

CORRESPONDENCE

Social sciences

SIR — The leading article in *Nature* of 29 April (p.789) discusses the place of the social sciences *vis-à-vis* the natural sciences but does not pinpoint the essential differences.

Physical scientists base predictions on firmly established laws, and though individual scientists are far from infallible their answers have a good chance of being right. Engineers deal with situations for which there are no unique solutions — for example, a railway can be built along a number of alternative routes but once the choice is made the basic knowledge for its construction and operation is available.

Economics is different. Professors, politicians, bank economists, businessmen, unionists and treasury officials all advance remedies for economic ills. But no matter how confident these experts may sound, there are as yet no accepted criteria for evaluation. Even when a policy based on one line of thought has been selected the government is likely to abandon it half way through.

Still further from mathematical precision lie the social and behavioural sciences, including education. There is a great and pressing need for study and research, best based on a background of mathematics and statistics. But the variables are so numerous that seldom can rigorous laws be established.

Social scientists should have theories. Too often, however, these are advanced as facts (and no amount of repetition can convert an unproved theory into a fact!). Sociologists are at a disadvantage compared with applied scientists who, if basic information is lacking, can turn to controlled experiments. This is, I think, the essential difference. Social scientists must rely on inductive logic and judgment: the physical scientist can test his theories in the laboratory.

Were social scientists to acknowledge the limitations of their methods to the public and to advance their views as hypotheses rather than truths, would they not attract increased support?

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A private matter

SIR — I wish to point out a blooper in your leading article, "Colleges back from the dead" (*Nature* 10 June, p.443). Seven thousand dollars would indeed be a stiff fee for a year's tuition at a state university in the United States. It is safe to say, however, that no undergraduate at a public school is, for the moment at least, faced with a tuition fee even approaching this amount. While, to the British ear, "University of Southern California" may sound like the name of a state university, and while USC's football team has repeatedly proved itself equal to, or better than, that of any large state school (much to the dismay of University of California fans, of both the Los Angeles and Berkeley persuasion), nevertheless USC is, contrary to your implied assertion, an undeniably *private* university.

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No "remote viewing"

SIR — A long drawn out controversy in *Nature* has followed the claim made by Puthoff and Targ¹ in 1974 that certain individuals can perceive objects or scenes blocked from ordinary perception by distance or shielding (the supposed phenomenon called "clairvoyance" by earlier generations). The most recent communications^{2,3} raise issues about the content of Puthoff's and Targ's experimental records that can only be settled by direct examination of those records. However, their critic, Marks, has reported their refusal to grant him access to their records².

In an attempt to clarify this issue, writing as a *bona fide* investigator of long standing in this general area but having no prior involvement with these particular experiments, I recently requested access to the data on the Price and Hamid series on which Puthoff and Targ based their original case for "remote viewing". No reply has been received after an interval of two months, despite repeated approaches. It must be concluded that the evidence offered by Puthoff and Targ is not accessible to other investigators. In this sense their claim can no longer be regarded as falling within the scientific domain, and further public discussion appears unnecessary.

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1. Targ, R. & Puthoff, H. *Nature* 251, 602-607 (1974).
2. Marks, D. *Nature* 292, 177 (1981).
3. Puthoff, H. & Targ, R. *Nature* 292, 388 (1981).

Centenary plea

SIR — At the meeting held in Cambridge last month to mark the centenary of Darwin's death, a statement was signed by 199 of the participants. The signatories ranged from Nobel laureates to graduate students and came from 20 different countries. They included specialists from the whole range of disciplines that impinge on the study of evolution. The statement read as follows:

We have gathered at a conference to commemorate Darwin and to discuss the evolution of plants and animals in the past. However, we are also deeply concerned about what may happen in the future. Human beings are creating conditions that could easily bring the long evolutionary process to an end with the total destruction of all life. In particular, the arms policies of the major powers are desperately short-sighted and increasingly unstable. Even if the threat to use nuclear weapons has acted as a deterrent in the past, it is not likely to do so for the rest of time. The continued spread of nuclear weapons and the development of new chemical and biological weapons could easily result in a war that rendered this planet uninhabitable. We urge our governments to take a long view of what they are doing. Human beings have evolved with an intelligence that has created technologies of enormous power. This intelligence must now be harnessed to secure a long-term future for life on Earth.

PATRICK BATESON

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Index for patents

SIR — Patent specifications are one of the several forms of the primary sources of scientific and technological information. Announcements of patent specifications are primarily through the official gazettes of the patent office of a country, or through secondary services like *World Patent Index* and other abstracting and indexing services brought out by Derwent Publications Ltd, London. The official gazettes follow their own system of arranging the abstracts, while the abstracts in *World Patent Index* and in other secondary services follow the *World Patent Index* scheme. These services generally provide accession number, patent number and patentee index, but no subject index.

Searching would be made more simple and less time consuming if patent information services provided a subject index. The user is more often aware of the subject area in which he requires information than of the name of the patentee or patent number.

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Help for refusniks

SIR — We were glad to see a letter of Professor Legay, Secretary General of the World Federation of Scientific Workers (WFSW) in *Nature* of 11 February (p.452). No doubt, the federation can help to solve the problem of emigration of "refusnik" scientists from the Soviet Union, if it really wishes to, especially in view of the respect and influence it receives in this country. But Professor Legay, perhaps unwittingly, downgrades the dimensions and the acuteness of the problem.

We want to emphasize that the question is not about several separate individuals but about a large group of scientists who are subsequently refused permission to leave the country and whose access to normal scientific activity is, at the same time, being deliberately restricted or almost completely blocked in certain areas (such as seminars, conferences, teaching and, to a large extent, publications). As we understand it, this is precisely the situation in which WFSW can and must intervene and help according to the goals expressed in its charter.

It would not be an exaggeration to say that most of us feel as if sentenced to professional death. But there is also a great psychological pressure that every refusnik, not necessarily a scientist, undergoes and that results from general uncertainty about the future, especially the future of children, from the impossibility of getting any information on how long we have to wait (and some of us must wait 10 years or more for permission to leave), and from the absence of legal ways to contest refusals and to defend ourselves. It has to be understood therefore that we speak not only about emigration as such but about our very existence and the existence of many others who are in the same predicament, our existence as scientists and human beings, about the lives and future of our families.

The situation continues to deteriorate (contrary to the hope expressed by Professor Legay at the end of his letter). All scientific seminars organized by refusniks were closed

by force, Victor Brailovsky, the host of the most well known of them, was sent to exile, a number of refusnik scientists recently lost their jobs. All of this indicates that the situation is approaching a critical stage which may become irreversibly tragic. As the most sinister sign we consider several recent statements of some officials that the problem of Jewish emigration from the Soviet Union no longer exists and that there are no more Soviet Jews wanting to emigrate (see for example the *Baltimore Sun*, 11 April).

Therefore we find it necessary to emphasize once again that emigration to Israel remains the only possible solution to our problems and that our decision to emigrate remains unshakable.

So far the activity of Professor Legay has been limited to asking for necessary information only from the official Soviet Trade Union organization connected with the federation. In this way, a very serious human problem is likely to be reduced to a formal argument the outcome of which very much depends on the knowledge and arbitrariness of some bureaucrat or other. We are convinced that the problem can be properly understood only through direct contacts with those who are personally involved. We use this opportunity to invite Professor Legay or another representative of WFSW who would be able to consider the problem honestly and comprehensively to come here and to meet us and other refusnik scientists.

If WFSW wants to help us, it can do so by giving the problem the widest publicity. At this time it may seem that the problem is ours only, and, in a narrow sense, it is. But the solution is far-reaching as it may affect (and already does affect) the lives of many scientists all over the world, their interaction and their confidence in each other.

SOLOMON ALBER
JACOB ALPERT
EITAN FINKELSTEIN
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MARK REITMAN

Moscow, Soviet Union

SIR — We are very concerned with the impression that may have been conveyed in the letter to *Nature* (11 February, p.452) from J.M. Legay, Secretary General of the World Federation of Scientific Workers.

In discussing an earlier letter written by a group of refusniks, he seems to have the impression that the number of scientists who have requested and been refused emigration visas is comparable to that of the number of signatories. He conveys this impression by comparing this letter with one he had received personally and suggests that "the situation has evolved since last year". The implication is that some of the signatories have emigrated. If this is the message, it is erroneous as well as dangerously misleading.

In a recent visit to the Soviet Union, two of our members ascertained that none of the signatories, either of the private or the published letter, has been granted an exit visa. Furthermore, our emissaries were assured that the problem is orders of magnitude greater than Mr Legay suggests. In Moscow alone, there are at least 50 Doctors of Science who are refusniks in addition to 300 Candidates of

Science, among an estimated total of 1,000 scientific workers in the same predicament. For the whole of the Soviet Union, with refusniks in Kiev, Leningrad, Kharkov and so on, a reasonable estimate would be a minimum of 2,000. An indication of the situation is a letter from 46 scientist refusniks which we hope will soon be published. These scientists, like their ten colleagues, to whom Mr Legay was replying (*Nature* 24 December 1981, p.688), have described the tragedy of their plight better than we could possibly do.

In the light of the fact that many refusnik scientists and their families have been subjected to arrests, long-term imprisonment, revocation of degrees (*Nature* 6 May, p.4), and other forms of harassment, it is remarkable that they continue to speak out forcefully.

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ADI EISENBERG

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More on Ovid

SIR — I dare say your correspondent M. Kamen-Kaye (*Nature* 8 July, p.114) would find much of interest on the early history of geology in Lyell's *Principles of Geology* (London, 1830). Ovid is quoted, as are other classical authors, and whatever one may think of Lyell's abilities as a historian, he was a damn good writer.

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Safe harbour

SIR — Sr Alberto C. Taquini's letter regarding the Falkland/Malvinas Islands (*Nature* 10 June, p.430) omits the following salient facts.

- (1) Only through British help did the Argentine manage to throw off the Spanish yoke.
- (2) After 1829 the Argentines used the islands as a convict settlement, the convicts revolted and made the Governor a prisoner.
- (3) The intervention of the captain of HMS *Cleo* was due to this fact, and interference by the Governor and/or the convicts with an American whaling ship.
- (4) Port Stanley was a port of refuge for sailing ships damaged in the passage round Cape Horn, ships of all nations. In fact the only port of refuge available for many miles.
- (5) It was clearly to the benefit of all that a stable administration was established there.
- (6) One can only imagine the Governor was thankful to be rescued and returned safely to his homeland as his country was either unable or unwilling to restore law and order.

JOHN R. BARTON

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Falklands alone?

SIR — If F.W. Cousins would consult the mass of evidence assembled and sifted by Dr J. Goebel in *The Struggle for the Falkland Islands* (Yale University Press, 1927), he would be forced to agree that the account of the history given by Señor Taquini is broadly correct (*Nature* 10 June, p.450 and 1 July, p.8).

The early navigators' accounts are far too confused for any certainty about the first sighting, though the most likely candidate is a ship of Camargo's armada in 1540, (note the

mention of foxes — Darwin's 'Falkland fox', *Canis antarcticus*?). But in any case discovery by itself has never been accepted as conferring sovereignty (did not Cook discover New Caledonia?).

The British case rests on the technicality that the establishment of Fort Egmont on West Falkland in 1766 predated the transfer of de Bougainville's colony on East Falkland to the Spanish crown in 1767. The French could have held out for their prior rights, but in view of the close relationship between the Bourbon kingdoms of France and Spain they backed down. It seems that the abandonment of Port Egmont was in fulfilment of a promise by George III, and it would hardly be honest to pretend that because it was unwritten it was never given.

Of the events leading up to the British takeover of 1833 it must be said that Louis Vernet's colony was broken up in 1831 by an American corvette, for alleged piracy, that the last Argentine governor was murdered by the remaining settlers shortly after his arrival in 1832 and that the British in 1833 found a state of anarchy on the islands. Vernet accepted compensation of £2,400 for his lost colony. Still it must be admitted that in 1833 the British claim to West Falkland was weak and to East Falkland weaker.

The important question, though, is why we are still talking about the rights and wrongs of events that happened before living memory, that affected very few people and that decided the fate of a very small territory. The restraint of Argentinian governments before Peron was more fitting to the dignity of a great nation than the subsequent strident claims.

Whatever happened up till 1833, circumstances now are wholly different. Half a dozen generations of British people have lived in the islands, which are now no more Argentinian than Normandy is English or Mexico Aztec. There can be no going back to 1832. However, it is not possible either to go back to 1 April 1982, now that a thousand people have died for the islands. Neither side is likely ever to accept the other's sovereignty. By elimination, the only solutions likely ever to be satisfactory are independence or permanent UN trusteeship. In view of the fact that it was the United Nations that introduced the notion of negotiable sovereignty in 1965, only independence seems likely to be acceptable to the islanders. Needless to say, independence would have to be declared by the islanders, rather than granted by the British, in order to be recognized by Argentina.

The question arises, how could so small a community with so few resources afford independence? The population would in fact only have to be multiplied by a factor of four to be equal to that of Nauru or Tuvalu, and this would not seem improbable. But biologists must view with anxiety the economic development that might go with population increase, for the islands are a laboratory and museum of sub-antarctic flora and fauna. Could not the international scientific community help to provide the dowry of an independent Falklands by agreeing to locate there the headquarters of organizations concerned with Antarctic research and conservation? The provision of services rather than the exploitation of natural resources would be the most appropriate basis for the islands' economy.

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