attacked with beer bottles or worse. Nor is there an equivalent in science of the 4-yearly agonizing heart-searching about Olympic Gold, Silver or Bronze Medals and the position in the League Table. However, scientists should not be too complacent: there are still remnants of the attitude of loudly proclaiming the achievements of one's own country and passing over in silence those of other nations. It was while this paper was being written that the Nobel Prize for Physiology or Medicine was announced. I listened to five news broadcasts, both radio and TV and, while Sir James Black's achievements were very rightly described in some detail, only two

of them mentioned the fact that he shared the prize with two Americans, but none of them gave their names.

<MI>Conclusion.<D>

It will have become clear from reading this paper that it is not an attempt to give a definite answer to the question of the compatibility of Science and Ethnocentrism. It is hoped that the various case-histories of the influence of religion, ideology and nationalism on the teaching and practice of Science will stimulate a discussion.