Local Option Affects U.S.-Soviet Exchanges

American participation depends on choices by individuals and some are opting out on human rights, other issues

Is the American scientific community conducting its own foreign policy? A changing response by U.S. scientists to Soviet conduct on human rights and issues of scientific freedom have made it look rather that way.

On the American side of the Soviet-U.S. scientific exchanges there is a trend toward organized action to protest Soviet policies. And many American scientists appear to be taking a tougher line as individuals about their own terms for participating in cooperative activities. These developments do not seem to have affected the level of interchange under government-to-government agreements and there has been no significant shift in U.S. official policy on the agreements. But the new tendencies have introduced new tensions into the exchanges.

These tensions are apparently viewed as serious enough for Soviet authorities to have had them discussed in *Pravda*, the country's principal public sounding board. In a long article in the newspaper in April five prominent Soviet scientists endorsed scientific ties between the two countries, but noted "we cannot overlook that certain circles in the USA are obstructing the cooperation between the scientists of both countries and are endeavoring to reduce the ties or to stop them." While the writers gave emphasis to this point, the balance of the article was devoted to lauding the strength of Soviet science and the benefits of mutual cooperation. The article concluded that scientists must assist "in directing the scientific and technical progress toward the welfare of people and the solution of essential problems of mankind." (A statement in response to the *Pravda* article signed by five American Nobel laureates is printed on page 854.)

The *Pravda* article appears to have been prompted principally by petitions signed by some 2400 American scientists pledging themselves to restrict their participation in cooperative activities (*Science*, 16 March). The petitions were circulated by Scientists for Orlov and Shcharansky (SOS), an organization established last year at the time of the trials of Soviet physicist Yuri F. Orlov and computer scientist Anatoly Shcharansky, both of whom received harsh sentences.

The trials drew expressions of concern from President Carter and postponement of two joint Soviet-U.S. meetings on the exchange program, but these were subsequently rescheduled and normal relations on the area of scientific cooperation resumed. Early this year, for example, the program of exchanges between the two countries first established in 1959 by the U.S. National Academy of Sciences and the Soviet Academy was extended without fanfare.

The trials, however, seem to have served as something of a catalyst on attitudes toward the exchanges in the U.S. scientific community. The Shcharansky case, for example, influenced a decision by a major computer research society, the Association for Computing Machinery, to boycott exchanges and joint activity with the Soviets until the climate for human rights and scientific freedom in the Soviet Union improves. SOS was formed and, depending on a very informal network, mustered a group of petition signers national in spread and representing many disciplines. There were cancellations by American delegations scheduled to attend scientific meetings in the Soviet Union and a significant number of individual scientists also chose not to attend. At the same time, the irritations and frustrations of American scientists who feel that Soviet conduct of the cooperative programs is dominated by political rather than scientific considerations has grown to the point where many are balking at participating unless the Soviets adopt what several of them in interviews with *Science* termed a more "businesslike" approach.

All of this, though obviously significant, is impossible to quantify. Pluralism operates with a vengeance on the American side of the exchanges. U.S. participation rests on the willingness of American scientists to participate. With the exception of some government scientists, implementation of the agreements depends on the sum of individual choices.

In the Soviet Union, scientists march to an official drummer. Not surprisingly, this affects Soviet assumptions and expectations about American behavior. Last summer, many Soviet scientists and officials were apparently convinced that the American reactions to the Orlov and Shcharansky trials were inspired by the U.S. government. Subsequently, American scientists in contact with the Russians seem to have convinced them that the reaction came from the grass roots. But resentments remain. The statement in *Pravda* referred to "the period of an inflammatory anti-Soviet campaign in the USA over a trumped 'human rights' slogan. . . ." And when U.S. scientists make difficulties in the exchange programs the Russians are said to feel that the Americans made a bargain and are not sticking to it.

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Something of a shift in the long-term views of American scientists toward cooperation with the Soviets seems to be occurring. During the Cold War and the succeeding tense era of peaceful coexistence American scientists were in the forefront of those who sought to establish contacts with the Soviet Union as a way of reducing the threat of nuclear

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Westinghouse Sues NRC

Frustrated by federal indecision, the Westinghouse Corporation has sued the Nuclear Regulatory Commission (NRC) in an attempt to gain a license for the export of nuclear reactor components to the Philippines. The suit, filed on 6 August, asks the NRC either to approve the Westinghouse application or to place the matter directly before President Carter, as provided for by regulations.

Westinghouse is seeking the export license so it can continue construction of a controversial $1.2 billion reactor at the foot of a long-dormant volcano near Manila. Environmentalists here and in the Philippines are pressuring the NRC to withhold the license pending resolution of safety issues related to the volcano, Mt. Natib, and to nearby geologic fault lines.

Construction of the reactor has been halted pending the conclusion of hearings on the safety issues ordered by Philippine President Ferdinand Marcos in June (*Science*, 6 July). But Westinghouse believes that by the time its suit is settled, the hearings will be over and construction will have resumed. Westinghouse has apparently taken its confidence from the refusal of the tribunal conducting the hearings to grant a delay so that opponents of the reactor have time to prepare their case more carefully. Members of the tribunal have been under strong pressure to conclude the proceedings swiftly so that 2100 laid-off workers can be rehired.

Recently, a leader of the political opposition, Lorenzo Tanada, visited the United States to ask scientists to testify and prepare analyses of the reactor's safety. After meeting with Tanada, Frank von Hippel, president of the Federation of American Scientists and a physicist at Princeton University, wrote to the Philippine tribunal to suggest an additional hiatus of 6 months so that "independent scientists" could conduct a review of the safety data. He also suggested that the NRC and the United States Geological Survey could render formal assistance.

Thus far, the USGS has offered only informal advice to the State Department about the soundness of the reactor design and construction. According to John Reinemund, chief of the USGS international geology office, the agency's review generally affirmed the concerns raised in a 1978 report on the Philippines reactor by the International Atomic Energy Agency (IAEA). "We put a little more emphasis on the volcanic and seismic problems," he says.

The IAEA report, considered a classified document until several weeks ago, describes the reactor site as "unique to the nuclear industry insofar as the risks associated with eruption of nearby volcanoes." It called the eruption of Mt. Natib, although dormant for 67,000 years, a "credible event," both on its slopes and from the crater. "This requires consideration of excessive ash fall, glowing avalanche, gas accumulation, and laharic [mudflow] slides" in the reactor's design. "One possible solution to mitigate against a radioactive release in the event of an eruption of Mt. Natib is the removal of the fuel to an off-site storage location upon advance warning by a surveillance system," the report says.

The IAEA also notes that the risk of a major earthquake near the reactor site may be greater than estimated by the Philippine nuclear power agency. The reactor must be able to accommodate a quake measuring as high as 8 on the Richter scale occurring within 50 to 70 kilometers, the agency says. Also, a random shallow earthquake could occur directly below the site, in which the reactor would have to withstand an acceleration of up to 0.75g.

The Philippine Atomic Energy Commission disputes several of these estimates, and says it is taking all appropriate steps to safeguard the reactor in the event of an eruption or an earthquake. Whether the NRC will reach the same conclusion is uncertain. Even if Westinghouse is granted the export license in response to its lawsuit, two other license applications (for export of the nuclear steam supply system and the fuel rods) must also be approved. An official at the State Department predicts the entire affair will not be resolved for months.—R. JEFFREY SMITH

war. In the 1960's and early 1970's, many scientists saw the links as of sufficient value to participate in exchanges despite Soviet policies and actions to which they objected. Over the last two decades, the exchanges proceeded remarkably unaffected by ups and downs in Soviet-U.S. relations.

The advent of détente in the early 1970's created expectations among scientists here and in the Soviet Union of a generally freer interchange in the scientific sphere, for example, of a relaxation of travel restrictions on the Soviet side. At the start of the decade, the opening of Jewish emigration to Israel on a major scale had been interpreted by some as a significant sign of liberalization. The disappointments of détente seem to have sharpened the attitudes of American scientists on human rights and scientific freedom issues.

Scientists under pressure in the Soviet Union fall into two categories, dissidents and "refuseniks," although many belong to both categories. The dissidents in general have sought to secure the rights of Soviet citizens provided under Soviet law and international agreements but denied in practice. The second group is made up of scientists and engineers who have tried to join the Jewish emigration and have been turned down, thus refuseniks. Orlov is numbered among the dissidents who have indicated they wish to stay in the Soviet Union. Shcharansky took up dissident activities after he was refused permission to emigrate and was fired from his job.

Both men were identified with groups that sought to monitor Soviet implementation of the human rights provisions of the Helsinki accords. The severity of Orlov's treatment is attributed by informed observers in particular to the attempts by his group to intercede in behalf of religious groups and people of non-Russian nationalities who have run afoul of Soviet authorities. In the official view, such contacts are viewed as having the potential for generating organized political activity and, conceivably, political opposition. Any hint of such activity in the Soviet Union invariably brings heavy reprisals.

In the Soviet Union scientists are in general a privileged group enjoying higher pay and better housing than other workers and receiving other concessions such as job rights and access to foreign publications. Because of their status and the investment by the state in their education, scientists are viewed as having a special obligation to society so that criticism from scientists or, in the case of

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Jewish scientists, the request to emigrate, incurs stern official sanctions.

On the American side, protests have come principally from university scientists. American academics are accustomed to the guarantees of academic freedom and tenure and have flexible schedules that make it more possible to travel and engage in political activity than is the case with most other professions or occupations.

American scientists, however, in the 1970's have also gained extensive experience with the Soviet system through participation in exchange programs and activities in international scientific organizations. Familiarity in many cases has bred exasperation. The impression is widespread among American scientists that permission to travel abroad is granted as a reward for loyalty by the Soviets. They are said frequently to replace invited speakers or members of delegations with less distinguished scientists and in some cases with party apparatchiks. American scientists visiting the Soviet Union say that cooperative activities are retarded by bureaucratic red tape and that, for example, planned visits to specific scientific facilities are sometimes canceled without adequate explanation.

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A minor but nevertheless nonnegligible factor in the change in American attitudes is that the novelty of travel in the Soviet Union has waned. There was a time when a trip to the Soviet Union was a plum sought after both by scientists and government officials. China is now in vogue. And as the National Academy of Sciences Foreign Secretary Thomas F. Malone observes of the exchanges with the Soviets, "the era of scientific tourism is at an end."

One symptom of the new American attitude is the effort to make the exchanges more scientifically productive. In the exchanges administered by the academy the trend is away from individual exchanges and toward a "workshop" format. The emphasis is on more structure and a product. A subject is chosen, if possible on the cutting edge of science in a discipline where both sides have much to contribute. Participants are agreed upon in advance and the assumption is that there will be no substitutions. Papers are scheduled, in some cases the joint efforts of Soviet and U.S. scientists, and are expected to be of a quality to warrant publication.

The NAS is responsible for running the main exchange program for basic research in the natural sciences. The International Research and Exchange Board (IREX), an adjunct of the American Council of Learned Societies, performs the same function for the humanities and social sciences. The government has followed the policy of subcontracting administration of the exchanges in part to insulate the exchanges from political influences.

In the view of some outsiders, NAS has been more active in human rights and scientific freedom issues than IREX. IREX generally has taken no stance on the issues and has left the matter explicitly to the consciences of its clients. The academy's committee on human rights last year asked to send an observer to the Shcharansky trial, an unprecedented action, and academy president Philip Handler made an appeal on behalf of Orlov and Shcharansky. But academy officials note that the committee is concerned with cases in other countries, such as Argentina, besides the Soviet Union. The academy emphasizes that individual scientists should make their own judgment concerning participation in the exchanges.

Perhaps the most drastic official action to date by an organization was the boycott decision taken by the Association for Computing Machinery. The ACM constitutes something of an exception to the rule of university predominance in the protests. ACM's members are drawn from the computer research community. About a third of its members are academics and the others are in industry and the data processing sector. Dan McCracken, ACM president, says that the organization's officers experienced some trepidation about the reaction of ACM members to the decision, but found that it was not seriously opposed. He emphasizes that ACM has not attempted to persuade its members from participating as individuals in cooperative activities.

The question of whether a boycott is the most effective tactic in influencing the Soviets has been a subject of discussion in some scholarly organizations. The American Political Science Association (APSA) had a lively debate over whether to participate in the world congress of the International Political Science Association in Moscow in mid-August. APSA members voted by a 3 to 2 ratio to participate in the meeting on condition that all qualified political scientists be admitted. IPSA itself, with pressure from United States and other political scientists, laid down terms that the meeting would be held in Moscow only if all bona fide scholars who wished to attend were given visas and treated equally. There had been particular concern that the Israelis might be excluded, but Soviet authorities agreed to the terms.

The organizations formed especially to work on human rights issues in general have not advocated total boycott. Several of those active in the formation of SOS, for example, say they support Soviet-American cooperation in science and feel that many of the signers of the petitions would resume participation if the Orlov and Shcharansky issue was resolved.

The Committee of Concerned Scientists was established in 1972 out of concern about Jewish emigration from the Soviet Union, but subsequently also became active on issues of scientific freedom. The CCS from the start has operated on a decentralized basis. It is organized into disciplinary divisions which take initiative in cases where scientists in a particular discipline are in difficulty. The CCS view seems to be that boycott tactics are counterproductive and that a better hope of influencing Soviet policy is through variable cooperation.

American scientists are now much better informed about the workings of the Soviet system than they were even a few years ago, and have more accurate knowledge of who is in trouble and who is causing them trouble. The increased flow of information is attributable, in part, to the growth of émigré communities in Paris and New York and elsewhere. Jewish emigration since last autumn has proceeded at a rate of about 4500 a month and a record year may be in prospect. Israel is no longer the destination of the majority of emigrants. Only about 30 percent now go to Israel. The United States takes the largest group with about 36,000 expected this year.

More scientists and engineers are reported to be among recent emigrant groups than have formerly been permitted to leave.

An increasing number of dissidents is coming to the West as a result of the selective policy of exile that Soviet authorities have applied since the early 1970's. Émigré communities have therefore become a rich source of information about the Soviet system. Inevitably, in such communities divisions develop and there is, for example, no unanimity on how American scientists can be most effective in influencing Soviet actions.

In the Soviet Union, treatment of dissidents and refuseniks continues to be harsh. The punitive actions available to Soviet authorities range from deprivation of employment and use of highly developed harassment techniques to arrest, trial, imprisonment, psychiatric confinement, and the old Russian custom of internal exile. Compared to the post-Stalin era when scientific cultural exchanges were initiated, the perils of nonconformity are less severe. Emigration and exile are preferable to unrestrained Stalinist terror and the Gulag. In the society at large there are some signs of liberalization. Jamming of foreign broadcasts was stopped and the censorship has eased in some other ways. American scholars say that work in the social sciences is now possible, with access to materials being provided, some field work tolerated, and collaboration with Soviet social scientists countenanced.

The Soviet Union is still not an open society. And American scientists applying Western liberal expectations to Soviet behavior are being highly optimistic. Most American scientists active in the human rights and scientific freedom cause know this. They also know that there are many imponderables surrounding such things as the outcome of the SALT II debate and the Brezhnev succession. But their working assumption is that scientific cooperation is valuable to the Soviets, both for reasons of prestige and as a practical way to keep up in science and technology. The Soviets are also granted some sensitivity to world opinion. And there is some reassurance taken in the fact that the exchanges have been institutionalized, have become part of the bureaucratic landscape on both sides. American scientists also concede that they could carry the protests to the point where the Soviets could decide to scuttle collaboration. With due restraint, then, these scientists see cooperation as a way to carry on long-term negotiations with the Soviets on human rights and scientific freedom.—JOHN WALSH

Syria Said to Suppress Archeological Data

Hebrew names in an ancient archive reportedly anger the Syrians, but scholars say the whole story is a hoax

On 17 April 1979 the *New York Times* ran a story in its science section that began: "A leading archeology journal has charged that Syrian authorities are trying to suppress the findings of scholars who are deciphering the huge cache of inscribed tablets discovered amid the ruins of the 4500-year-old kingdom of Ebla." It went on to say that preliminary reports from Italian archeologists at the site told of many links between the words on the cuneiform tablets and the world of the Biblical Hebrews. "Speculation," said the *Times*, "has even gone so far as to suggest that the ancient Eblaites may have been early Hebrews. . . ." The Syrians were enraged by this, it continued, and the Italian scholars were now pulling back on their earlier interpretations. The Syrian suppression might well succeed, moreover, because "not one of the 15,000 or more tablets has been made available, even in a readable photograph, to the scholarly community."

What gave the story bite was recent history. Some Israeli politicians had justified Israel's claims to new territory, such as the Golan Heights taken from Syria during the war of 1973, on the basis of Biblical writings. That the Syrians would try to suppress information that they feared might lead to further Israeli inroads seemed more than plausible.

It was a hot story, and it quickly spread. On 24 April the Los Angeles *Times* ran an editorial entitled "Toying with history" that urged "the prompt publication of some of the key tablets, to permit interpretation and debate free of political restraint." Not long afterwards, the *Wall Street Journal* reported that Giovanni Pettinato, the epigraphist at Ebla who translated many of the tablets and who discovered the key to the language in which many were written, had been kicked out of Syria by its government. Things came to a head in June when the Los Angeles *Herald Examiner* said that an "Arab terrorist hitman" tried to influence the translation of the Ebla tablets by intimidating Giorgio Buccellati, an archeologist at the University of California at Los Angeles who is the only U.S. member of a nine-person international committee of scholars in charge of the Ebla tablets. The terrorist did this, according to the paper, by murdering the wife and child of one of Buccellati's friends.

Are the Syrians so unnerved by the Biblical implications of the Ebla tablets that they quash documents and terrorize scholars? It makes a good read, but the story seems to require some major revisions. Pettinato, when called in Rome, told *Science* that he can still go to Syria, and that "the Syrians want us to publish the tablets very quickly." It turns out, moreover, that at least 50 of the tablets have already been published. Buccellati, when called at UCLA and asked about the terrorist murders, broke out laughing. "The police never called me. I never even talked to the newsman who wrote the story."

Academic observers see quite different sources of conflict. Some suggest that Pettinato was a trifle too eager to establish Biblical connections. Others note that it is a bitter feud between Pettinato and the archeologist who uncovered the tablets, not orders from Damascus, that has kept Pettinato out of Syria. Buccellati has charged the archeology journal cited in the *New York Times* story with shoddy scholarship. And many of the ar-

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