# TRANSLATION POOLS - IDEAL AND REALITY*

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In recent years there has been a tremendous increase in scientific activity and publication throughout the world. New journals begin publication daily, if not hourly, and in a great variety of languages. Obviously, the monolingual scientist is at a considerable disadvantage in his efforts to keep up with advances in his field.

Foreign-language materials are very important to the U.S. scientist. Data compiled by Chemical Abstracts[8] show that the most important of the 50 original languages of articles abstracted in the 1958 volume were: English 50.5%, Russian 17%, German 10%, Japanese 6%, French 5.5%, Italian 4%. English thus produces one half of the total, and the top six languages account for over 90% of the abstracts. In some specialized areas, "foreign" languages are even more important. For example, in Section 8 of C.A. (Mineralogical and Geological Chemistry), English decreased from 33 to 24% between 1957 and 1960, while Russian increased steadily from 19 to 39%.[6]

Unfortunately, the U.S. scientist is not very good at reading this foreign-language material. Of the 167,000 scientists listed in the 1956-58 National Register of Scientific and Technical Personnel, about 82,000, or 49%, reported some ability to read material in at least one foreign language.[5] However, only 2,000 (or 1.2%) could read Russian, and only 300 (or less than 0.2%) could read Japanese!

Evidently, most U.S. scientists face a genuine language problem. There are several methods for overcoming this, and I shall discuss these briefly.

## METHODS FOR OVERCOMING THE LANGUAGE BARRIER

The most obvious and most satisfactory method would be to improve drastically the foreign-language training of U.S. scientists, so that each scientist would have a true reading knowledge of some (perhaps two or three) of the scientifically more important languages. But, this is a long-range solution. What can we do right now?

One method of keeping U.S. scientists informed is by publishing English abstracts of all non-English papers. C.A. is making a valiant and largely successful effort to do this in its fields of interest. But even if all abstracts appeared promptly, and were of uniformly high quality, scientists would still need to refer to the original articles in many cases. Translations of these articles are therefore not the luxury that Dr. Crane recently suggested in a letter in American Documentation,[4] but are vitally necessary. In fact, according to a recent study,[3] translation needs of the U.S. will increase at least three times, perhaps ten times, by 1970.

One widely used method of translation is cover-to-cover translation of selected journals, and last year the National Science Foundation spent over $1,000,000 in support of this program.[5] A recent list[9] includes 85 complete and six partial translations of Russian journals, though there are as yet no similar translations from other "critical" languages, such as Chinese or Japanese. Cover-to-cover translations have the advantage of easy bibliographic control: the translated journals can be subscribed to, circulated, and eventually bound or discarded like any other journals. However, there are many obvious disadvantages. First, at a time when publishers are kept busy publishing scientific information once, it seems wasteful to publish complete journals twice. Also, the number of available, competent, scientific translators is limited, and this activity may not be the best way of utilizing their special skills, particularly since many of the papers in these journals may be of limited value. The criterion for publishing translations of these papers should be: Would they have been accepted for publication if written in English and submitted to a reputable English-language journal? Finally, there is a considerable time lag, with some translated journals running as much as a year behind the originals. (However, an English translation of a Polish journal has been reported recently, which will appear simultaneously with the Polish original.[11])

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In the most common translation situation, a scientist requires a fairly prompt translation of a particular article. Unless he can obtain the services of a linguistically skilled colleague, or his organization has a translator on its staff, he will have to order a translation from a translation agency or freelance translator. These services are readily available in most large cities and from many universities, and, of course, vary quite widely in cost and quality.

Since many scientists throughout the U.S. have quite similar interests, it seems evident that, in many cases, translations of the same articles will be requested independently by several scientists. To avoid duplication of effort, it is clearly desirable to provide some means for determining whether a desired item has been translated already and, if so, for obtaining a copy of the translation. This, then, brings us to the subject of this paper--translation pools.

## EXISTING U. S. TRANSLATION CENTERS: OTS AND SLA

Indexed collections of translations have been in existence for many years in the U.S. In October, 1953, the Special Libraries Association Translations Pool was established at The John Crerar Library in Chicago. In 1956, the re-named SLA Translations Center took over the Russian translations formerly deposited in the Scientific Translations Center at the Library of Congress. The SLA center published frequent lists of its holdings, and in the fall of 1955 started publishing Translation Monthly. This publication listed new arrivals at the center, arranged under suitable subject headings. Each issue had an author index, and these indexes were cumulated annually. In the spring of 1958 an index card service was added. Subscribers could purchase cards for all items, or for those in certain subject areas only, as desired.

In January 1959, the SLA center entered into a cooperative project with the Office of Technical Services of the U.S. Department of Commerce. OTS now collects translations from foreign and domestic government agencies, while the SLA center collects material from foreign and domestic non-governmental sources. Attempts are made to obtain donations or loans of copies of translations from all possible sources, with the understanding that the anonymity of the contributor will be carefully protected.

All translations newly deposited in both centers are listed, with source and cost, in a semi-monthly serial, Technical Translations. This is published by OTS, and is the successor to Translation Monthly, which was suspended at the end of 1958, together with the card service, for which, at the time, there was insufficient subscriber interest. Copies of translations held by SLA or OTS are available, at cost of reproduction, in various forms (printed, photostat or microfilm). Translations available from various other governmental or commercial sources are also listed, with prices where available.

## TRANSLATION CENTERS IN OTHER COUNTRIES

Translation centers of various types exist in many other countries. In Canada, the National Research Council Library maintains a Translation Section, which prepares translations of foreign scientific papers requested by Council scientists. It publishes periodic lists of its holdings, which are also listed in Technical Translations. The Library maintains a card index to the location of completed translations in Canada, other Commonwealth countries, and the U.S., and requests Canadian organizations to check with the Index before translating, and to report or deposit translations when completed. However, the Library makes no attempt to obtain copies of all titles listed in its index, nor does it house translations as a separate collection. Its functions are therefore somewhat different from those of the SLA or OTS centers.[1]

In Europe, the most significant recent development is the establishment, by the European Productivity Agency, of the European Translations Centre at Delft, The Netherlands.[2] The aims of this center, which is to be financed by the Dutch government, are: "To make known to Western industry and research all existing Western language translations of Russian and East European scientific and technical literature, and to make available those which cannot be obtained through commercial channels." OTS will serve as the national liaison center for the U.S., and will provide copies of its translations on an exchange basis.

## QUALITY OF SERVICES PROVIDED BY OTS AND SLA CENTERS

Orders for copies of translations held by the centers are filled quite promptly and, of course, at a very reasonable cost. In the fiscal year 1959-60, OTS handled about 5,700 requests, involving some 12,000 items. No records were kept of the number identified. In addition, about 9,000 copies of items listed in Technical Translations were sold through the Sales and Distribution Section of OTS and the Photoduplication Service of the Library of Congress.[7] During a similar period, about 11,400 translations were sold by the SLA Center.[10]

My main comments on present services concern completeness of holdings and promptness and accuracy of announcement of new additions.

First, size of holdings: The SLA center currently holds about 42,000 translations, about 9,000 of which were supplied by OTS. An average of 700-800 translations are received per month, about equally divided between governmental translations received via OTS and non-governmental ones received directly by SLA. These figures do not include translations available from OTS in printed form. About 200 non-governmental organizations regularly contribute translations to the SLA center.[10] It probably is safe to say that these holdings and additions represent only a fraction of the translations being produced in the U.S. Some reasons for this lack of support may be lack of incentive (which will be discussed later) and fear of endangering the contributor's interests--I know of several cases where copies of translations were received from the SLA center without the contributor's identity being removed.

As for accuracy of the listings: Many glaring errors have been found in the names of authors and journals in the various indexes.

Announcements of new holdings involve some delay. It takes several months for new acquisitions to find their way into Technical Translations. One reason for this may be that this publication contains some material that is, in my opinion, of dubious value. There seems little need for abstracts of translated articles, when abstracts of the original article will already have appeared in the various abstract journals. Another feature that might well be is the section "Translations in Process." Recently, after waiting for over a year to be notified of the availability of one such item, I sent a follow-up letter to OTS and was informed that this translation had been cancelled some time ago. As a result of this experience, OTS is now taking steps to improve its follow-up system for translations in process. Incidentally, the author's name was misspelled (in two different ways) both in the original announcement and in the notice of cancellation.

Another problem is that of indexes: The six-month cumulative indexes to Technical Translations contain author, journal, subject, and translation number indexes. I believe that most scientists would be satisfied with only author and journal indexes, since they usually wish to know whether a particular article has been translated. Few scientists will have the time to browse through the subject index, since they can get a much prompter and more thorough coverage of their fields of interest from the abstract journals. A reduction in the number of indexes might also speed up their publication (the cumulative index for July-December 1959 was not announced until November 1960).

In closing this discussion of existing translation centers, it should be mentioned that the SLA center, with the aid of a grant from the National Science Foundation, is currently conducting a study of translation activities in universities, societies and industry in the fields of science and technology. The stated purpose of the survey is ". . . to appraise the potential in these areas in order to increase the holdings at the Center thereby making it a more effective tool. . . ."

## PRIMARY FUNCTIONS, AND FINANCING, OF THE IDEAL TRANSLATION CENTER

After our brief look at existing translation pools, let us summarize the problems to be solved and suggest some possible means of solution.

It is extremely unlikely that U.S. scientists will, in the foreseeable future, acquire a good working knowledge of all major scientific languages, or that scientists in other countries will decide to publish in English. Abstracts and cover-to-cover translations will provide a partial solution to the language problem, but these are a complement to, not a replacement for, translations of individual articles. Translating machines are not likely to provide translations of satisfactory quality in the immediate future. And, it cannot be emphasized too strongly that, whereas a poor literary translation may provide some esthetic anguish, an inadequate scientific translation is, literally, worse than useless.

There is thus a real need for translations of individual items and for an efficient translation center to administer them. The primary functions of such a center may be divided into five parts: collecting, processing, announcing, and distributing translations, and acting as a general clearing house for all matters involving translation.

Collection of Material.--The center should make vigorous and continuing efforts to obtain copies of all translations produced in the U.S. both privately and by government agencies. It should obtain promptly listings of all translations available from commercial translation agencies. It should cooperate to the fullest possible extent with all other national translation centers, preferably by exchanging copies of all translations, or, if this is not possible, by exchanging lists of holdings.

Processing of Material.--Upon receipt by the center, all translations should be carefully scrutinized. The accuracy of the author's name and journal reference, and the completeness of the translation should be checked. While there is no reason for not accepting partial translations of books or lengthy articles, there is ever reason for not cluttering up the holdings with very fragmentary translations. Also (and this is admittedly difficult to do) it would be very

helpful if incoming items could be spot-checked for quality of translation by competent translators, who would reject obviously unsatisfactory items. Finally, to protect the contributor's interests, all information identifying the source of the translation should be removed. This includes not only the name of the translator or contributor, but also such things as distribution lists. The translation is now ready for filing, and accurate author and journal cards should be prepared for it. Some standard form of journal abbreviations should be used, and one of the many available transliteration systems for Cyrillic and oriental alphabets should be selected and rigidly adhered to. Where the translator has used a different system, the authors' names should be retransliterated. It should then never be necessary to look for a paper by any particular author in more than one place in the author index. Subject cards of some type could be prepared, but, as I have stated previously, I doubt whether these would be of much use to the customer. Finally, each item is given an accession number, and is now a permanent part of the holdings.

Announcement of Holdings.--I have already stated several criticisms of the present medium, Technical Translations. I will now go further to venture the opinion that all published lists are inadequate. The reason is quite simple: After a scientist has decided that he needs a translation of an article, he or his librarian may have to spend an hour or more in looking through the various indexes to determine whether the translation is available from one of the pools (Remember that the cumulative index to Technical Translations is presently running around a year, or 24 individual issues, late, and that several cumulative indexes to this publication, and indexes to its various predecessors, will have to be consulted. In fact, if the article to be translated is quite short, it may be faster to prepare a new translation without consulting any translation lists.) If no listing is found, a translation will be ordered. But, since all listings are several months old by the time they reach the subscriber, there is always a distinct possibility that the desired translation (particularly if it is of a fairly recent article in a field of general interest) may have arrived at the center in the meantime. Obviously, the only really current listing is that of the author and journal card file maintained at the center, and the only way to obtain up-to-date information on the availability of a translation is by direct consultation of this file. This could be done in two ways: First, direct telephone and teletype service to the file should be available, staffed by competent reference assistants, who would be on call full-time to check the availability of translations. Second, a special form should be provided (a suggested form is shown in Fig. 1) for making inquiries by mail. Using such a form, it would take literally only a matter of minutes to provide the desired information and start the card on its return journey to the customer. The elimination of Technical Translations should make manpower available to provide the services described above. If, in addition to these services, a printed medium of announcement is to be used, then I believe that a prompt index card service would be much more valuable than Technical Translations. By filing the cards in the manner most useful to him, each subscriber could use the card service to build up his own up-to-date translation index.

Fig. 1.—Suggested inquiry form to be used for national translation center

Card A—Inquiry Form

FRONT: Address of national translation center (printed)

Is a translation of the following item available?

(Please give as full reference as possible .)

Journal _____
Title (Do not abbreviate)

_____
Vol. No. Pages (Inclusive) Year

Author(s) _____

Title of Paper _____

_____

Card B (prepaid) - Reply Form

FRONT: Inquirer's address (to be filled in by inquirer)

The item requested is:

Available from center ☐

Available from _____
(Other Source)

COST Microfilm _____

Photoprint _____

Printed _____

Not listed in center's files ☐

Cards A and B are parts of a standard double postcard. Card A is returned with Card B by center.

Distribution of Translations.--One of the most important factors here is speed: Every effort should be made to fill requests as rapidly as possible, preferably within 24 or 48 hours after receipt. To simplify bookkeeping and billing, deposit accounts or prepaid coupons should be strongly encouraged.

As I mentioned earlier, it is my belief that only a small fraction of the translations produced in this country is finding its way into

existing translation pools. I believe this is because there is no incentive, other than the altruistic motive of helping others, to contribute translations to the pools. Many organizations are contributing large quantities of material without finding much of interest to them in the pools, and there must be many "free-loaders" whose situation is the exact opposite. I believe strongly that active contributors to our ideal pool should get some tangible reward--either a discount on purchases from the pool or a certain amount of material entirely free of charge.

But where will the money for this center come from? I believe that the center, if properly run, could be made to pay its own way. First, a graduated system of charges, perhaps similar to that used by Chemical Abstracts, should be set up. There is a vast price range between the $20 to $30 per 1000 words charged for a custom-made translation, and the $1 or so presently charged for an equivalent amount of translated material from the SLA or OTS pools. Costs to individuals could be kept at or near present levels, with universities and private industry paying somewhat higher rates. I realize that this pricing scheme would involve copyright problems, but I am sure that these could be solved satisfactorily. (Incidentally, the European Translations Centre plans to sell copies of translations at cost of reproduction plus a small charge for overhead.) Second, I believe that commercial translation agencies using the center as a means of advertising their wares should pay for this service, either as a flat annual fee or as a small percentage of the business brought to them by the center. Since a comprehensive, up-to-date listing by the center would enable the agencies to dispense with a good deal of their present advertising, a charge for this service would seem justified.

If, in spite of the above measures, the center is still running at a deficit, this would have to be made up by support from industry or government or both. To give an idea of the money involved, I might mention that the SLA center's current annual costs are $51,000.[12] About half of this support is provided by NSF, and the other half by OTS, which has an annual budget of $510,000 for its translation activities.[7]

## OPERATION OF THE IDEAL TRANSLATION CENTER. OTHER SERVICES

I believe that one large, centralized, national translation center should be set up to handle translations from all sources, all languages, and all branches of science and technology. Since two translation centers are already in existence, it would seem desirable, if possible, to use one of these as a nucleus for our ideal center. My choice would be the SLA center, for two reasons: First, I believe that government should provide only those services that private individuals cannot provide for themselves. Second, the SLA center has been in existence much longer than the OTS center, and therefore has the greater experience.

The ideal center should be run by a fully professional, highly competent staff. Many of the SLA center's difficulties in the past probably can be ascribed to a rapid turnover in directors and to inadequate and insufficiently trained personnel.

In addition to handling the national translation pool, the center should sponsor realistic research in translation matters. For example, while unlimited funds seem to be available to support research in machine translation, no one seems to be doing anything about improving the competence, status, or utilization of that forgotten man, the human translator. Surely his days are not numbered yet!

The center should act as a clearing-house and information center on translations in progress. Individuals and organizations planning or starting translations of books, monographs or other lengthy works should notify the center, so that anyone with similar but later intentions will be forewarned that someone else is already working on the same project. To avoid the type of situation mentioned earlier in connection with the "Translations in Process" section of Technical Translations, cancellations or changes in plans should be reported promptly to the center.

The center could also serve as an intermediary for new translation projects, by putting potential producers and consumers of particular translations in touch with each other.

Finally, the center could put out a periodic newsletter similar to the National Science Foundation's Scientific Information News to publicize its activities, to publish periodic lists of cover-to-cover translations, to carry news of bona fide and significant translations in process, and the like.

## CONCLUSION

There is a genuine need for a top-notch national translation center. I hope that the funds and personnel to establish such a center will be forthcoming, and that my comments may help to speed its establishment.

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## NSF GRANT

The National Science Foundation announced recently a grant of $56,000 for a one-year study of chemical notation systems, to be conducted by the National Academy of Sciences-National Research Council (NAS-NRC). The study will be directed on a part-time basis by Dr. I. Moyer Hunsberger, Dean of the College of Arts and Sciences, University of Massachusetts. He will be assisted by an advisory group, which will include representatives of the NAS-NRC Committee on Modern Methods of Handling Chemical Information and of other interested organizations, such as the American Chemical Society, the American Institute of Chemical Engineers, and the Pharmaceutical Manufacturers Association. The study will be administered jointly by the Division of Chemistry and Chemical Technology and the Office of Documentation of the NAS-NRC.

The purpose of the new study is a thorough analysis of the characteristics of the various systems, the similarities and differences among them, the uses now being made of them, the criteria which led to their adoption or development, the problems encountered in their use, the potentialities of each system for more widespread use, the needs not met by existing systems, and the purposes that might be served by agreement among chemists on the use of one or more standardized systems.

Persons and organizations working with chemical notations are invited to send information about their systems to Dr. I. Moyer Hunsberger, Dean, College of Arts and Sciences, Bartlett Hall, University of Massachusetts, Amherst, Massachusetts.