

factors in measuring the "environmental health" of a country.

Measuring the quality of life is obviously a very difficult task. However, at least a few steps can be taken toward achieving this goal by devising an EQI. Periodic revisions and inclusion of more data will allow us to better understand our environment, and to determine which areas need our greatest efforts in improvement.

Summary

I have presented an approach to constructing an EQI for Canada. The index was divided into air, water, land, and miscellaneous sections. By noting individual subindices, it is possible to study how environmental conditions vary across the country. By combining the subindices, one can obtain a more crude gauge of the broad state of the environment. As indices and mathematical methods are improved, it may eventually be possible to measure this state in the same way as the economic state of the nation is measured now. The work described herein can be viewed as a simple guide to this measurement.

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18. *Encyclopaedia Britannica* (Encyclopaedia Britannica, Inc., Chicago, 1966), vol. 2, pp. 973ff. This article differs somewhat in terminology and emphasis from that on p. 100 of the same volume.
19. Some of the many who helped with the EQI were R. Peters, J. Shah, G. V. Buxton, M. Kwizak, G. E. Munn, J. Ross, I. C. M. Place, and D. Eagles. Mrs. K. Przednowek and R. MacKay helped greatly with the many calculations, maps, and diagrams. Dr. F. K. Hare provided continued encouragement and wise advice. Most importantly, Dr. P. Meyboom was the inspiration for this work and steered it clear of many obstacles, both conceptual and scientific.

NEWS AND COMMENT

Soviet-American Copyright Deals: Better Where Barter Is Possible

The American Institute of Physics (AIP) and a Soviet government agency have recently reached an agreement which reconciles copyright issues in the publication of American physics literature in the Soviet Union and Soviet physics literature in this country. The agreement is probably the most noteworthy one concluded by a nonprofit, scientific publisher in the year and a half since the Soviet Union acceded to the Universal Copyright Convention (UCC).

For some other scientific publishers, agreement with the Soviets seems just as far away as ever. The American Chemical Society (ACS), for example, has been unable to arrive at terms with the Soviets. The two sides, however, have reached an interim understanding under which the Soviets have

agreed to stop systematic, "cover-to-cover" copying of ACS publications and have also increased the number of regular paid subscriptions coming into the Soviet Union. The Soviets, in fact, seem to be buying more subscriptions to many of the estimated 270 American scientific and technical journals which they were formerly photocopying or translating. These were distributed in the U.S.S.R. and in countries belonging to the Council for Mutual Economic Assistance (CMEA)—which is made up of eastern European nations plus Cuba and Mongolia.

For many American and other Western publishers the main sore point is still the low royalties offered by the Soviets for publication rights. AIP is something of an exception because it

translates Soviet physics journals into English and was able, in effect, to swing a barter deal. But publishers for whom no quid pro quo arrangement is possible tend to feel frustrated.

The general attitude toward the new Soviet copyright connection among American publishers is probably expressed by the comment of one person familiar with the views of commercial publishers who said, "Nobody's going to get rich, but it's better than nothing." A staff member of a professional scientific society which is a major nonprofit publisher commented with mixed idioms but unmistakable sentiment, "You can't beat 'em, you can't join 'em, you might as well take the crumbs from the table."

Until they signed the UCC, the Soviets had freely translated and reproduced American and other Western publications, including scientific and technical journals and books, without securing publication rights and, in most cases, without paying royalties.

After May 1973, when Soviet participation in UCC became effective, Soviet negotiations with foreign pub-

lishers were handled by Mezhdunarodnaya Kniga (Mezhkniga)—the Soviet export-import agency for the book trade. The Soviets, however, created a new state copyright agency with the acronym VAAP, which is taking over negotiations. VAAP reportedly is seeking permission to station a representative in the United States, presumably in New York.

Representatives of American commercial and nonprofit publishers who have dealt with Soviet negotiators describe them as very hard bargainers, but also report that the Soviets appear to adhere scrupulously to agreements once they are made. Agreements reached by AIP and other publishers run to the end of 1974 and there is some uncertainty about how VAAP will handle renewals or new agreements.

From the beginning, the Soviets' basic position has been that their country does not have sufficient hard currency available either to pay the foreign exchange price for all the subscriptions they need or to pay high royalties for publication rights. According to data provided by the Soviets, before acceding to UCC, they were buying 919 subscriptions to 270 American journals and reproducing 75,771 subscriptions for distribution in the U.S.S.R. and 35,313 subscriptions for CMEA countries. Last year Mezhnika offered American scientific publishers a standard agreement providing a 7.5 percent royalty based on the Soviet subscription price and convertible to American dollars. In exchange, the Soviets wanted full publication rights in the U.S.S.R. and permission for limited distribution of copies in CMEA countries.

On the American side, negotiations have been carried on individually by publishers. U.S. government agencies have provided information and advice, but have not taken a direct hand in negotiations. Chiefly involved have been the National Science Foundation (NSF) Office of Science Information Service and the State Department's Office of Business Practices. A good summary of the background to the copyright dialogue as well as a survey of the status of publishers' negotiations as of June 1974 was released this summer by NSF.*

The report carries the results of a

* U.S.-U.S.S.R. Copyright Negotiations on Scientific and Technical Journals. Available while supply lasts from the Office of Science Information Service, National Science Foundation, Washington, D.C. 20550.

survey conducted last spring of 155 scientific publishers. It shows that about one-fifth had signed agreements of some kind permitting reproduction while half had turned down the Soviet standard offer of a 7.5 percent royalty and have either made a counterproposal or are not yet in active negotiation. Most of the remaining publishers either had not had an offer from the Soviets or the status of negotiations was unclear. NSF officials say the situation has not changed materially since the report was published.

The AIP, as noted, was in a relatively strong bargaining position because it operates a major program of translating Soviet physics literature into English and could therefore seek a barter deal. AIP, a federation of 8 physics societies, publishes about 90 percent of the physics literature appearing in the United States. The Soviets photocopy about 70,000 pages a year of AIP material and the AIP translates about 25,000 pages a year of Soviet physics material. The Soviets do some translating of American physics literature, but the bulk of publication is in cover-to-cover reproduction of journals and, to a much smaller extent, "selections" of articles.

AIP Director H. William Koch says that, when negotiations began, the Soviets wanted to treat translation and reproduction separately, but AIP pressed for a page-for-page barter arrangement with no distinction between translation and reproduction. Koch says that AIP also sought an "absolute royalty per page no matter which way it was going."

The agreement specifies what can be sold and where by both sides. Koch said that the agreement protects AIP against the sale of reproduced AIP material outside the Soviet Union, a key concern of the AIP member societies. Included in the agreement are fine details such as a formula for a "standard page"—since pages and type differ in size. The formula removes a possible source of argument. Payment of a net royalty by the country with a higher page count is provided for, and this, on present form, will be paid by the Soviets. AIP, in fact, is awaiting its first check from Moscow.

Koch declined to make a copy of the agreement available to *Science*. AIP has received a cable of confirmation, but so far no copy of the signed agreement. He said that AIP member societies have been represented in nego-

tiations, but the final form of the agreement has not yet been discussed. He also noted that AIP had been advised against discussing details of the agreement because of possible violations of antitrust laws. Exchanging information with other publishers on such things as royalty payments and pricing practices connected to negotiations with the Soviets could have antitrust implications. (Justice Department and Federal Trade Commission officials have been consulted and have indicated that special arrangements should be possible to make collective bargaining by publishers with the Soviets acceptable.)

Koch estimated in an article in the February 1974 *Physics Today* that AIP would have received \$300,000 in additional income if the copies distributed by the Soviets had been paid for at normal subscription rates. Under the new deal, Koch said AIP would receive a "good fraction" of that sum. He said he viewed the pact as a "desirable agreement for both sides."

Compared to AIP, the American Chemical Society had fewer bargaining chips and, from its standpoint, more to lose. ACS does not translate or reproduce Soviet chemistry publications, and the ACS asked the Soviets to pay nearly \$2 million a year to continue copying ACS publications at the same rate as before. *Chemical Abstracts* has been the thorniest issue. The regular ACS subscription price for *Chemical Abstracts* is now \$2900 a year, including the index. In 1973 the Soviets were paying for two subscriptions and were known to be photocopying *Chem Abstracts* in substantial numbers and selling them at a relatively low price in the U.S.S.R. and Eastern Europe. Now, under the interim understanding, the Soviets are buying about 50 subscriptions and have agreed to do no more systematic copying.

The experience of *Science* is fairly typical for publications which have reached agreement with the Soviets on royalty payments. Pre-UCC figures show that the Soviets were buying 13 regular subscriptions to *Science* and were distributing 560 photocopied versions in the U.S.S.R. and 211 in CMEA countries.

The Soviets reported that the cost of an "original" subscription to *Science* in rubles was 18.75 at the exchange rate of 1.29 rubles to the dollar. The price in the Soviet Union of the reproduced version was 59.80 rubles—about triple. For most American jour-

nals, the price of the photocopied version is lower than that of the original subscription. No explanation of pricing seems to be available from the Soviets except that they price the photocopied versions to recover costs. *Science* and some other journals with political or social science content that Soviet officials may regard as controversial are censored and, in some cases, page makeup is altered. The price of the Soviet edition of *Science* may, therefore, reflect the added editorial and production costs.

The agreement with the Soviets on *Science* concluded in December 1973 provided for a 10 percent royalty in exchange for reproduction rights. Last month AAAS received a check for \$3829.79, which amounted to most of the anticipated royalty payment for 1 year for 485 copies to be distributed in the U.S.S.R.

At the time of Soviet accession to UCC, some observers argued that a strong Soviet motivation was to block publication in the West of the work of Soviet dissident writers. It was suggested that if Western publishers ignored the control of the Soviet copyright agency over all Soviet works published abroad, the Soviets would repudiate the UCC. Some Western publishers went on record that they would publish dissident manuscripts, international copyright laws notwithstanding, and would expect to win any legal action which ensued. In the past year there has been no major test precipitated by a controversial work. But a number of Westerners have been told by Soviet contacts that, in effect, their government does not need the copyright law to stifle the dissidents.

Last month at the Frankfurt Book Fair, a major annual outing for the international book trade, a senior official of VAAP was both accessible and much sought after. Neither he nor the Soviet officials seem to stress that joining the international copyright community is a dividend of detente. But, he said that a major purpose of his agency was to promote international cultural and scientific exchange and spoke optimistically of major new initiatives with U.S. commercial publishers.

From the American side, some publishers have approached Soviet scientists to explore possibilities of their signing up as authors of books to be published here. This kind of free enterprise is fine with the Soviets so long as VAAP is on hand when a contract is written.—JOHN WALSH

Briefing

Interior Seeks to Open Naval Oil Reserves

Interior Secretary and energy superchief Rogers C. B. Morton has asked Congress for the authority to open up Naval petroleum reserves, which are now intended for development for national defense purposes only, to private exploration and development.

In a letter dated 18 October to the House Interior and Insular Affairs Committee, Morton suggested an amendment to a pending public land management act (HR 16800) that would enable the Secretary of the Interior to establish national petroleum reserves "on any reserved or unreserved public or acquired lands of the United States (except lands in the National Park System and, after December 31, 1983, the National Wilderness Preservation System)."

The amendment would appear to give Interior a free hand in selling oil leases anywhere except in national parks; but a spokesman says the intent of the wording is only to get around a recent court decision that forbids resource exploitation in any of the 15 million acres now under consideration for inclusion in the wilderness system.

The main purpose of the amendment, though, is to permit Interior to get at two Naval petroleum reserves: Pet I, in Elk Hills in California, and Pet IV, in Alaska. Elk Hills, wrote Morton, "constitutes the only immediately available source for increasing our domestic supplies of petroleum." Within 2 years, he said the reserve could be producing 270,000 barrels of oil a day. Pet IV, which is largely unexplored but which, according to some estimates, could contain as much oil and gas as Prudhoe Bay, would take a lot more time and money to develop, and Morton believes that the sooner private enterprise is unleashed in the area, the better.

Under existing law, the President and the Secretary of the Navy must agree that oil production in these areas is "required for the national defense," and Congress must concur. Morton wants the law changed so that Interior can make a unilateral decision (in consultation with, but not necessarily with the concurrence of, the Department of Defense) to turn parts of

Naval reserves into national reserves and open them up for private exploration and development. Congress would be given 60 days to veto the decision. A decision to develop these areas now, wrote Morton, is necessary because even an accelerated program of drilling on the outer continental shelf (*Science*, 15 November) will not suffice to decrease dependence on foreign oil.

Environmentalists regard Morton's proposal as just another piece in the rapidly accumulating pile of evidence that the Ford Administration lacks any serious commitment to conservation of national energy resources. Joe Browder of the Environmental Policy Center says the concept of opening up the Navy's reserves is not necessarily bad but, within the context of the "let's develop everything now" mentality of the Administration, the proposal is "not rational."—C.H.

Edelin Case Will Go to Trial

The case of the Commonwealth of Massachusetts v. Kenneth Edelin, the Boston City Hospital physician who has been indicted for manslaughter in the death of a fetus, is going to be heard in open court. Edelin was indicted by a Boston grand jury last April for allegedly killing a "baby boy" during the course of a legal abortion. The case raises a number of complex issues, among them the time when a fetus becomes a "legal person" and the point at which it becomes viable (*Science*, 25 October).

Those questions were the basis for motions to dismiss the case that Edelin's attorney, William P. Homans, filed with the court. He argued that a fetus is not a legal person, protected by the Constitution, and he argued that the particular fetus in this case had not reached the point of viability. Therefore, he maintained, his client could not have committed any crime against it.

Superior Court Judge James P. McGuire apparently was not sufficiently persuaded to throw the case out. After contemplating the matter for a couple of weeks, he denied the motions to dismiss, without comment. Edelin will stand trial after the first of the year.

—B.J.C.