ON ABSTRACT AND ABSTRACTING

The qualities that an abstract should possess and benefits that accrue from an abstract have been outlined. Kinds of abstracts (i.e. informative and indicative); types of abstracts (i.e. author abstracts, subject-authority abstracts, etc.); standards & general rules for abstracting, and the steps involved in abstracting have been discussed.

THE BOOK REVOLUTION

The size, growth rate, and, above all, the complexity of records of human communication, as we find today, have been causing alarming concern to those engaged in enlarging the bonds of human knowledge and with it the progress of the society in which we live in. This is, however, not a new phenomenon: In 1851 Joseph Henry (1) Secretary of the Smithsonian Institute, speaking of the 'literature explosion', had warned that "... unless this mass be ascertained, literature and science will be overwhelmed by their own unwieldy bulk. The pile will begin to totter under its own weight, and all the additions we may heap upon it will tend to add to the extension of the base without increasing the elevation and dignity of the edifice!" Suggesting remedial measures, however, he said, one of the most important means of facilitating the use of libraries "... is well digested indexes of subjects, not merely referring to volumes and books, but to memoirs, papers and parts of scientific transactions and systematic works".

This he had said, when, according to his own estimate, about 20,000 volumes and pamphlets, were published annually in the world. This number, however, far exceeds today, just in one country alone. Besides, book publication is also increasing every year at a faster rate. According to Verner Clapp (2), this increase, in 1949, was 6 times faster to that of the population of the United States itself. The current output of periodical articles, is even more alarming. The number of useful scientific and technical articles, appearing in the late 1930's, was estimated to be around 750,000 a year. In yet another estimate, presented in the UNESCO Conference on Science Abstracting (1949), this figure was placed around 1,850,000.

Later, in 1958 it was raised to 2,500,000. Th. P. Loosjes (3) calls this growth onslaught as an 'operation deluge'. But the 'deluge' does not seem to subside. In certain scientific disciplines, such as Chemistry, this has resulted into an 'Information explosion' producing as many as one usable document every minute.

The slanting to Science and Technology in the preceding discussion should not be construed here to suggest that the areas in Social Science and Humanities, are devoid of such an alarming situation. On the contrary in Asia itself, which includes Japan and India respectively as the 5th (31,074 books and the 8th (15,175 books) largest book producing countries of the world in 1972 the rate of increase in publications, in the areas of Social Science and Humanities is far more than in that of Science and Technology, as would be evident from the book statistics. Out of 68,277 books published in Asia (1972), only 13,132 (i.e. 19%) titles account for Applied and Pure Sciences. Again, the frequency of title dispersal in the literature of Social Sciences and Humanities, throughout the world, is greater than that in Science and Technology. A good example of this dispersal, is Vannevar Bush's widely-quoted article "As We May Think", in a popular non-scientific journal Atlantic Monthly (vol. 176 July 1945), pp 101-08. This article, in effect, lays the foundation of the much-talked "Mechanized Information Retrieval" of our time although the journal in which this article was published by no stretch of imagination can be taken to be a Science journal.

The problem of easy access to the printed word becomes far more acute in a developing country which lacks mechanism to control them. Here, the twin challenges of the growth of literature and the increasing desire of the people to learn newer methods of learning and inquiry are met with the melancholy of inaccessibility to the printed word. The literature has grown much in size and substance and, therefore, demands timely and organized bibliographic control; more so in a developing country where duplication of resources and researches may be at the cost of country's national growth.
Abstracts in this context, play an important role in serving the 'mind of men' as D. J. Foskett, puts it; it helps provide current awareness of the state-of-art on one's research problem and leads to access to and consequently to closer insight into the literature of the day, amassing in quantum. Fred A. Tate and James L. Wood (4) regard abstracting and indexing as "merely extensions of the overall library function". For, abstracts, like library catalogues, according to them, eventually lead users "back to the originals that libraries are expected to furnish". They also call library catalogues as 'skeleton abstracts' and libraries as 'bibliographic retailers'. -But the accessibility to literature as contemplated above is always open to the following problems:

1. The physical impossibility of reading and associating in one's memory all the literature that has reasonable probability of being useful to one's problem.

2. The economic impossibility of acquiring or exploiting a major part of the literature that may be useful for one individual or organization.

3. The failure of the traditional library tools to cope effectively with all the detailed requirements of their readers.

ABSTRACTS AND THE SPATE OF LITERATURE

Broadly speaking an abstract provides 'a brief summary that gives the essential points of a book, pamphlet or article'. A good abstract, however, should possess the following qualities:

1. It should be informational, clear, accurate, precise, reasonably brief (E. J. Crane)

2. It should make available complete information; inclusion or specific reference to every measurement, observation, method, apparatus, suggestion and theory, which is presented as new and of value in itself (E. J. Crane)

3. It should present new data, which may not have been reported previously in the literature (E. J. Crane)

4. It should be as brief as possible but not at the cost of its clarity (E. J. Crane)

5. It should not include any criticism (G. M. Dyson)

6. It should also include negative results (G. M. Dyson)

7. It should be written in the third person (Royal Society Conference, 1948)

8. It should assume that the reader of the abstract has some knowledge of the subject but has not read the paper (Royal Society Conference, 1948)

9. It should usually begin by stating the subject unless it is obvious from the title (Royal Society Conference, 1948)

10. It should include author's own view on the possibility of applying results described in it (A. L. Mikhailov)

11. There should be minimum possible time lag between the publication of the original document and the abstract (C. L. Bernier)

12. It should include an index (C. L. Bernier)

13. The price of abstracting journal is also a quality factor; high price limits use of abstracts (C. L. Bernier)

14. A good printing, compactness and improved legibility of the text and usable format adds to the usability of an abstract (C. L. Bernier)

It would be appropriate to pose here the question that Barbara Kyle (6) directs to the abstractors in the field of Social Sciences. The answers to these questions according to her, make a good abstract.

(a) What was/were the point/s which the author intends to make in the article abstracted?

i) Survey of knowledge of the subject?

ii) Some new thesis or angle on the subject?

iii) Some particular angle on the subject? If so, what?

(b) What is the author's standing in the field?

(c) What evidence is offered?

USERS OF ABSTRACTS

According to Bernier (7) the benefits accruing from the abstracts can be summed up as under:-

1. Abstracts generally bring together briefs of many language papers and articles in one language. Hence, the user needs to know only one or at least two languages to scan the literature of his subject through abstracts.
2. Abstracts facilitate selection of documents for actual use and reading from a huge bulk of more than 200,000 papers appearing every year.

3. Information contained in abstracts substitutes for the original literature in many cases.

4. Abstracts are more convenient to arrange and use in retrospective search in relation to relevant materials on the subject than it may be possible with the original literature. Classified abstracts serve a useful guide to the literature as well.

5. Abstracts help save lot of time in literature searching.

6. Retrospective searches are also made easier through cumulative indexes of the abstracts.

7. Abstracts provide more accurate information about literature than other searching tools, such as catalogues, bibliographies, indexes and trade announcements.

8. It is easier to copy, cut, and paste abstracts.

9. Abstracts are helpful for writing reviews, preparing talks and compiling bibliographies.

KINDS OF ABSTRACTS

In general abstracts are of two kinds:

1. Informative Abstracts
2. Indicative or Descriptive Abstracts

The difference in the two lies in their specificity; the Informative Abstract, for example, will describe a study on "use of public libraries in Karachi" as under:

"KMC libraries, studied in 1975, show lack of access to 28,000 volumes contained in them. Further, only 4% use is made of the remaining collection (62,000 volumes) in the libraries surveyed".

The Indicative or Descriptive Abstract, on the other hand, will suffice to say:

"The non-use and inaccessibility, of the KMC libraries, in 1975, was determined and reported".

The Informative Abstracts, however, are more widely-used and are in great demand compared to the Indicative Abstracts. Allen Kent (8) groups these types of abstracts under Traditional Abstracts. To this category he adds Extracts, and Stylized Abstracts. Extracts, according to him, is analogous to an abstract and is drawn in direct quotation form from the abstracting paper. When, machines are used to select extracts, the resulting abstract is called 'auto-abstract'. The Stylized Abstracts, on the other hand, are those abstracts which are designed to increase the consistency of their analysis, reliability for their exploitation; and, potentiality for automatic processing. In this category, when abstracts use some general guidelines to extract information from the source material under given headings such as (purposes, procedures, findings). The resulting abstract is called Formatted Abstracts. But when they use 'headings' or 'role indicators' in conjunction with subject matter selected from source material such an abstract is called Telegraphic Abstract, but the use of symbols to represent a defined set of role indicators, make them different abstracts called Schematic Abstracts.

However, when abstracts include some elements of criticism they are called Critical Abstracts, but such abstracts are generally discouraged by experts on the ground that authors of abstracted documents would also want to reply to the criticism contained in the abstracts for which abstracting journal would not find time and space to publish them. Hence, they argue such abstracts should not be permitted. Further, they plead, even the abstractors may not have enough insight to newer ideas discussed in the documents in many cases. They, however, permit the use of quotation to indicate an author's point of view where an abstractor may be feeling uneasy in subscribing to what has been said in his abstract.

TYPES OF ABSTRACTS

Abstracts are further grouped by the type of their abstractors, such as, author abstracts, subject-authority abstracts and professional abstracts. The author abstracts are written by the author of the paper or article. Some journals, like American Documentation (now Journal of American Society for Information Science) require their contributors to send abstracts of their contributions along with the manuscripts while the editor of Herald of Library Science prepares on his own, the abstracts of the articles selected for publication in the journal. Author abstracts are prompt but prone to variations in quality and at times they tend to be more like 'pseudo-abstracts' (Pseudo-abstracts has been defined by T.E.R. Singer (9) also as an abstract of such a paper which has not yet been and may never, be written although its abstract was outlined, written in a hurry to meet some deadline).
However, increasing use is being made of good author abstracts in the primary literature. These abstracts are generally more detailed. They are therefore also used as a basis to develop it in reduced and edited form for publication.

**Subject-authority abstracts,** on the other hand, are prepared by specialists, with knowledge of a field and training in abstracting. The quality of such abstracts is always good but usually at the cost of much-needed promptness since these specialists prepare abstracts in addition to their own normal duties in the field of their specialization and hence have little time for abstracting work. Professional abstracts, however, have the advantage of control on time, format and standard with added benefit of language efficiency. These abstracts, however, lack the specialist's facility of background and knowledge in the case of the subject authority abstracts.

There are varied opinions about the merits of or otherwise of these types of abstracts. The findings of an Association of Special Libraries & Information Bureaux (ASLIB) inquiry (1932) addressed to scientific organisations, favour author abstracts if it is written from the viewpoint of users. But according to a survey conducted by the Royal Society (1948), only 7 out of 30 abstracting services use author abstracts as a regular feature; only frequently and 18 intermittently to a lesser or greater extent. The FID-UNESCO Survey (1949) on the other hand, shows even lesser use of author abstracts.

Nevertheless, author abstracts still continue to be used for reasons of content and more for saving of time in their preparation. The Biological Abstracts, for example, use a large number of such abstracts. The Library and Information Science Abstracts has also started using them when available.

Two abstracts of one and the same paper when compared however, show a marked variance. A good example of this is the article on 'A Film System for the Duplication of Termatrex Cards', by C.W. Baker and others, published in American Documentation (now, Journal of American Society for Information Science) 18:55-58, April 1967, with an author abstract, has also been abstracted by M.J. Roberts in Library Science Abstracts (now, Library and Information Science Abstracts) 18:368, October-December, 1967. The two abstracts are reproduced below for comparison:

**Author Abstract**


The Termatrex information retrieval system, marketed by the Jonkers Business Machines, Inc. uses large plastic cards containing drilled holes. Duplicating the plastic cards to make identical copies for distribution required multiple drilling and is costly, time-consuming and error-prone. The Eastman Kodak Company has developed a method of photographing the plastic cards on cut sheet film approximately one-half the dimensions of the Termatrex cards. The film sheets can be manipulated in the same manner as the original plastic cards. The problems of supplying duplicate decks is easily handled by photographic copies of one original Termatrex deck.

**Subject-authority Abstract** (Library and Information Science Abstracts).

The Termatrex information retrieval system utilizes plastic cards containing drilled holes. Each card represents a descriptor, and each hole in a given card represents a reference. Superimposition of the cards makes it possible to note which holes are in common. Duplicating the plastic cards to make identical copies for distribution required multiple drilling and is costly, time-consuming and error-prone. The Eastman Kodak Company has developed a method of producing black and white film duplicates of Termatrex card deck. Film cards can be superimposed and used in the same manner as the Termatrex cards. The size of the film card is approximately half that of the Termatrex card. A plastic viewing plaque has been constructed to facilitate the reading of the locants and the film cards and the storage modules have been corner out to ensure proper orientation.

The difference between the two is more of detailed information from the viewpoint of users in the subject-specialty abstracts than for any other reason. The two versions are largely common in their verbatim reporting except a few changes here and there.

**ABSTRACTING SERVICES**

Consequent to the 1957 Sputnik success, a good number of abstracting services were established in the United States to speed up the work of literature processing to catch up with the advancement in space technology; so much so that a National Federation of Science Abstracting and Indexing Services (NFSAIS) was established in 1958. In the process of this development, mechanics of information extracting, its storage and retrieval received much of attention. Computers were also used to make this process quicker and faster (10).

Libraries are major consumer of such services but no dialogue exists between the users and processors of these services. Some attempts were made by a few of the services in the United States to improve the situation.
States to limit the number of abstracting/indexing periodicals according to the needs of the library users but they were criticized for thus inhibiting inclusion of non-used periodicals in their services and thereby reducing the size of their coverage (11). Similar feedback provided by the National Lending Library for Science and Technology, Boston Spa in England [NLL, now called Lending Division of the British Library], to the Abstracting and Indexing Services in England has, however, resulted into wider coverage of the literature.

The structuring of subjects in abstracting services, however, divides them in two groups. One is called Discipline-oriented services directed to the advancement of knowledge in an academic field. The Mission-oriented services, as opposed to this, attempts at the 'solution of a complex problem in a society' (12).

STANDARDS FOR ABSTRACTING

The abstracting services usually prepare and follow written manuals for purposes of uniformity and even then variations in substance, length and structure are very common between abstracts of one service and also between one service and the other. Even departments/divisions within one library (Library of Congress), at times, follow differing practices according to their own policies (13). Here again, the format, the form of headings and indexing practices also differ to a larger extent. National standards on the preparation (editing) of abstracts are in vogue in Argentina, Belgium, Brazil, Czechoslovakia, the German Democratic Republic, France, Hungary, India, Poland, Portugal, Romania, Turkey, USA and Venezuela (14). All standards require, in the main, brevity, conciseness and precision, use of standard abbreviations and symbols, objectivity, and factual-treatment of the texts, abstracted, but most of them differ in structure and formulation between themselves. Barring Hungarian and Polish standards, none of the other prescribe standards for subject headings and translation of titles. A worldwide guide for preparation of author's abstracts is, however, in the process of finalization under the aegis of International Organization for Standardization/Technical Committee 46 (ISO/TC46).

The American Standard Periodical Title Abbreviation (New York: United States of America Standards Institute, 1963. 1 USASIZ 39.5-1963 I) is an attempt to correct faulty linkage between the citation and document. The American Society for Testing and Materials (ASTM) has devised another five-character machine readable Coden System for periodical titles. The World List of Scientific Periodicals (1900-1960), (London: Butterworth, 1963-65) (15) also publish abbreviated periodical title's but mutually exclusive for each word in the title. The Chemical Abstract Service (CAS), Comprehensive List of Periodicals for Chemistry and Chemical Engineering, therefore, contains four forms of titles [1-The full title of the journal, 2-The full title abbreviated according to the American Standard, 3-The ASTM Coden; and, 4-The AAC rules] (16).

GENERAL RULES FOR ABSTRACTING

Despite various attempts at standardization, variations still persist in bibliographic and content description of the documents. Abstracting services have rules of their own. A general working guideline drawn up by Bernier (17), can however, be summed up as under:-

1. Material, data, methods that are new and unique and their application if given, and, emphasized by the author in text along with the concluding theory should be described; references to earlier abstract where necessary be given.

2. The length of abstracts is dependent upon the nature and possible use of the articles. But the principle of brevity and clarity, should be a guiding factor in deciding the length of an abstract.

3. Redundancy, repetition and circumlocution should be avoided in abstracts. Such excessive verbiage as "the author reports", "it may be said that", etc., should be avoided and such expressions as "dust particles", "owing to the fact", "and" during the year 1975", etc., should be shortened to "dust" "owing to", "since", "because" & "in 1975" respectively. Similarly such many-worded expressions as shown below, can easily be shortened to one-word expressions without affecting the meaning:

<table>
<thead>
<tr>
<th>Many-worded Expression</th>
<th>One-worded Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>It appears that</td>
<td>Apparently</td>
</tr>
<tr>
<td>On the basis of</td>
<td>From/by/because</td>
</tr>
<tr>
<td>During the period of time</td>
<td>While</td>
</tr>
<tr>
<td>Led to the production of</td>
<td>Gave/resulted</td>
</tr>
<tr>
<td>By means of</td>
<td>By/with</td>
</tr>
<tr>
<td>In order to</td>
<td>To</td>
</tr>
<tr>
<td>Proved to be/was considered</td>
<td>Was</td>
</tr>
<tr>
<td>to be</td>
<td>About</td>
</tr>
<tr>
<td>With reference to</td>
<td>Slowly</td>
</tr>
<tr>
<td>In a slow manner</td>
<td>Is</td>
</tr>
<tr>
<td>Serves the functions of</td>
<td>Occurs</td>
</tr>
<tr>
<td>Takes place</td>
<td></td>
</tr>
</tbody>
</table>

4. Standard abbreviations and symbols should be used in the text consistently in a further attempt to shorten it.

5. The abstracts should always be clear and unambiguous enabling the user to
decide whether he should use the original article or not.

6. The abstracts should be signed enabling user to judge the quality of the abstract and the authority of the abstractor.

7. The abstracts should be edited centrally and the abstractors should be shown the edited copy to enable them to improve the quality of abstracts in future.

8. A standard for format, headings, documentation, transliteration and translation of the titles, organization and contents of the abstracts, and, placing of signatures of the abstractors should be formulated, and made known to the abstractors for consistently following it.

9. The language of the abstracts should be readable and sufficiently expressive.

10. Indexing of abstracts should, on the other hand, be correlative and more than an orderly arrangement of labelled references. A policy for arrangement of abstracts by titles or classes or under chain links of subjects should also be decided and followed consistently.

CONCLUSION

Abstracts, by and large, play an important role in the content analysis of the baffling mass of literature of our time scattered over many fields. The rules for abstracting have been in existence for long and have little changed. Newer methods and experiments have, however, been made recently in an attempt to attain uniformity in its formulation, structure and quicker dissemination of the information abstracted. Automatic abstracting or extracting process of texts are among them. The output thus obtained was most up to date and widely-covered but at the same time prone to many errors. It is not the machine, making an abstract, nor is it the quality of an abstract itself that counts in the use of an abstract but it is the correctness of the information contained in it in the context of the total output of the related literature, and even more, the promptness with which it is made available that matters most to research workers. Many would, as studies point out, prefer an informative abstract even at the cost of reduced coverage. Subject specialists as abstractors seem to be favoured but the increasing number of abstracting services has resulted into full-time professional abstractors who are generally not experts in all fields of coverage of the service. Attempts at standardisation of bibliographic description and structuring of abstracts themselves have resulted in manuals and standards. Variation is still in vogue. Subject scatter has resulted in redundancy in abstracting documents but their subject slanting in each abstracting case supports their existence. In brief, abstracts in themselves are but an extension of the over-all library service.
and serve as a useful guide to the published literature of the time through the libraries. They thus perform a double role, 1 - create awareness of the literature, and 2 - promote use of libraries and literature.

REFERENCES


5. Ref. 3, pp 30-35:


9. Cited in Ref. 1, p 121.

10. Mohrhardt, Foster E. "Introduction" I to Science Abstracting Services ... (Issue of) I Library Trends 1968, 16 (Jan), 303, 304.

11. Ref. 4, p 359.


16. Ref. 4, pp 7' 63.