The next step in this process of compression is the selection of papers to be reported in review articles.

It can happen that the quantity of informative abstracts and critical reviews may be small enough to allow for translation into several national languages on a reasonable economic basis.

17. Another procedure has been discussed which might help to overcome language barriers, namely the problems of how to draw attention to important scientific papers written in any language, and from anywhere in the world: In each country the "top learned society" in a special field or a National Academy of Science could make a proposal which publication in its realm it regards to be of high importance, *measured by world standards*. This proposal should go to an ICSU-Unesco standing committee, which would provide the translation into one or more languages, generally used in scientific communication. These selected papers should be printed in a special issue of a scientific journal having a wide circulation. Specialized journals of international character are to be preferred for that purpose.

The costs for these translations and the publication should be paid for by the international body, but the respective National Academy should be responsible for the selection. If this selection is not done carefully enough and should prove below world standard, this will lower the reputation of the responsible academy and of the author. Therefore, this mechanism will work as a rule. The number of papers proposed for this collection of outstanding publications could be allotted to the national bodies according to the percentage of publications from this country in the worlds scientific literature. By this procedure papers otherwise buried by language difficulties or in journals of low circulation could be made known world-wide. This might be an effective help for developing countries too.

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An Outline of International Terminological Activities

Felber, H.: **An Outline of International Terminological Activities.**
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Consise survey on the areas of work in terminology, existing in (1) establishing teminological and lexicographical principles (work done within the ISO/TC 37), (2) in preparation of terminologies in particular subject fields and (3) in documenting ongoing terminological work and results of such work. Regarding the latter the tasks of Infoterm are listed and the specific forms of terminological data documentation are shortly explained. (I. C.)

1. Definition

The term "terminology" has a double meaning, namely: *Terminology*[1] is the aggregate of terms representing a system of concepts of a particular subject field *Terminology*[2] is the theory of terminology, which is an interdisciplinary field comprising linguistics, logic, information sciences and individual subject fields.

2. Importance for information

Terminology is fundamental for information: on the one hand it serves to word the information, on the other hand terms are used for indexing, storing, and retrieving the information. Thus specialized vocabularies, called thesauri, are prepared as documentation languages.

3. Three areas of work in terminology

Terminological work can be divided into three areas, namely in:

3.1 Establishing terminological and lexicographical principles
3.2 Preparation of terminologies in particular subject fields
3.3 Terminological documentation

3.1 Terminological and lexicographical principles

This work is carried out by the Technical Committee 37 "Terminology (principles and co-ordination)" of the International Organization for Standardization (ISO). The Secretariat of ISO/TC 37 is held by the Austrian Standards Institute in Vienna.
So far, ISO/TC 37 prepared the following six ISO Recommendations and one ISO Standard:

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ISO/R 1087–1969 "Vocabulary of terminology"
ISO/R 919–1969 "Guide for the preparation of classified vocabularies"
ISO/R 704–1968 "Naming principles"
ISO/R 860–1968 "International unification of concepts and terms"
ISO/R 1149–1969 "Layout of multilingual classified vocabularies"
ISO/R 639–1967 "Symbols for languages, countries and authorities"
ISO 1951–1973 "Lexigraphical symbols"

These terminological and lexicographical principles are applicable to all disciplines and to all languages. Application of these principles will make it possible that the results of terminological work are unified and can be exchanged.

3.2 Preparation of terminologies in particular subject fields

One should distinguish between lexicographical and terminological work. Lexicographical work mostly consists of collecting terms of a particular subject field and to present them as lists of terms, translation vocabularies, etc.

Terminological work, however, comprises investigation into relationships between concepts (genus-species, part-whole and so on), construction of the systems of concepts, and the definition of concepts.

This work is preferably to be the responsibility of commissions of experts working in the subject field concerned. These systems of concepts are also the basis for the preparation of structured documentation languages, i. e. thesauri.

3.2.1 Standardization of terminology

Language includes two "standards", namely the "is-standard" and the "should-be-standard".

The "is-standard" represents the established usage.

The "should-be-standard" is recommended or prescribed by an authority. In the narrower sense such standards are agreements arrived at by terminological commissions working in national standards institutions. In the broader sense, standards are recommendations of terminological commissions working in national or international organizations.

Difficulties in communication mostly arise because of an ambiguous terminology. Therefore, it is the objective of standardization of terminology to enable unambiguous communication by standardizing concepts, systems of concepts, terms and definitions by competent terminological commissions of experts.

These terminological commissions prepare the terminology of their respective subject fields which is then recommended or prescribed by an authority. Terminological commissions of national standards institutions examine terminologies existing so far, and prepare the standardized terminology for a certain subject field. This procedure also provides for the submission of the results to the public for comment, discussion, and possible consideration of these comments. On the international level ISO follows a similar procedure. Their national standards institutions participate in the work of ISO. In the broader sense any national or international organization could standardize the terminology of their respective subject field and thus help forging the tools für unambiguous communication.

3.3 Terminological documentation

Terminological work is very expensive and requires the co-operation of highly qualified specialists. Furthermore, preparation of terminologies is rather time-consuming. Therefore, any duplication and waste of effort should be avoided. This can be achieved by terminological information and documentation and, based on it, by planning of terminological work.

Terminological documentation can be divided in:
3.3.1 Literature documentation (Infoterm)
3.3.2 Data documentation (Conventional vocabularies and terminological data banks)

3.3.1 Infoterm

In October 1971 the International Information Centre for Terminology (Infoterm) was established at the Austrian Standards Institute in Vienna with the assistance of Unesco, within the framework of UNISIST.

The centre has the function to co-ordinate the terminological activities going on all over the world. This will be done in two different ways. One form of co-ordination consists in *documentation and information*, i. e. in the following measures:

- Collection of terminological publications from all over the world, particularly of terminological standards and principles and of specialized dictionaries.
- Information on terminological libraries and – as far as possible – on their holdings.
- Extensive dissemination of information on terminological publications which are already in existence or are in preparation.
- Information on terminological courses; providing advice to institutions, particularly in developing countries, when terminological projects are being undertaken.
- Investigation into the possibility of interconnection of terminological word banks.

No specific subject field or language should be excluded.

As another form of co-ordination the *planning* of terminology work by an international committee of about 10 highly competent experts is envisaged. The centre will assume the management of this committee and will advise it from the point of view of documentation. The experts themselves should be representative of the most important groups of disciplines.

This second form of co-ordination, i. e. the establishment of a co-ordinating committee can be started only at a later date.

3.3.2 Data documentation can be divided in:

3.3.2.1 Conventional vocabularies
3.3.2.1 Terminological data banks

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3.3.2.1 Conventional vocabularies

Terminological data are collected, stored in card files and mostly published as lists of terms, glossaries, vocabularies, etc.

The standardized terms and definitions of the British Standards Institution (BSI), United Kingdom, is an example for such a terminological data collection.

3.3.2.2 Terminological data banks

There are also terminological documentation services in existence which collect terminological data (facts), i. e. individual concepts (definitions), terms, equivalents in other languages and the like. These data are stored in a computer in order to be able to retrieve quickly not only any information on a given concept but also to produce quickly upon inquiry different types of lists of terms which may be needed for special purposes.

Such terminological data banks exist in Canada, France, Germany, Sweden, USSR. Some of them collect standardized terminology (for instance ISO, France, Germany, USSR). It will be necessary in the near future to establish interconnections of these word banks to increase their efficiency.

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REPORTS AND COMMUNICATIONS

An Indexing Manual for PRECIS

1. Introduction

PRECIS, or the *PRE*served *C*ontext *I*ndex *S*ystem, is a computer-assisted method for producing alphabetical subject indexes to collections of documents and other media. Its development has been entirely pragmatical, though the basis for the system can be traced back to the NATO-supported research into a new faceted general classification which was carried out by the Classification Research Group in London during the period 1964–1969. In a later project, based at the British National Bibliography and funded by the Office for Scientific and Technical Information, the citation formula developed during the CRG research was first applied to strings of words rather than elements of notation, the object being to devise an indexing system which could be used by the *British National Bibliography* when it adopted computer production. It soon became apparent that a citation order which is suitable for a classification scheme (based on the relative 'significance' of each element in a compound subject) does not necessarily lead to the production of meaningful index entries when it is applied to terms selected from natural language. During the period 1970–1973 a number of changes were made to the citation order formula. Each change showed an increasing tendency towards the organisation of terms into strings according to their grammatical functions rather than their relative significance, and the final version of the system, established during 1973, is based quite firmly upon grammatical principles derived from a study of sentence structures. A history of these developments, together with examples showing the need for certain changes, has been reported in the *Journal of Documentation*[1]. The classificatory background is dealt with more extensively in a different but complementary paper[2].

The "Manual" which is the subject of the present preview[3] is a substantial work of over 500 pages. Over a third of this consists of appendixes, the longest of which contains the algorithms and flow charts on which the computer programs are based. Every technique of string writing and reference construction is demonstrated with examples; consequently, a large part of the actual text consists of examples rather than narrative. The text is also interspersed at various points with self-test exercises, the answers forming one of the appendixes. The theories on which PRECIS is based are also briefly described, particularly where such explanations might help an indexer to resolve a problem through reference to the appropriate underlying principle.

The system differs in some respects from traditional indexes and subject headings, insofar as PRECIS consists essentially of a set of working procedures, not a pres-

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