

Russia in 1936 by an edict that may now have to be hastily repealed.

One of the most extraordinary admissions in the first paper, by K.M. Gurevich, is that there are still significant class divisions inside Soviet society, as well as national cultural differences within the empire, which test content must take into account.

Western workers in the field of intelligence testing may also prick up their ears at the news that foreign tests are already in use (presumably in the enforced absence of nationally-devised and standardized ones). In fact, it was the use of such tests which originally brought testing into disrepute in the Soviet Union. Gurevich advises: "Above all, when embarking on a study with one of these (foreign) tests, it is vital to decide what contingencies it makes sense to employ in order to make it an appropriate instrument for carrying out an investigation under conditions very different from those under which it was created". A citation at the end of his paper shows that Gurevich recently published a book on the subject (*Psychological Diagnostics. Problems and Research*, Moscow, 1981).

In the second paper, V.I. Slobodchikov makes an interesting distinction between "suitable" uses of test procedures — that is, they may be used for discrimination and selection but not for "controlling development or in remedial education".

At the opening of the third paper, by Yu. Z. Gil'buch, the British intelligence tester Professor H.J. Eysenck is accused of epitomizing the "mechanistic" attitude to testing. This does not deter Gil'buch, head of a Kiev laboratory, with more than twelve

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years of published work on the subject, from concluding his piece thus:

"The fundamental question at the root of any discussion about content validity in intelligence tests is this: what underlies individual differences in the degree of mastery of mental operations as exemplified in any particular culture (as represented in tests)? Is it mostly factors of biological inheritance, innate gifts, or is it (alongside and in interaction with these) the conditions of education and upbringing, which in various families and various schools are unavoidably present in greater or lesser variety?"

Soviet test experts are frantically trying to

devise tests which allow for different norms within classes and national cultures, but which will also serve the practical purpose for which the tests have been revived — namely, the more efficient selection of personnel to man their scientific and technical revolution.

The present aim of Soviet psychologists seems to be to devise tests which tap the purest, least culture-bound workings of the brain, such as solving abstract puzzles, chess problems and devising imaginary games.

Just how important this is to the Soviet Union is summed up by Gurevich thus: "In our country at present the growth of psychological diagnosis has become one of the most vital supports of theoretical and applied studies in the field of education, farming and management. In pre-school education, high school and professional training, methods of psychological diagnosis must be used to assess levels of psychological development: this allows for the inevitability of change within the very process of education, and provides a broad base from which it can advance to rationalization and improvement."

Elizabeth Roberts

Biological warfare

Soviet use

Washington

The Reagan Administration claims that it now has clear and scientifically verified data that the Soviet Union is providing toxic agents for military use by its allies in Laos and Kampuchea, and has circumstantial evidence that the Soviet Union is itself using such weapons in Afghanistan.

The evidence is contained in a report presented to Congress by Secretary of State Alexander Haig last Monday, providing a detailed analysis of eyewitness reports, chemical analysis of samples and information from other sources gathered over the past seven years.

According to Under-Secretary of State Walter Stoessel, the evidence shows that the Soviet Union has been engaged with its allies in the use of weapons that are forbidden by the Biological and Toxin Weapons Convention of 1972. "The USSR is flagrantly and repeatedly violating international agreements, and this is now a threat to the whole international community, since toxin weapons are a cheap, convenient way of subduing and exterminating opposition which could be used against other people", Mr Stoessel said.

The State Department's report is intended to stem sustained criticism that it has failed to substantiate its allegations of the use of chemical and toxin weapons — and in particular of tricothecenes — with adequate medical and scientific data.

Various other hypotheses have been put forward to explain the presence of tricothecenes in samples which have been brought back from South-East Asia and

Incriminating data

Washington

The State Department report details how the evidence for the occurrence of mycotoxins has been obtained. It says that the US Army's Chemical Systems Laboratory was unable to detect them in the few samples returned from South-East Asia, so that Dr Chester J. Mirocha from the University of Minnesota was asked to apply his gel-separation and mass spectrometric techniques to the problem.

Three closely related mycotoxins are said to have been identified: T-2, nivalenol and deoxynivalenol. A sample of material thought to be contaminated and obtained from Kampuchea contained 109 p.p.m. of nivalenol, 59.1 p.p.m. of deoxynivalenol and 3.15 p.p.m. of T-2. Control samples of vegetation, submitted for analysis gave negative results.

Samples of water from Laos and Kampuchea contained 150 p.p.m. of T-2 and 25 p.p.m. of diacetoxyscirpenol, another closely related toxin. A sample of yellow powder collected after a supposed attack by chemical weapons showed no evidence of toxins but did yield a yellow pigment, similar to one found by Dr Mirocha in a culture of *Fusarium roseum*. The report says that this may mean that the agents used in South-East Asia are crude extracts of *Fusarium* cultures.

A crucial element in the State Department's case is that the concentrations found in the samples from South-East Asia are greater than those associated with natural contamination. Typically, the latter yield only a few parts per million of mycotoxin, although one measurement of 41 p.p.m. of mycotoxin in contaminated grain in the United States is on record.

The report includes names of Soviet scientists and of four laboratories thought to be involved in research with mycotoxins. The laboratories are the Institute of Experimental Veterinary Science (Moscow), the Institute of Microbiology and Virology (Kiev), the Institute of Nutrition (Moscow) and the Institute of Epidemiology and Microbiology (Moscow). There is no suggestion that the research there is military in character.

analysed in US laboratories. Some have claimed, for example, that they could have come from various forms of rat poison, others that they might be the residue of naturally occurring fungus.

State Department officials, however, said at a press conference on Monday that they had looked closely at the various alternative explanations and had not been able to substantiate any.

Mr Richard Burt, the department's

director of political and military affairs, pointed to extracts from an East German military manual printed in the report which gives details of how toxin weapons might be used, pointing out that the suggested circumstances were similar to those reported in South-East Asia.

"We think Laos, Cambodia (Kampuchea) and Afghanistan are 'proving grounds' for testing the chemical and biological weapons capability of the Soviet Army", Mr Burt said. "In all three countries there is strong local resistance which stands in the way of Soviet objectives, and where the conventional use of troops would be very costly."

Department officials refused, on national security grounds, to say how all the various samples and reports had been obtained. In analysing the samples, Mr Burt said, the department had received technical cooperation from the British government as well as the Japanese.

Disputing press reports that tricothecenes were not powerful enough to be a useful tactical weapon, Dr Sharon Watson of the Army Surgeon General's Office said that experiments carried out at the army's testing centre in Fort Detrick, Maryland, had shown that haemorrhaging, caused by a severe impairment of blood-clotting, could occur at very low exposure levels. Experiments had shown that for a 70 kilogramme man the LD50 dose could be as low as 35 milligrammes.

Furthermore, Dr Watson said, the army had reason to believe that a crude extract from *Fusarium* was being used, which could be more toxic than the purified form. Referring to the broader implications of the charges being made against the Soviet Union, Mr Burt said that the evidence for the use of toxins in South-East Asia illustrated that one of the major flaws in the 1972 convention banning the use of toxins in war was that it contained no provision for verifying compliance.

David Dickson

Information technology

Cables coming

If Britain does not prepare to accept cable information systems now, then it may as well not bother at all. That is the message contained in a report to the Cabinet Office which was prepared by the government's Information Technology Advisory Panel and published earlier this week. Such is the urgency perceived by the panel of the need to provide cable television for British viewers that the report urges the government to make its intentions clear even before fully resolving some thorny problems such as regulation and licensing of the programmes that can be transmitted.

The government seems set to take on board the gist of the report's recommendations which include announcements of broad policy by mid-1982, regulatory arrangements by early 1983 and the

formulation of technical standards for the cable network by the end of this year. Civil servants in several government departments are now trying to work out the details. Thus the more leisurely approach to cable television which was envisaged as recently as early last year, when the Home Secretary approved 13 pilot schemes, looks like being abandoned. Decisions must now be taken, according to the report, before the results of those schemes can be known, in order to prevent overseas companies from hastening the decline of the British cable television industry.

The chief interest in cable systems is said to lie in their potential for linking new information technologies. But the panel believes that large numbers of users will only be attracted to the system quickly if it starts by offering a wide choice of television programmes. Mr Charles Read, chairman of the panel, hopes that programme providers can be licensed within existing legislation, which gives the Home Secretary wide powers of discretion.

Public fears about the quality of broadcast programmes, which traditionally have been tightly controlled in Britain, may not be so easily allayed. This problem will soon be tackled by Lord Hunt, formerly secretary to the Cabinet, who is to hold an urgent inquiry into the likely effects of cable television on the public broadcasting system.

Precise specifications for the cable system have yet to be established. But the panel's report envisages series of local networks, initially in large cities, that would offer broad bandwidth communications capable of carrying 15-24 channels. British packet-switching technology that would allow cable to individual homes to be of lower bandwidth than that on trunk lines is favoured.

The cost of cabling half the British population, according to the report, would be about £2,500 million, all of which would have to be found by the private sector, which apparently is eager to put up the money.

Costs, says the report, might be minimized if British Telecom ducts were used for laying the new cable. Local networks could, for example, be interconnected via its own telephone network. And as private broad bandwidth cables may well be installed before its own network is upgraded, the company would be wise to consider putting some of its own services, such as Prestel, onto the new cables.

While welcoming British Telecom's interest in the new cables systems, the panel's report is nevertheless cautious about the extent of the company's involvement. It is particularly keen, for example, that British Telecom should not dictate the standards for the new networks, presumably fearing that the company would be too restrictive and cause unnecessary delay.

Judy Redfearn

Neuroscience moves

New York

The Neurosciences Research Program, the seemingly clubby survival from the time when it seemed necessary, twenty years ago, to persuade people that neurobiology was interesting, is in the throes of moving from Boston to New York. At the same time, it has been given a new image and an income that it can call its own.

The organization was begun in 1962 by Professor Francis O. Schmitt, largely to proselytize on behalf of the neurosciences. Since then it has been housed in a replica of a French chateau 15 miles from Boston, and has been best known for its periodic small workshops (up to six a year) on various aspects of neurobiology. Now, however, the organization has negotiated a lease with Rockefeller University that will allow it to house not merely its administrative staff but a new institute, called the Neurosciences Institute, intended to provide up to half a dozen relatively senior people in the field (and perhaps as many junior colleagues) with an opportunity for conceptual (as distinct from experimental) work for short periods of time.

Both parties to the lease now signed are anxious to emphasize that the Neurosciences Research Foundation, by becoming a tenant of the university, will not become a part of it. The foundation will in future finance both the Neurosciences Institute and the Neurosciences Research Program from an income that appears to exceed \$500,000 a year.

In the move from Boston to New York, some care seems to have been taken to broaden representation in the management of the enterprise, with the result that it is often hard to tell who will do what. The director of the Neurosciences Research Program from the president of the foundation) is Dr Vernon B. Mountcastle, President of Johns Hopkins University. Dr W. Maxwell Cowan of the Salk Institute is the chairman of the Scientific Advisory Committee of the programme, but there is also a "scientific" chairman, Dr Gerald M. Edelman of Rockefeller University (who is also the director of the Neurosciences Institute).

Representation of the Salk Institute through Dr Cowan, is said to mark the plan that both the Neurosciences Research Program and the institute will be peripatetic, migrating *en masse* to the west coast for the summer months. Edelman hopes that the first of these summer programmes will take place this year, although formal arrangements with the Salk Institute have not yet been completed.