# THE SUBJECT BIBLIOGRAPHY OF THE SOCIAL SCIENCES AND HUMANITIES

BY

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# CONTENTS

# PREFACE

THIS work grew out of a thesis which was completed during a year's study leave from the University of Western Australia, and which was presented at the University of Sheffield in 1968.

Like many Librarians I have been conscious for some time of the great variety of forms in which bibliographical tools, and in particular, the subject bibliographies of the humanities and social sciences, have been appearing. I have sought to define the function of subject bibliography within the general structure of communication and in so doing to ascertain the advantages and disadvantages to the user of the various types of "tools" and of their various methods of arrangement. It would appear that the meaning and function of bibliography have been variously interpreted through the centuries so that no clear theory of subject bibliography has emerged.

The use which scholars make, or could make, of subject bibliographies was discussed with members of the University staff. These discussions emphasized that the compiling of bibliographies cannot be considered as an end in itself, but as a method of putting the reader in touch with material relevant to his request for information.

I am very grateful for the interest and encouragement received while I was engaged in this work from the staff of the University of Sheffield, in particular that of the Post-graduate School of Librarianship and Information Science and from Mr. L. Jolley, the Librarian of the University of Western Australia.

# 1. INTRODUCTION

MAN has always been fascinated by his past and has endeavoured to hand down to later generations his cumulative knowledge and experience either by word of mouth in an oral tradition or by graphic symbols in a written record. By the ordering and recounting of past events, he has sought to define his identity and to place himself in the pattern of existence. The very recitation of his genealogy or the listing of deeds served to establish his individuality and to give him a sense of power over his past. When written records appeared it followed naturally that the listing of them was desirable in order not only to acknowledge their existence but also to establish control over the knowledge which they represented. At the present time when human knowledge as represented by the printed word is estimated to be doubling every twenty years,[1] man is still seeking to control and encompass its extent by using a variety of listing arrangements. What mastery he has over the ever-increasing mass of literature is provided by bibliography; "the technique of systematically producing descriptive lists of written or published records (especially books and similar materials)".[2] This is how the term "bibliography" was defined by the Unesco Library of Congress Bibliographical Survey in 1950. This definition, however, relates only to one of the meanings of the word, which has suffered from a wide and vague connotation ever since it was first used in France and England during the last half of the eighteenth century.

Dr. W. W. Greg in a paper read before the Bibliographical Society in 1912 accepted the existence of two distinct divisions of bibliography; "systematic bibliography", or the description and classification of books, and "critical bibliography", or the scientific study of books as material objects.[3] In 1932, however, he wished to dissociate the term altogether

[1] Urquhart, D. J., Ecology of inter-library loans, *Library Association Record*, 32 (1966) pp. 341–9.

[2] Unesco. Library of Congress Bibliographical Survey, *Bibliographical Services; their Present State and Possibilities of Improvement*, Washington, 1950, p. 1.

[3] Greg, W. W., What is bibliography?, *Transactions of the Bibliographical Society*, 12 (1912) pp. 39–53.

from the meaning of the enumeration and classification of books, and to apply it only to the comparative and historical study of their make-up.[4] To him, "bibliography" was "the science of the transmission of literary documents".[5] He regarded it as a "fundamental instrument in literary research" because "the problems of textual transmission arise directly out of the peculiar conditions of copying and printing, and of book-making in general".[6] He admitted, however, that he was not altogether happy with the term, but preferred it to the older "bibliology", although he thought an English equivalent for the German *Bücherkunde* would have been better. He made it quite clear that as far as he was concerned "bibliography . . . [was] in no way particularly or primarily concerned with the enumeration or description of books" and that it had "nothing to do with the subject-matter".[7] He did not deny the existence and relative importance of the latter activity but regarded it as the task of "students and specialists in various departments of knowledge"[8] not of bibliographers. Sir Stephen Gaselee and Dr. A. W. Pollard in their contributions to the *Transactions of the Bibliographical Society*[9] at the same time pressed the claims of enumerative bibliography and the latter summed up the controversy by saying: "We all want the same things: the question at issue is as to whether we want them as bibliographers, or in some other capacity. My own preference is for a big umbrella."[10] The enumeration and description of books is an older activity than that to which Dr. Greg brought so much scholarship, and was known as "bibliography" long before he set out to define the term and its implications. Usage has therefore favoured Pollard's "big umbrella" so that the term is now generally understood in the sense of "systematic bibliography" and "bibliography" in Greg's sense is identified by the use of the epithet "historical" or "critical".

Used with the article, "a bibliography" means a list produced according to the technique defined by the Unesco Library of Congress Biblio-

[4] Greg, W. W. Bibliography—an apologia, *The Library*, 4th ser., 13 (1932) pp. 113–43.
[5] *Ibid.*, p. 114.
[6] Greg, W. W. Summary of "What is Bibliography?", *Transactions of the Bibliographical Society*, 12 (1912) p. 11.
[7] Greg, W. W. Bibliography—an apologia, *The Library*, 4th ser., 13 (1932) p. 114.
[8] Greg, W. W. [Comment on Stephen Gaselee's Presidential Address to the Bibliographical Society, October, 1932], *The Library*, 4th ser., 13 (1932) p. 254.
[9] Gaselee, S. The aims of bibliography, *The Library*, 4th ser., 13 (1932) pp. 225–50, with comments by W. W. Greg, pp. 250–5, and A. W. Pollard, pp. 255–8.
[10] Pollard, A. W. [Comment on Stephen Gaselee's Presidential Address to the Bibliographical Society, October, 1932], *The Library*, 4th ser., 13 (1932) p. 258.

graphical Survey. The Survey also differentiated the numerous types of bibliographies according to their purpose, the characteristics of the material listed, such as form, origin, distribution or location, or content, the methods of listing and the form in which they were issued. Any one or more of these characteristics can be combined with other characteristics in an almost endless number of variations. The main characteristic of the bibliographies considered in this investigation is that of content—all have relevance to some particular subject field.

Yet it is difficult to define precisely "a subject bibliography"; to say what this term includes and what it excludes. In a narrow sense the term may exclude subject indexes and abstracting journals. In his *Handbook of Psychological Literature*, C. M. Louttit[11] writes of guides to the literature of a subject field and lists indexes, bibliographies, abstracts and reviews as the various types of guides. He goes on to say that "difficulties are immediately encountered if one attempts to draw sharp lines between these four groups. Many so-called indexes are truly bibliographies, while many bibliographies are exemplary indexes. Likewise, abstract journals are both bibliographies and indexes, while reviews are often accompanied by bibliographies."[12] In his *General Subject-indexes since 1548*[13] Dr. Archer Taylor treats Gesner's *Pandectarum sive Partitionum Universalium* and *Partitiones Theologicae, Pandectarum Universalium* as subject indexes, whereas most librarians and bibliographers would regard them as part of Gesner's *Bibliotheca Universalis*, the three publications making up the whole subject bibliography, despite the fact that they were published separately over a period of five years. It seems desirable particularly in the present investigation to apply the term "subject bibliography" in the wider sense, that is to say, it is a bibliographical aid which uses a subject approach to printed information. Such aids make up the sum of subject bibliography. The various types developed at different times in response to different needs and each had an effect upon those already in existence.

[11] Louttit, C. M., *Handbook of Psychological Literature*, Bloomington: Principia Press, 1932.

[12] Louttit, C. M., *op. cit.*, p. 79.

[13] Taylor, Archer, *General Subject-indexes since 1548*, Philadelphia: University of Pennsylvania Press, 1966.

# 2. THE DEVELOPMENT OF SUBJECT BIBLIOGRAPHY

A DEFINITIVE history of subject bibliography has not yet been written and the literature on its development is scattered through many sources. Theodore Besterman[1] has dealt with its beginnings through the fifteenth and sixteenth centuries, and Georg Schneider[2] and Louis-Noelle Malclès[3] have outlined the general development of enumerative bibliography up to the present time. Archer Taylor in *General Subject-Indexes since 1548*[4] has made a valuable contribution in surveying one particular type of bibliographical aid.

Although the word itself is of comparatively recent origin, bibliography has existed for almost as long as books themselves. Mr. Besterman in his *Beginnings of Systematic Bibliography* refers to several bibliographical lists which were prepared before the invention of printing. Galen in the second century A.D. compiled a list of his own writings, *De Libris Propriis Liber* and Saint Jerome in his *De Viris Illustribus* (392), produced a bio-bibliography of eminent Christian writers. The history of bibliography is, however, closely linked to that of printing, as the invention of the latter meant the wider distribution of books and the need for an account of what was available.

In keeping with the ecclesiastical culture of the Middle Ages, the bibliographies of the fifteenth century were mainly produced in monasteries and listed ecclesiastical writers. Mr. Besterman has put forward a strong claim for Johann Tritheim, the abbot of Sponheim, to be given the title of the "father of bibliography". His *Liber de Scriptoribus Ecclesiasticis* (1494) set out in chronological order nearly a thousand writers with lists

[1] Besterman, T., *The Beginnings of Systematic Bibliography*, 2nd ed., London, Oxford, 1936.

[2] Schneider, Georg, *Theory and History of Bibliography*, trans. by R. R. Shaw, N.Y.: Scarecrow Press, 1961.

[3] Malclès, L. N., *Bibliography*, trans. by T. C. Hines, N.Y.: Scarecrow Press, 1961.

[4] Taylor, Archer, *General Subject-indexes since 1548*, Philadelphia: University of Pennsylvania Press, 1961.

of their works. His primary interest was in the writers themselves and the titles of his bibliographies describe them as catalogues of writers or eminent men, not of books. This interest in the writers themselves continued throughout the next two centuries, although the words "Bibliotheca", "Bibliothèque" and "Books" begin to appear in the titles of these early bibliographies.

*Sixteenth Century*

It is understandable that the interest of the Renaissance in antiquity and classical languages as well as in science should have stimulated the production of bibliographies. The bibliographers of the sixteenth century were scholars doing original work in seeking out books in various libraries and bookshops, in many cases travelling long distances. It is also understandable that the period which saw the development of universal classifications of knowledge should also have produced classified subject-indexes and given rise to the ideal of a universal bibliography.

Conrad Gesner's *Bibliotheca Universalis* (1545) was supplemented three years after its publication by the appearance of his *Pandectarum sive Partitionum universalium* . . . and his *Partitiones theologicae* . . ., which are classified subject-indexes to the *Bibliotheca* itself. The books are indexed under twenty-one classes according apparently to a scheme worked out by Gesner himself. To each he added an alphabetical index to the subject headings he had used. In this whole undertaking he set himself the task of listing all books written in the scholarly languages of Latin, Greek and Hebrew. Although these represented only one-fifth or one-quarter of all existing books at that time, the idea of producing a universal bibliography was quite feasible and consistent with the Renaissance ideal of encompassing all knowledge. Gesner's work appears to have been regarded as a standard one for several generations after its appearance—two abridgements appeared in his lifetime and revised and augmented editions appeared after his death. Robert Constantin in his *Nomenclator insignium Scriptorum* (1555), which is a classified handlist of best books, marked with an asterisk those which were additional to Gesner's *Bibliotheca*, and used two or three other typographical devices to differentiate his entries. Israel Spach deserves mention for his *Nomenclator Scriptorum Philosophicorum atque Philologicorum* (1598) which is described by Besterman as the most important subject bibliography of this early period. It was arranged in a classified order and was provided with an alphabetical index of authors

and subjects. The terms, philosophy and philology, are of course used in the widest sense as we would expect in the sixteenth and seventeenth centuries. Professor Taylor has drawn our attention to Philibert Mareschal's *Guide des Arts et Sciences et Promptuaire de tous Livres, tant composez que traduicts* (1598) as the first subject-index to literature in a vernacular language, and the first to exclude manuscripts. As can be expected, the quality of the books was popular rather than scholarly.

Three years earlier the English bookseller, Andrew Maunsell, had published a *Catalogue of English Printed Bookes*, which, despite the fact that his death prevented the publication of its third part covering the humanities, held the field as a national bibliography for sixty years. In arrangement the *Catalogue* is an alphabetical bibliography with author and subject entries and several cross references. Maunsell consciously discarded the system of "the learned men that have written Latin Catalogues". In the dedication of the first part to the Stationers' Company, he said:

> They make their Alphabet by the Christian name, I by the Sir name: They mingle Divinitie, Law, Phisicke &c. together, I set Divinitie by itselfe: They set down Printed and not Printed, I onely Printed ... Concerning the Books which are without Authors names called Anonymi, I have placed them either upon the Titles they be entituled by, or else upon the matter they entreate of, and sometimes upon both, for the easier finding of them.[5]

His approach to book description must have been revolutionary in his time; the result is a work giving full and accurate citations together with the names of printers or booksellers, dates of publication and details of format.

These early bibliographers worked independently, each developing his own techniques and elaborating his own system of classification or subject headings. Each was, however, primarily desirous of recording the names of eminent writers and of preserving their writings from oblivion. Gesner is said to have been profoundly influenced by the news of the burning and pillage by the Turks of the library of the King of Hungary in Buda, and Maunsell wrote in the dedication of the second part of his Catalogue to the "Professors of the Sciences Mathematicall, and to the learned Professors of Physicke and Surgery"

> if learned men studie & spend their bodies and goods to further the knowledge of their countrymen for the good of the common weale, me thinketh it were pittie their studies and the benefit of them should lie hidden: in regard whereof, and that honest mindes desirous of knowledge, may see what helpes they may have to the

[5] Maunsell, Andrew, *Catalogue of English Printed Bookes*, London, 1595.

studies they are addicted unto, I have gathered this . . . table . . . hoping it will be a furtherance to the ignorant desirous of knowledge and a delight to the learned. . . .[6]

*Seventeenth Century*

The subject approach to literature which we have noted in these early bibliographies continued throughout the seventeenth century, but the classificatory arrangement gave way to one using alphabetical subject-headings. Maunsell had led the way in this by including subject headings in his *Catalogue*. Professor Taylor suggests that apart from recognising the advantages of the latter arrangement, many seventeenth-century bibliographers, who used a variety of sources including the catalogues of public and private libraries, found it easier to combine their entries under alphabetical subject headings than to adapt the various individual classifications to each other. Another source for these subject indexes and bibliographies was the Frankfurt and Leipzig *Messkataloge*, the lists of books offered for sale by booksellers at the half-yearly book-fairs, which began in 1564 and became important events in the book-trade. These were also arranged in classified order. The *Bibliotheca Exotica* (1610) and Georg Draud's *Bibliotheca Classica* (1611) and *Bibliotheca Librorum Germanicorum Classica* (1611) were such subject indexes. The *Messkataloge* were responsible for several inaccuracies in the bibliographies based upon them, as they sometimes listed books which had not yet been published. The most notable example of this is the announcement of "Playes written by M. William Shakespeare all in one volume, printed by Isaak Iaggard in fol." in John Bill's London edition of the *Messkataloge* for 1622, when the first folio edition of Shakespeare was not registered until November 1623.[7]

The provision of a universal bibliography, particularly in the form of a comprehensive subject-index, was regarded as a worthy ideal and several bibliographers and booksellers announced plans for compiling one, but few managed to carry out their intention. A London bookseller, John Hartley, published a *Catalogus Universalis Librorum* in two volumes in 1699 which consisted of excerpts from the catalogues of several large libraries including those of the Bodleian Library, and of the libraries of the Universities of Leiden and Utrecht. He promised to publish a subject index to it but this never appeared. Between 1679 and 1685 Martinus Lipenius produced his *Bibliotheca Realis Universalis*, which was divided into

[6] Maunsell, Andrew, *op. cit.*

[7] See Willoughby, E. E., *A Printer of Shakespeare*, London: Allen, 1934, pp. 166–7.

four sections according to the university faculties of the time. It was condemned by scholars in his own day, but more because Lipenius was thought to be devoting more time to it than to his duties as Rector of the University at Lübeck. The volume devoted to law, however, was accepted as a standard work for many years and was revised from time to time up until 1823.

The intellectual climate of the seventeenth century, which encouraged the analysis of earlier writings and the reasoned study of facts and controlled experiments, also established a place for specialised subject bibliographies. Theology was still the most popular subject but there are examples of medical, historical, legal and geographical bibliographies.

For the first time the word "bibliographia" appears in the titles of Gabriel Naudé's *Bibliographia Politica* (1633) and Louis Jacob de Saint Charles's *Bibliographia Parisiana* (1645), although the former was not strictly a list of books but a discussion on authors who had written on politics.

The middle of the century saw the birth of the first literary and scientific journals. The *Philosophical Transactions*, which the Royal Society began publishing in 1665, described itself on the title-page as "giving some accompt of the present undertakings, studies and labours of the ingenious in many considerable parts of the world". A little later in the same year the *Journal des Sçavans* began publication on similar lines in France. Besides acting as vehicles of communication for the early scientists they included bibliographical information in the form of notices and reviews of new books. Two or three bibliographers recognised the need for the bibliographical control of the wealth of material in them. Cornelius à Beughem's *La France Sçavante* (1683) is in effect an index to the first twenty-six years of the *Journal des Sçavans*. His arrangement, however, made it of doubtful value, being in three parts, one chronological, one alphabetically by author and one classified in six wide subject-divisions. His *Apparatus ad Historiam Litterariam novissimam*, published between 1689 and 1710 in five volumes, was a subject-index to journals on an international scale. A few years earlier in 1679, Johann Georg Schiele had produced his *Bibliotheca Enucleata* which was a subject-index of miscellanies. References to journal articles and to parts of books were also appearing in the older type of bibliography. Professor Taylor says he found little reference to Schiele's work by contemporary scholars, so it would appear that these forerunners of two important types of modern bibliographies had little use in their day.

The seventeenth century also saw the appearance of bibliographies with critical annotations, as the variation in the quality and usefulness of published material was realised. In his *Elenchus Scriptorum in Sacram Scripturam* (1672) William Crowe listed his authors alphabetically, giving biographical details and his opinion of their works. Adrien Baillet ambitiously attempted in *Jugemens des Sçavans sur les principaux Ouvrages des Auteurs* (1685–6) to bring together from various sources the published criticism on well-known writers as he held that the first duty of a librarian was to designate "required reading". His views appear to have been not unprejudiced and this work was attacked by his contemporaries, some of whom conceded that the idea was good but that it was impossible of realisation. This so embittered Baillet that his work remained unfinished. Understandably few individual bibliographers have wished to follow his example. Here we have an early instance of scholars being unprepared to accept the selection made by other scholars, which persists today and is one of the main reasons advanced against selective bibliographies as opposed to comprehensive ones.

In 1685 Daniel Morhof published his *Polyhistor, Literarius, Philosophicus et Practicus*, which can be described as the first bibliographical guide to knowledge. The first part, "Bibliothecarius", is devoted to an account of libraries, catalogues and bibliographies. Morhof seems to have had a wide knowledge of the book resources of western Europe, and an appreciation of the existing bibliographical tools. He favoured the subject approach to books and expressed regret at the lack of a subject index to Thomas Hyde's *Catalogue of the Bodleian Library*, which at that time had the largest collection of books.

*Eighteenth Century*

In the eighteenth century man sought for an understanding of the development of civilisation and its laws. It was a period of synthesis and interpretation; the age not only of the dictionary and the encyclopaedia but also of the specialised subject bibliography. These were the vehicles which made recent discoveries and theories easily accessible. There was a general interest in all branches of knowledge, and this was reflected in the growth of the periodical press (173 journals were appearing in Europe in 1760), in the growth of private libraries (500 catalogues of them were published between 1708 and 1782) and in the expansion and organisation of public libraries. This latter development was particularly marked in

France, where as a result of its seizure of the ecclesiastical libraries in 1789, the State found itself the possessor of a great number of manuscripts and books. In 1792 the libraries of the nobility were also confiscated and transferred to *dépôts litteraires* for redistribution. Many of the volumes went to augment the stock of the State libraries already in existence and greatly increased their importance.

It was a stimulating atmosphere for the world of letters, including bibliography. The book itself became a precious object valued not only for its intellectual content but also for its material and physical identity. This invested it with a personality of its own and called for the development of systems of bibliographical organisation and of classification and cataloguing. Men became interested in everything connected with the writing and production of books.

Bibliography became associated with antiquarianism and gave particular attention to the history of printing. In 1749 Joseph Ames published his *Typographical Antiquities, being an historical account of printing in England, with some memoirs of our antient printers, and a register of the books printed by them, from the year 1471 to 1600* which became the foundation of English historical bibliography. It was warmly supported and received by contemporary antiquarians and printers. Ames did not copy from existing catalogues, but painstakingly worked from rare books in his own and other collections. The high regard in which this work was held and its importance for book collectors is evidenced by the fact that it was considerably enlarged and reissued first by William Herbert in three volumes between 1785 and 1790, and then by Thomas Frognall Dibdin between 1810 and 1819. Four volumes of the latter edition appeared but it remained uncompleted. All three men had a considerable knowledge of English books in their outward form, but not of the literature contained in them. Thus the foundations of historical bibliography, of the collecting of rare books, of bibliophily and of library science were laid. All continued to develop along their own lines throughout the nineteenth century.

Subject bibliography was now established employing many of the techniques of description which are used today. Professor Taylor traces the decline from this period of the general subject-index even as the specialised one prospered.

In every field of knowledge, but particularly in that of science, appeared specialised subject bibliographies, many coming from the pens of outstanding scientists such as Baron Albrecht von Haller and Carolus

Linnaeus. Many of them were selective or contained critical comment. Such titles as "Bibliotheca Juris Selecta ...", "Selecta Bibliotheca Historica" are indicative of their authors' approach. Periodical indexes were not yet fully accepted, but in 1790 J. H. C. Beutler and J. C. F. Gutsmuth produced *Allgemeines Sachregister uber die wichtigsten deutschen Zeit- und Wochenschriften*, an index to German periodical publications, about 11,000 articles being cited. Professor Taylor has drawn attention to the development a little earlier of *historia litteraria*, the accounts of the literature of particular disciplines in relation to the development of those disciplines, and quotes as examples, Burkhard Gotthelf Struve's *Introductio ad Notitiam Rei Litterariae & Usum Bibliothecarum* (1704) and Gottlieb Stolle's *Kurtze Anleitung zur Historie der Gelahrheit* (1718). The books cited in them are significant in the historical development of a subject and they are presented in narrative form.

*Nineteenth Century*

All these trends continued throughout the nineteenth century. The bulk of printed material increased enormously in this age of expansion as progress was made in public education, as the universities were reorganised and as learned societies were founded. This exerted pressure on bibliography to take on the role of disseminating current advances in learning, and current bibliographies, both national and specialised, became established, but such enterprises could not be undertaken by individuals and they were characterised by co-operation and teamwork. Guides to articles in periodicals, particularly scientific ones, usually came into being as parts of learned journals and subsequently became independent publications, often sponsored by scientific organisations. Many were annotated or took the form of abstracts or reviews. By the last years of the century a United States firm was publishing current periodical indexes as a commercial undertaking.

Retrospective periodical indexes at last came into their own as J. D. Reuss with his *Repertorium Commentationem a Societatibus Litterariis Editarum Secundum Disciplinarum Ordinem* carried on the work started by Cornelius à Beughem, Beutler and Gutsmuth. This work is still of great value today as it indexes the publications of the learned societies of various countries from the time of their founding until 1800. It was published between 1801 and 1821 in sixteen volumes, each covering a different subject and each arranged in a logical order. Later in the century the Royal Society,

London, issued its *Catalogue of Scientific Papers* covering material published between 1800 and 1883. It is an author list but subject indexes were provided for pure mathematics, physics and mechanics.

At the same time, national retrospective bibliography passed into the hands of professional bibliographers who selected and arranged their material in various ways to suit various needs. The most important general bibliographies of this century were bibliophilic in approach, but they remain classic examples of accurate and scholarly description.

The first of these was *Manuel du Libraire et de l'Amateur des Livres* (1810) by J. C. Brunet, which is annotated and arranged alphabetically by author and is supplemented by a classified subject index. Another four editions were published, the last in 1860, in which Brunet sought to perfect his work. The fifth edition in six volumes includes more than 40,000 titles. Brunet's aim was to describe rare and valuable books, but he also included a great number of useful works which would not be considered bibliophilic rarities. This work exerted a considerable influence on bibliography particularly in France throughout the nineteenth century, and the classification he used in his subject index was adopted by other bibliographers. In Germany, J. G. T. Graesse published *Trésor des Livres Rares et Précieux* in 1859–60, which was modelled on the *Manuel*, but lacked a subject index. Brunet's work naturally included a majority of French titles, while Graesse was useful for his wider range of German ones.

The most notable of British bibliographers in the early nineteenth century was a Scottish doctor, Robert Watt, who spent most of his adult life preparing the *Bibliotheca Britannica* which was issued posthumously between 1819 and 1824. It grew out of his *Catalogue of Medical Books for the Use of Students attending Lectures on the Principles and Practice of Medicine* which he published in Glasgow in 1812 when he was lecturing there on medicine. The *Bibliotheca Britannica* was sub-titled "a general index to British and Foreign Literature" but the majority of titles were published in Britain. It is in two sections: a biobibliographical dictionary and an alphabetical subject-index with entries arranged chronologically. This gives a valuable historical approach to the literature of the particular subject fields. It also includes entries for anonymous works and articles from periodicals.

In 1834 W. T. Lowndes published his *Bibliographer's Manual of English Literature* in four volumes. He acknowledged Watt's *Bibliotheca Britannica* as one of his sources but he used Brunet's *Manuel* as his model. Lowndes

set himself the task of remedying what he regarded as faults and omissions in the *Bibliotheca Britannica*; the lack of information regarding collation and prices and the lack of guidance as to the best editions and the best authors on a particular subject.

In the second half of the century an American librarian, S. A. Allibone, compiled *A Critical Dictionary of English Literature and British and American Authors*. This was published in five volumes between 1854 and 1871 and is essentially a biobibliography. He drew upon Watt's earlier work but his biographical details are fuller and the entries include critical opinions of the authors quoted from various sources. This latter feature is reminiscent of Baillet's *Jugemens des Sçavans*, except that it did not arouse a similar storm of abuse, probably because Allibone recorded the opinions of others with impartiality. The *Dictionary* also has an alphabetical subject-index which refers under each heading to the names of authors who have written on that particular subject, not to the actual works on it. Allibone's work is therefore similar to the early bibliographies in which the writers themselves were given greater prominence than their writings and cannot be considered as a subject bibliography.

The progress in public education greatly increased the reading public and the scope and demand for books. The public library movement grew quickly from small beginnings and called for a wider variety of popular as well as scholarly literature. Towards the end of the century we find examples of bibliographies which catered for the needs of the various types of readers. Previously most readers had come from the well-educated classes and were of a scholarly turn of mind, now general readers became aware of the massive amount of knowledge locked away in books and wished to use them in the course of self-education. Obviously guides which fulfilled the bibliographical needs of one group were of little use for another. W. S. Sonnenschein's *The Best Books* is written for the general reader, Lowndes's for the bibliophile and Watt's for the scholar. Similar differences are reflected in *The Subject-Index of the London Library* and the *Subject Index of Modern Books added to the Library of the British Museum since 1880*. These printed subject-indexes to the contents of two libraries represent a development in the realisation that such tools can be of use to a wider audience than one library's immediate clientele. It can be argued that such tools are not strictly bibliographies in that they do not set out to give comprehensively or selectively the titles for each subject or topic, being limited by the acquisition policy of a particular library. They are

nevertheless a subject approach to books and can be very useful as long as the scope of the particular library is borne in mind.

*Twentieth Century*

The twentieth century has seen no check in the proliferation of the periodical press nor in the increase of printed information. In the early years of this century there emerged a new concept of making a judicious selection from the mass of available material, monographic as well as serial, and of producing authoritative treatises covering all aspects of a broad subject field. Numerous collective syntheses produced on these lines by teams of subject specialists made their appearance and the selective bibliographies included in them were an important feature of them. The *Cambridge Modern History*, Beilstein's *Handbuch der organischen Chemie*, and Vidal de la Blache and Gallois's *Géographie Universelle* give an idea of the scope and variety of these multi-volume works, which have had a continuing popularity. The bibliographic sections were so extensive that they became authoritative bibliographic tools. When it was realised that those in the *Cambridge History of English Literature*, edited by A. W. Ward and A. R. Waller (1907–16), were out of date and misleading, the *Cambridge Bibliography of English Literature* was produced under the editorship of F. W. Bateson in 1940. This work is not so much a revision of these sections as a modern equivalent for the material contained in them with its own arrangement, scope and style.

The fine bibliographical tradition established in the nineteenth century was, however, dramatically interrupted by the 1914–18 War and it was not until after the Second World War that it showed signs of recovering. During the interwar period current bibliographies were faced with an ever-increasing quantity of printed material and constantly rising costs. Some accumulated backlogs, while others ceased publication altogether. The informational needs of scientists, however, demanded bibliographical control of scientific and technical literature and this period saw the creation of national research and documentation centres, which developed their own approach to the problem.

Retrospective bibliographies produced mainly by individual authors became narrower and narrower in their subject fields and shorter and shorter in the periods they covered. They attempted to be exhaustive, but were inevitably limited by the linguistic knowledge or personal or national viewpoint of their compilers. The wider subject bibliographies produced

through co-operative efforts were augmented by the printed subject-indexes to large or special libraries, which served as bibliographical guides in their own special fields. The *London Bibliography of the Social Sciences*, based mainly on the stock of the library of the London School of Economics, is one of many such guides.

Ever since Gesner, men have dreamed of a universal bibliography and the development of new techniques and printing devices such as inter-filable cards, interchangeable linotype slugs, punched-cards and more lately computers have from time to time raised hopes of such an undertaking becoming feasible. Many plans have been announced but universal bibliography remains unrealised. There was, however, a valiant attempt at the turn of the century to produce one. In 1895 Paul Otlet and Henri Lafontaine proposed an integrated international bibliography produced by transferring all information from the catalogues of the large libraries of the world on to cards in order to produce an author and a classified catalogue. By 1900, seventeen million cards had been collected together at the International Institute of Bibliography in Brussels. Although this global approach was a source of inspiration to many bibliographers and librarians, it failed to get whole-hearted support. The project was started at a time when there was no standardisation of bibliographical techniques and when the principles of classification were a subject of controversy. Much preparatory work was needed to organise the administration of such a massive scheme, and to solve the problems inherent in a co-operative enterprise, if general support were to be forthcoming. Although enthusiasm for it has now waned, many American librarians see a variation of such a scheme as the solution to the bibliographical dilemma.

In 1924 the International Institute of Bibliography became a federation and in 1937 changed its name to the International Federation for Documentation, with a change of emphasis in its activities. It became and continues to be a federation of national bodies interested in the problems of bibliographical control and the dissemination of information. The affiliated national body in Great Britain was the British Society for International Bibliography, which in 1948 amalgamated with the Association of Special Libraries and Information Bureaux under the registered name of Aslib. Both these, at first glance, innocent-looking, changes were an acknowledgement of a trend which had been going on for some time—the development of information and documentation centres as distinct from libraries in order to handle the increasing amount of information de-

manded and available for scientific and technological research. Since 1945 the volume of printed information has been augmented not only by the increase in the number of books and journals, the older means of intellectual communication, but by the increase in material with restricted circulation, such as research reports, conference papers and university theses. Whereas formerly, advances in knowledge appeared in the periodical literature rather than in books, they now appeared in the elusive report literature. Librarians, whose profession was built on the book as the bibliographic unit, were slow to realise the importance of these new forms. It remained for the documentalists to attack the problems of their bibliographical organisation.

Such material may be listed or briefly described in conventional journals or in special indexing serials with directions as to how to obtain them from a distributing centre or from the various issuing bodies concerned. This practice is particularly noticeable in the exact sciences but the social sciences and the humanities have not been exempt from this development, and these disciplines now demand bibliographical control of archives, maps, music scores, films and sound recordings, material at one time regarded as of marginal interest to libraries. Scientific information and documentation centres have now come into their own and their activities include specialised subject bibliography as an integral part of research. Their approach to its problems has had a profound effect upon librarianship.

The possibility of supplying the user with immediate information rather than with locations for information has been explored in recent years resulting in a tool designated in the United States as the "Collectanea". In a Ph.D. thesis presented at Rutgers University in 1961, T. C. Hines has examined it as a bibliographical tool.[8] He defines it as

> a form of systematic subject bibliography, either selective or inclusive, which embodies significant or complete original context with most entries, and which contains duplicates of bibliographic units or sections of such units as required by the structure of the analysis system used. It is distinguished from other bibliographic forms because it is primarily designed to supply the user with the information needed with each heading, rather than to direct him to another source, either within the file itself or outside it.[9]

While the "Collectanea" is a collection of texts from various sources, it has little resemblance to the once popular form of literary miscellany known

[8] Hines, T. C., *The Collectanea as a Bibliographical Tool*, Ph.D. Thesis. Rutgers University, 1961.

[9] *Ibid.*, p. 17.

by the same name which was used to trace the development of a genre or to demonstrate specific affinities between its excerpts. Its origin is to be seen in business files and in personal research files. Dr. Hines gives several modern examples, such as the Morton Collectanea at the University of Miami, which contains data on all known edible substances; the *New York Times* "morgue" and other information files maintained by newspaper offices and the Human Relations Area Files. All these except the last named are individual research tools specially designed for the particular needs of their owners, who use them rather as they would an encyclopaedia. The "Collectanea" can be compared with the research methods of assembling information which are normally used when writing a book. The Human Relations Area Files differ in that they are not unique but have been reproduced for housing in twenty-three other institutions besides Yale University, which originally started their compilation. They are also now available in a microform edition. This system provides information on cultures and areas through a two-faceted classification approach, and is regarded as a major research tool for the comparison of cultures. Mrs. G. W. White, a librarian at Cornell University, praised it in 1958 as a "unique compromise between the old-fashioned research library and the latest mechanised developments" but pointed out three limitations: its lack of theoretical material and consequent incompleteness, and the reliance on the manipulation of data by others.[10] These and many of its advantages are equally true of conventional bibliographies. Dr. Hines poses the question—does the "Collectanea" approach constitute the most effective method of achieving its purpose? and he analyses the Human Relations Area Files, comparing them to a hypothetical bibliography indexing the same material—differing only in its content by not including the text of the material indexed. Dr. Hines shows that the cost of producing such an Index and making it more widely available would be less than that of the Files themselves. Even when costing the time spent in locating and retrieving the sources cited in it for the research worker, a higher density of use than that existing at the present time at one of the depository libraries would be necessary before the cost would overtake that of the Files. As a bibliographical tool the "Collectanea" has no advantage over other subject bibliographies, except in saving the researcher's time. When it is a question of library costs this may have to be

[10] White, G. W., The Human Relations Area Files, *College and Research Libraries*, 19 (1958) pp. 111–17.

regarded as a luxury or be weighed against the cost of providing a wider coverage of stock.

The fifties and sixties have seen the development of such bibliographic aids as scanning journals and citation indexes which can only be considered as part of subject bibliography in the sense that they have been produced for large subject fields. Their approach to the material listed is not an analytical subject one. *Current Contents* is merely a reproduction of the contents pages of periodicals and is designed to enable research workers to keep abreast of the current literature and to overcome some of the delays experienced in waiting for such material to be indexed or abstracted. The concept of the citation index was propounded by Dr. E. Garfield, the Director of the Institute for Scientific Information, Philadelphia.[11] It assumes that a paper which is known to be relevant to a particular piece of research will cite earlier references and will be cited by later papers which are also relevant. Such an index is based not on a subject or topic approach, but on research papers which are cited by later research workers when reporting on their own investigations. Inquiries into the literature-search methods of scientists have shown that they tend to approach the literature of their subject field in a similar way. It is therefore not surprising that they have expressed enthusiasm for citation indexes.

The rapid strides made in automation and computer techniques in the last twenty years have had their effect upon bibliographies, from the mechanisation of the tedious clerical tasks of cumulating entries and of producing key-word indexes to the intricate programming of computerised information retrieval. The latter has been used mainly in the fields of pure and applied sciences, two good but different examples being the projects known as the MAC Technical Information Project and as MEDLARS. The former is an example of use being made of a multiple access computer for information-retrieval purposes and is in operation at the Massachusetts Institute of Technology. Information about papers appearing in twenty-one physics periodicals is punched onto cards, verified, edited and transferred to magnetic tape for permanent storage on a computer disc memory. For each paper it records: the author, title, institutional affiliation of the author, journal citation, the references cited and the location of an abstract in *Physics Abstracts*, if applicable. By 1965 information about 25,000 papers had been stored in the computer and the storage was increasing by 1500 articles a month. The retrieval operation is designed in

[11] Garfield, E., Science Citation Index, *Science*, 144 (1964) pp. 649–54.

three sections: (1) the Search Command in which the programme defines which part of the stored "memory" is to be searched; (2) the Find Command in which the distinguishing feature or features of the item or items wanted is stated in terms of the author, title, location, citation or keyword; (3) Output, in which the computer can be instructed to print out, count or store the information obtained.[12] It provides an individual personal service since the inquirer has direct access to the computer and the information is communicated directly to him.

MEDLARS is an acronym which stands for Medical Literature Analysis and Retrieval System and grew out of the National Library of Medicine's Index Mechanisation Project of 1958–60, which investigated the possibilities of mechanising the composition of the *Current List of Medical Literature* and the *Index Medicus*. In 1963 the system was advanced to the stage of implementation and citations were loaded into the computer "memory", in 1964 it produced *Index Medicus* by sorting, arranging and printing out this information. MEDLARS provides three services: (1) the *Index Medicus* and other related publications such as *Cumulated Index Medicus* and *Bibliography of Medical Reviews*; (2) the Demand Search Service; and (3) the Recurring Bibliographical Service. In *Index Medicus*, the National Library of Medicine aims to provide in published form a total coverage of all medical literature; in addition to monographs and periodical articles, project reports, serial titles, symposia, congresses and other communication forms that are resistant to bibliographical control are analysed. The Demand Search Service, on the other hand, is similar to a personal reference service in that it responds to individual requests for bibliographic information by searching the computer memory according to specific instructions. Centres are being established in various countries to handle these requests so that this service will become world-wide. The Recurring Bibliographic Service is a regular search and retrieval system for specific groups of specialists. It provides references in fairly broad subject fields by screening the citations as they are stored in the computer "memory". This service is used by specialised medical groups or associations to obtain regularly bibliographic information on topics in which their members are particularly interested.[13] In several instances, they use the information to

[12] See Kessler, M. M., The MAC Technical Information Project at M.I.T., *Physics Today*, 18 (3) (Mar. 1965) pp. 28–36.

[13] See: Progress Report on the MEDLARS Project, *Bulletin of the Medical Library Association*, 52 (1964) pp. 148–80.

publish their own bibliographies especially designed for the use of their members.

One of the first tasks of Unesco was to conduct a survey of the bibliographical services of the world. The immediate results have been the moves towards standardisation of bibliographical description and the production of national bibliographies. Progress has also been made in defining and overcoming the inadequacies and gaps in subject bibliography. Unesco itself sponsors several bibliographical undertakings or gives aid to international learned associations for their endeavours in this field. Other international organisations such as the International Council for Philosophy and Humanistic Studies have set up Committees on Bibliography, and an International Committee for Social Sciences Documentation has been established. Studies have been and are continuing to be made not only on the nature of printed information but also on the informational needs and research methods of its users. In the survey she undertook for Unesco in 1952 on the Bibliographical Services throughout the world, Mlle Malclès says: "The first impression is one of bafflement at the amount of time and trouble expended on bibliography. In every country, without exception, there is almost feverish activity . . . in some fields [it is] completely unco-ordinated or at least haphazard."[14]

From the foregoing survey we can distinguish a developing pattern of subject bibliography and make out the beginnings of the many bibliographical guides of today. The early bibliographers sought to make known the works of eminent writers and to preserve them from oblivion. Their successors valued rather the intellectual content of the works and their part in the accumulation of human knowledge and experience. As the demand for recent material increased and periodical literature appeared, so did periodical indexes and current bibliographies. With the proliferation of literature, the need for selection and critical comment produced first annotated and selective bibliographies, then guides to the best books and guides to the sources of information in the various subject fields. Current subject bibliographies became even more diversified in the form of abstracting, reviewing and scanning journals, annual reviews and the "progress in . . ." type of volume. Now that report material has become an established vehicle of communication for recent research we may expect yet another variant. The numerous types of modern bibliographies

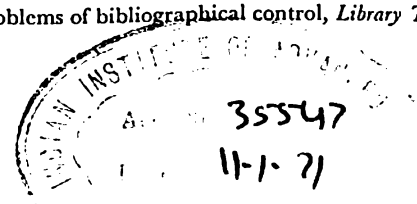
[14] Unesco, *Bibliographical Services throughout the World; First and Second Annual Reports*, 1951–52, 1952–53; by L. N. Malclès, Paris: Unesco, 1955, pp. 18–19.

reflect not only the increased variety of publications but also the varying types of readers and their different bibliographical needs. Printed records are no longer the preserve of the scholar or of the bookish dilettante. They are now the vehicles of communication for information and knowledge at all intellectual levels. The same reader may require differing types of bibliographical guidance, according to the particular information he wants, for instance, the subject specialist needs one bibliographical tool to keep himself informed about recent work in his own field, another to give him information on material outside his field, and possibly another when he engages in the teaching of undergraduates.

Early bibliographies were compiled by individuals, usually scholars, and many were contributions to contemporary literary history, but as the volume of publication increased, bibliographies were produced by two or more compilers, or by teams of specialists whose work was sponsored by learned societies or research organisations. Commercial publishers also entered the field so that today there is an almost infinite variety of bibliographical aids issued by governments, national and international organisations and commercial enterprises. Bibliographical literature in its turn must also be controlled. Bibliography in the eighteenth and nineteenth centuries was built on the foundations laid in the previous three, and in the twentieth it continues to adapt existing aids to suit new needs. Should we not survey the problem anew, and if necessary, develop new bibliographical tools which may or may not follow the conventional pattern?

The Unesco Survey and subsequent international meetings have stressed the necessity of encouraging national bibliographies on which to base an international bibliography. No country has full bibliographical control over all its printed information, although all current American bibliographical publications combined come close to achieving this goal in the United States. The largest current bibliography for the sciences is produced in the U.S.S.R. The all-embracing *Referativnyi Zhurnal* abstracts more than 700,000 references annually from Russian and foreign publications using a uniform style. In comparison, about 750,000 references are cited in a variety of American publications, which inevitably overlap each other and have various methods of entry. Subject bibliography accounts for most of the world's bibliographical publications yet it remains as Professor Robert Downs says, "the weakest link in our chain of bibliographical control".[15] It appears that at no time did subject bibliographies

[15] Downs, R., Problems of bibliographical control, *Library Trends*, 2 (1953–4) p. 506.



fully succeed in bringing order out of chaos. Despite the elaborate systems, which have been evolved, studies of their use have shown that their success is a very "hit and miss" affair.

# 3. THE SUBJECT BIBLIOGRAPHY OF THE SOCIAL SCIENCES AND HUMANITIES: RECENT DEVELOPMENTS

In 1887 E. D. Grand could write in his article on bibliography in *La Grande Encyclopédie* when describing "Bibliographies Spéciales":

> Malgré le nombre des bibliographies de ce genre . . . toutes les sciences ne possèdent pas encore les bibliographies qu'elles devraient avoir. Pour les sciences historiques et philologiques, la bibliographie est assez avancée: elles sont représentées par cent vingt travaux environ. Les sciences mathématiques et naturelles n'en comptent que soixante-dix et sur ce nombre même, près de trente sont relatifs aux arts industriels. La médecine, la botanique, l'astronomie ont été l'objet de quelques travaux bibliographiques importants, mais la physique et la chimie, sciences auxquelles la bibliographie n'est pas d'un moins grand secours qu'aux précédentes, ne comptent que deux ou trois bibliographies générales, d'une date déjà surannée.[1]

M. Grand did not concern himself with current bibliographical tools which at that time were few and fairly generalised. He was not in a position to foresee that instead of remedying the imbalance he spoke of, the sciences would develop periodical subject bibliographies whose main object was the exploitation of the current literature, so that the bibliographical equipment of the sciences was soon to outstrip that of the humanities and the emerging social sciences. Intensive scientific research and the development of documentation centres produced superior tools for the exploitation of scientific literature, and the bibliographical equipment of the humanities and social sciences received little attention until the late 1940s. Since then much has been written about the lack of bibliographies for these disciplines and various proposals for remedying it have been put forward. The main focus, however, has been on the development of current services and the utilisation of computers for information retrieval with an evident desire to learn from the documentation problems of the sciences.

Yet research in the humanities is not necessarily well served by services which are similar to those which have been adapted to the needs of the

[1] Grand, E. D., Bibliographie, *La Grande Encyclopédie*, Paris: Lamirault, [1887], tome 6, p. 639.

scientists. Little attention has been paid to the humanistic approach to, and use of, the literature, although user surveys of their bibliographical needs have been conducted amongst social scientists. Mr. D. J. Foskett, Librarian of the University of London Institute of Education, in a lecture entitled *Documentation in the Humanities*[2] which was published in 1964 in his collection *Science, Humanism and Libraries*, pointed out that most scientific research is done in the laboratory while in the humanities and the social sciences, research is still done in libraries. As science deals less with value judgements and more with factual data, part of the responsibility of a literature search can be delegated, whereas in the humanities and social sciences the literature search is part of the research itself. The extract from *La Grande Encyclopédie* only emphasises the fact that specialised subject bibliographies have been available for the humanities for many years and have formed an integral part of the research connected with these disciplines. As mentioned earlier, such bibliographies were, in many cases, by-products of research. They are still being published in great variety by individuals as well as by learned societies, and like other recognised forms of serious publication are a part of the "information explosion". Bibliographical indexes are now required to give access to them and to exploit them. Librarians have from time to time drawn attention to their increasing numbers, to the variety of formats used, to their overlapping and duplication of each other, and have suggested integrated all-purpose bibliographies covering wider fields. While experiments in rationalisation and integration are being carried out, more individual specialised bibliographies are making their appearance, and little is being done to survey their various forms and relative usefulness or indeed their use by the readers for whom they are intended.

The variety of views, and much of the indecision evident in tackling the bibliographic problems of those disciplines, which are grouped together in the all-embracing phrase "humanities and social sciences", can be attributed to the variety of methodologies and changing emphases of the disciplines themselves. While it is desirable to consider the two groups separately, it is difficult to draw a line between them; for instance, one school of thought places history in the humanities, while another claims it is a social science. Even treating them together we cannot consider them as a circumscribed section of human knowledge, as certain subjects within

[2] Foskett, D. J., Documentation in the humanities, *Science, Humanism and Libraries*, London: Crosby Lockwood, 1964, pp. 57–67.

them, such as anthropology and psychology, which may be called behavioural sciences, are, in some quarters, regarded as the preserve of the natural sciences. In 1964 the *International Social Science Journal* devoted an entire issue to the "Problems of surveying the social sciences and humanities"[3] which served to emphasise the different approaches scholars bring to these disciplines.

As with the natural sciences, interdisciplinary connections are now being emphasised so that several writers on the bibliographical problems in these disciplines prefer to consider them as related to the types of research undertaken and to the various types of information required rather than to the individual subject fields. Dr. R. E. Steven, of the Postgraduate School of Library Science at the University of Illinois, carried out an investigation on the use of library materials in doctoral research by analysing the references cited in a hundred dissertations, twenty from five different disciplines (United States History, Classical Language and Literature, Education, Botany and Psychology) presented between 1930 and 1948 at three American universities.[4] He classified the types of research involved as: (1) Historical (investigations of the past by accepted methods of historiography through the use of source records); (2) Experimental (investigations of the present either through the use of controlled experiment or the gathering of scientific data).

He found that forty, mainly those in United States History, Classical Language and Literature and some in Education, which he classed as historical, cited a total of 6352 references, the majority of them being unique to the sample, while the fifty-one classed as experimental research, which were mainly in Botany and Psychology with some in Education, cited only 1641 references. The remaining nine were classed as textual, that is, tracing the textual tradition of a manuscript, and while these cited a total of 389 references, the sample was considered too small to be significant. Research involving literary criticism was not represented in this limited sample and no comparable figures can be given. The conclusion drawn was that a modern research library which supports historical research requires a wider and more extensive collection than one which supports experimental research.

[3] Problems of surveying the social sciences and humanities, *International Social Science Journal*, 16 (1964) pp. 475–602.

[4] Steven, R. E., The use of library materials in doctoral research, *Library Quarterly*, 23 (1953) pp. 33–41.

This does not come as a surprise to anyone, but it is interesting when placed beside other surveys such as that carried out by Dr. Bradford[5] and later formulated as "Bradford's law of scattering"[6] or the analysis of inter-library loan requests received by the Science Museum Library,[7] which have shown that the majority of references needed by, and cited in, scientific research (which is mainly experimental) is confined to a relatively small number of titles. Inasmuch as humanistic research requires a wide range of literature, wide not only in time but in subject coverage, and is centred on the graphic records of human experience, it has a highly individualistic approach to the literature. It is therefore quite likely that scholars undertaking such research would not welcome, and indeed would find little use for the same kind of information and bibliographical services which are available to scientists. As more experimental research is undertaken in the humanities and social sciences this situation is likely to change. The emergence of abstracting journals and proposals for information centres in psychology, linguistics, political science to meet the needs of scholars in these fields shows that there is a relation between the type of research and its bibliographical problems.

In the July 1967 issue of *College and Research Libraries*, Mr. D. Bergen, Chairman, Department of Library Science, University of Mississippi,[8] writing on the communication system of the social sciences prefers to classify social science workers as: "1. Deductive theoreticians and philosophers; 2. Empirical generalisers who seek to discover 'laws' of limited range which accord with the results of empirical inquiry; 3. Raw empiricists, whose main concern is fact-gathering." He argues that these epistemological categories cut across disciplinary barriers and that investigations along these lines are necessary for an understanding of scholarly communication and of the bibliographical needs of research workers. Ever since the University of Chicago produced its report on the *Bibliographical Services in the Social Sciences*[9] in 1950 and pointed out that the

[5] Bradford, S. C., *Documentation*, London: Crosby Lockwood, 1948, pp. 110–21.

[6] Vickery, B. C., Bradford's law of scattering, *Journal of Documentation*, 4 (1948) pp. 198–203.

[7] Urquhart, D. J., Use of scientific periodicals, *International Conference on Scientific Information, Washington*, 1958. *Proceedings*. Washington: National Research Council, 1959, vol. 1, pp. 287–300.

[8] Bergen, D., Communication system of the social sciences. *College and Research Libraries*, 28 (1967) pp. 239–52.

[9] Chicago University. Graduate Library School and Division of Social Sciences. Bibliographical services in the social sciences, *Library Quarterly*, 20 (1950) pp. 79–100.

bibliographical demands of librarians and scholars in these fields varied, it has been held that the amount of knowledge an inquirer brought to his search determined which bibliographical tool would suit his needs best. Bergen maintains, however, that it is the epistemological stance of the inquirer which is influential, the macroscopic and deductive approach requiring different bibliographic tools from the microscopic and inductive. This view is not very helpful and is unlikely to have an effect upon present bibliographical tools, but it does point to the various types of material used.

The types of social science documentation can be separated into three groups: (1) Papers reporting research; (2) Graphic records from many sources, which form the raw material of the social sciences such as censuses, institutional reports, voting records, novels, ephemeral and popular publications, etc.; (3) Data obtained from sample surveys, tests, polls, etc. The second group is found in so many diverse sources that it is almost impracticable to attempt a method of indexing them and it would seem best to compile lists and directories of such material. The third group has been regarded as a special case for some years. In fact, the term "data archives" in this context now refers to coded data accumulated in machine-readable form. Various research centres in the 1950s were collecting data gathered in surveys, opinion polls and the like for future reanalysis. Now moves are being made to establish national data banks for the purposes of comparative research. The International Social Science Council has played a prominent part in organising discussions along these lines and encouraging the investigation of the information storage and retrieval problems involved. A conference was held in Paris in September 1964 and its proceedings were published under the title *Data Archives for the Social Sciences* and edited by S. Rokkan.[10] Since then several national data banks have been established, including a British one at the University of Essex, Colchester. The problems of this group, although allied to bibliography, should be kept separate from the present discussion. Subject bibliography in the Social Sciences is at present confined almost entirely to the first group.

A consideration of it must begin with the report made by the Graduate Library School and the Division of the Social Sciences of the University of Chicago mentioned above. In summarising the state of bibliographical services in 1950 this report found that they provided relatively easy access

[10] Rokkan, S. (Ed.), *Data Archives for the Social Sciences*, Paris: Mouton, 1966.

to books, but that while articles in American and British journals could be located through current indexes, non-English language material was not well covered; psychology had a good abstracting service, which covered a certain amount of material in the related fields of anthropology and sociology, but for economics and political science, no such service existed; bibliographical reviews appeared from time to time in various journals, but no periodical was devoted exclusively to their publication; information about government and research reports, dissertations, and active research projects was not adequately listed or analysed.

This report did good service in pointing out the various factors which contribute to the problem of bibliographic control not only in the social sciences but in knowledge as a whole. These were grouped under eight headings:

1. Function: a whole range of services is needed to cater for the various functions required, such as answering questions as to what is available on a topic, what is the best literature on it, indicating the contents of a document, giving critical comment, or reviewing the recent literature on a specialised topic.
2. Related to function is form and arrangement: this is exemplified in the variety of annotated and unannotated indexes, abstracts and bibliographic reviews.
3. Physical format, either as parts of existing journals; separate series, issued regularly or irregularly; cards selected by individual users; or central information services.
4. Various groups of users, such as research specialists within their own field; research specialists working in a field related to their own; teachers of undergraduates; graduate students; undergraduates; librarians serving general and special clienteles; related professional workers; and intelligent laymen.
5. Coverage, according to subject field, language, nationality, form of material, degree of analysis or of quality.
6. Classification or arrangement.
7. Organisation and sponsorship. Bibliographic "tools" may be compiled by individuals, teams of experts, or professional societies.
8. Finance provided by either subscriptions, government subsidies or foundation grants.

The report finished by proposing a three-level scheme for bibliographic improvement.

The first part was for immediate adoption and called for two additional services—a system of bibliographical review articles on particular social science problems and a system of selective abstracts particularly in economics, political science, sociology and history.

The second part, which would require a period of time to solicit co-operation from the editors and publishers involved, was to integrate existing services and to increase collaboration between them. This would minimise unnecessary overlapping and fill existing gaps thus providing a wider coverage.

The third was an imaginative proposal for a long-range vision of rationalisation of social science publication and bibliography as a whole. This envisaged a publication system without learned journals. Papers would be published separately with a small circulation, but abstracts of them would be made widely available, or alternatively microreproduction would make it possible to distribute individual papers on microcards but with the author, title and an abstract printed on them so as to be readable without magnification. Other mechanical means such as electronic rapid selectors and ultrafax transmission were also mentioned.

Earlier in 1944 Fremont Rider in *The Scholar and the Future of the Research Library*[11] had suggested that the solution of the space problem in research libraries lay in microforms available on cards, and a proposal for the publication of scientific papers as separates or preprints by Professor J. D. Bernal, of Birkbeck College, University of London, had been made at the Royal Society Scientific Information Conference[12] in 1948. Some professional associations adopted this practice, but it is interesting to note that most have discontinued it; for example, the American Society of Civil Engineers began in 1950 to issue separates instead of publishing its Proceedings eight times a year and to give abstracts of them in its journal, *Civil Engineering*, but after six years grouped them together, issuing them in periodical form again as the *Journal of the Hydraulics Division*, the *Journal of the Engineering Mechanics Division*, etc., so that instead of separate papers, more specialised journals have been created to cater for specialised groups.

[11] Rider, Fremont, *The Scholar and the Future of the Research Library*, N.Y.; Hadham Press, 1944.

[12] Bernal, J. D., Provisional scheme for central distribution of scientific publications, *Royal Society Scientific Information Conference*, 1948. *Report and Papers submitted*, London: Royal Society, 1948, pp. 253–8.

Similar proposals were made in the 1950s: in 1954 Professor S. Velinsky, at that time Professor of Psychology at the State University of New York, College of Education, proposed a Psychological Information Center, which would collect and record separate papers, abstracts of which would appear in *Psychological Abstracts*;[13] and in 1957, when discussing social science documentation in the *Revue de Documentation*, Miss Kyle[14] proposed that the periodical should be abolished as the vehicle for scholarly research and that documentation centres should collect and classify research papers for reference and publish abstracts of them which would be provided by the authors. It is already a fact that many research reports do not now appear in journal form but instead of being organised and recorded as these proposals have suggested these reports are creating their own bibliographical problems. A whole study could be devoted to this development, and the apparent lack of enthusiasm for any of these proposals.

It is interesting to compare the three-level scheme proposed in the University of Chicago's report with the proposals made by Dr. E. H. Boehm of the University of California in 1965. In his *Blueprint for Bibliography*,[15] he expounded a system for the social sciences and humanities, and summarised it in six recommendations:

1. Create one integrated, comprehensive international bibliographical system for the social sciences and humanities. This should include books and articles, unpublished material such as research in progress, or documents, or whatever is deemed worthy of inclusion in a bibliography. Substitute this system for the multiplicity of partial or inadequate or overlapping bibliographical efforts.
2. Apply a multi-level or echelon approach to bibliography.
   (a) The first to consist of a basic bibliography of citations, without annotations. It should be enhanced by subject or index headings, as the simplest and most economical device for aiding the user initially.
   (b) The second: Abstracts of selected titles.
   (c) The third should be based on a further study of needs and desires. The service should include extensive translation services, or assembly of titles on a given subject from diverse sources, grouped under appropriate classificatory headings, and published as needed.
3. Apply a systems approach. Integrate the effort with the closely related activities of libraries.
4. Use a computer as part of the bibliographic process and put it to work for a large variety of tasks.

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[13] Velinsky, S., Psychological Information Center to solve our publication problems, *American Psychologist*, 9 (1954) p. 266.

[14] Kyle, B., Current documentation topics and their relevance to social science literature, *Revue de Documentation*, 24 (1957) pp. 107–17.

[15] Boehm, E. H., *Blueprint for Bibliography; a System for the Social Sciences and Humanities*, Santa Barbara, California: Clio Press, 1965.

5. A review of educational policies is needed and new courses are suggested to cover sources of information, computer use, multi-language vocabulary recognition, etc.
6. A new conventional communications system for research is needed. This calls for the establishment of an international news service and newspaper for the social sciences and humanities.[16]

Dr. Boehm wished to approach the problem afresh and recommended that a new start be made by building a basic comprehensive bibliography from which abstracts and review articles could be prepared. The University of Chicago, however, had accepted the existing situation and sought to provide bibliographies in those fields in which they were most wanted and to extend and integrate services already in existence. Dr. Boehm, writing ten years later, had seen the partial failure of the various proposals of the University of Chicago and of other authorities to rationalise the whole pattern of scholarly publication, and accepted them as unrealistic. He claimed that his recommendations were "essentially a synthesis of all that has been applied and proven sound in good bibliographical systems in the sciences".[17] No one would deny that the sciences are better served bibliographically than the social sciences and humanities, but such a system as he has outlined does not in actual fact exist for them and there is no move at present to co-ordinate one. His plans for a basic comprehensive bibliography may prove as unrealistic and as incapable of execution as those of the University of Chicago.

The first two more practical proposals of the Chicago report, those for the provision of bibliographical reviews and abstracts and for the co-ordination of existing services, have not been fully realised. What has been accomplished in this way has been mainly due to Unesco and to the International Committee for Social Science Documentation, which was created in 1950 under the aegis of Unesco in recognition of the need for bibliographical co-ordination in these disciplines. In 1957 the Royal University Library at Oslo[18] reported to Unesco on the latter's bibliographical publications. Commenting on Unesco's part in international bibliography, the report drew attention to what it has effected in the new field of the Social Sciences through competent planning. Bibliographies published by the International Committee for Social Science Documentation, or sponsored by Unesco now give a relatively comprehensive

[16] Boehm, E. H., *op. cit.* p. 4.
[17] *Ibid.*, p. 22.
[18] Unesco, *Unesco Bibliographical Publications; Final Report by the Royal University Library, Oslo*, Paris, 1957 (LBA/Conf. 19/5).

view of research in these disciplines. The Committee has formulated standards for bibliographical data, translation of titles, selection; it has helped in the distribution of bibliographical tools and has encouraged training in their use. The report recommended that Unesco should take a more active part in planning and co-ordination, and should demand the acceptance of standards of bibliographical data, comprehensiveness, and translation of titles when it gives financial support. Specific aspects which it was thought demanded special attention were:

1. *Classification.* Many Unesco-sponsored bibliographies used a geographical arrangement which was unwieldy and which reflected the receipt of material from the various corresponding contributors.
2. *Language problems.* These include transliteration and transcription as well as translation. It was thought that in some branches of the humanities, the provision of both English and French in bilingual editions was unnecessary.
3. *Indexing.* The time-lag in preparing general indexes to current subject bibliographies, which in some cases amounted to five or even ten years, was a serious drawback to their use. Others lacked indexes to subjects, places, names or authors, which would be useful.
4. *Overlapping.* Although this is unavoidable and to a certain extent desirable in the humanities, where space must be given to neighbouring fields, it should be possible through editorial co-operation and mutual exchange of citations, to analyse some periodicals once. For example, *L'Année Philologique* might analyse *Classical Philology*, and the *International Bibliography of Historical Sciences*, *Historia*, but the relevant references from each journal would be included in both bibliographies.
5. *Standardised abbreviations for journals.* The two bibliographies just mentioned use different ones and in some cases they are shorter than the I.S.O. recommendations.
6. *Standardisation of bibliographical data, classification, indexing and comprehensiveness.* As many international bibliographies were now produced by committees of experts in many countries, the necessity of precise instructions to corresponding contributors was particularly stressed in order to produce a uniform standard of compilation.
7. *Coverage.* The report recommended that each bibliography should contain a clear and exhaustive introduction, stating precisely the field it covers; a list of the periodicals analysed with their abbreviations;

references to the existence of complementary bibliographies; and a statement as to the public for which it is intended.

A report on the first ten years of activity of the International Committee for Social Science Documentation appeared in the *International Social Science Journal*[19] in 1962. The aims governing its activities are clearly stated:

1. It is necessary for the bibliographical reference works already in existence in the social sciences to be co-ordinated in order to get the best out of them, but it is necessary for new reference works of this kind to be created in several branches.
2. In order to be fully effective, both this co-ordination and the creation of new bibliographical reference works must form part of a general programme. While such a programme must, for the present, be adapted to the framework imposed by the division of the science into various branches of study, its aim is, nevertheless, the bibliographical organisation of social science as a whole. There must be room for the development of adequate bibliographical instruments, not only for the specialists in a particular branch of study, but also for those in neighbouring disciplines which usually have more trouble in keeping informed of that branch of study.
3. Priority must be given to the establishment of periodical bibliographies designed to give comprehensive coverage of each major discipline.
4. In the second place, it is necessary to contribute to the publication of a series of abstracts and critical bibliographical reports at least for certain disciplines and specialities, or on specific problems, especially problems which cannot be completely covered by any one of the traditional disciplines.
5. Bibliographical work on a regional basis is also required, but it must be subordinated to work on an international scale since the latter must be able to count on the co-operation of both regional and national institutions.
6. Once the publication of essential bibliographical tools is assured, the next task will be the systematic definition of all means of documentation which can facilitate the work of social scientists in various countries and supply them with the instruments they need.[20]

Its functions are to collect and keep up to date all relevant information concerning documentation of social science, to study measures for ensuring the organised development of this documentation and to advise on all questions relating to bibliography and documentation; to formulate and distribute rules and methods for improving the presentation and facilitating the use of reference works in social sciences; to assist in the creation of essential bibliographies and documentary instruments.

As this review shows, the I.C.S.S.D. has had a productive ten years. It initiated four parallel current bibliographies, which it continues to

[19] International Committee for Social Science Documentation; ten years of activity, *International Social Science Journal*, 14 (1962) pp. 177–91.

[20] *Ibid.*, pp. 177–8.

publish, devoted to sociology, political science, economics and social and cultural anthropology—four fields which previously were lacking in bibliographical tools. These attempt to give more systematic coverage to publications from countries which have the least means of making them known. Besides producing other bibliographical directories and reference works it publishes *Current Sociology* which reports on trends and research in sociology, and *Confluence* which surveys interdisciplinary trends and developments. It contributed to the establishment of *International Political Science Abstracts*, which since 1955 has been published jointly by the International Political Science Association and a commercial firm. While it recognises the impracticability of providing an international bibliography in law, it is encouraging individual countries to compile their own annotated law bibliographies.

Other associations and individuals have also contributed to the bibliographical organisation of the social sciences, not only by publishing bibliographies of all kinds but also by undertaking research on information needs and on problems associated with modern methods of information retrieval. Foremost amongst these has been the late Barbara Kyle, who, as well as producing a classification for the social sciences, has drawn attention to the research worker's need for general reading in a wide field of stimulating material. The social scientist must search not only his own literature but that of several other disciplines within the social sciences, and in the natural sciences and technology peripheral to his field. This she has called the "browsing" need as opposed to the "dowsing" one, which demands quick answers to specific questions.[21] The former requires an internationally co-ordinated system of national and regional bibliographies and bibliographical and library centres specialising in social science documentation. Barbara Kyle has pointed out that despite the strides made in subject bibliography, particularly through the efforts of the I.C.S.S.D., greater regional and retrospective coverage, and better co-ordination and standardisation are still required as well as adequate library services. For "dowsing", tools for coding and retrieving information are required, but these presuppose the use of precise terms.

Both needs can be helped by modern techniques of bibliographical control and information retrieval, which can speed up, increase and make

[21] Kyle, B., Some further considerations on the application to social science material of up-to-date methods of bibliographical control and information retrieval, *Journal of Documentation*, 14 (1958) pp. 190–6.

economically practicable the discovery and provision of literature, and make possible the retrieval of specific items of information. But attention must first be given to the standardisation of entry in bibliographical and abstracting services, to centres for the storage of unpublished material, to photocopying facilities, to the enlisting of specialists for their expertise in different subjects and languages, and to the development of a precise terminology. Since 1958, when these remarks appeared in the *Revue de Documentation* and the *Journal of Documentation*, much has been done along these lines.

The feasibility of setting up information services for the social sciences has been investigated and M. J. C. Gardin of the Centre National de la Recherche Scientifique has described one in *Social Science Information*, July 1962.[22] It would take the form of a federal non-centralised service utilising existing services which would retain their autonomy within the limits of a plan for joint action. Each specialist centre would still retain its own manner of preparing documentary work for its own use, but would furnish abstracts according to an agreed plan to the general service, which would maintain the "memory bank". The federal body would be the administrative centre, distributing the work of bibliographic analysis to the various specialised centres or satellites; it would standardise and co-ordinate the analyses and then provide bibliographies on demand and retrieve information for the centres and their users. The administrative structure is reminiscent of VINITI (Vsesoyuznyĭ Institut Nauchnoi i Tekhnicheskoĭ Informatsii) which co-ordinates the bibliographical work for the great Russian *Referativnyi Zhurnal*. It is, however, questionable whether existing services, many of them individualistic, would be prepared to co-operate to the extent required to make co-ordination possible.

An example of a federal centre with specialist satellites can be seen in operation in the United States. ERIC, or to give it its full name, the Educational Research Information Center, was established in 1965 as a "clearing house for completed education research, particularly in the fields of elementary and secondary education ... with a network of specialised clearing houses, such as universities or established research groups, for instance Western Reserve University is a satellite in the field of educational media research, and Syracuse University in the area of adult

[22] Gardin, J. C., Proposals for the co-ordination of documentary work in the social sciences, *Social Science Information*, N.S. I (2), July 1962, pp. 23–30.

education."[23] Since each scholarly satellite often has greater knowledge, or more specialised access to it, than ERIC does, it records the basic documentary data. ERIC does the final sifting for documentation and distribution, giving particular emphasis to research reports financed by the U.S. Office of Education and to unpublished or almost uncirculated articles. The present objectives of the system are to:

> Establish and operate a specialised clearing house for research and research-related information in co-operation with ERIC.
>
> Provide services in the clearing house to acquire, process, store, retrieve and disseminate materials in the defined subject field.
>
> Assist ERIC in the project of building an educational thesaurus.
>
> Provide a means to test and evaluate the effectiveness of the clearing house operation.

This centre owes its existence to two studies. One was undertaken by M. F. Tauber and O. L. Lilley in 1960[24] on the feasibility of establishing an educational media research information service and it recommended a comprehensive information service designed to improve the situation in educational information and bibliographical services. While recognising the importance of the work of individual bibliographical workers, they asserted that the individual scholar was no longer able to provide the continuing and comprehensive coverage, that university centres are restricted to special interests and that commercial documentation services are not qualified to provide a co-ordinated service and recommended the establishment of a government agency for this purpose. The other study was undertaken at Western Reserve University in 1961, and entitled *The Library of Tomorrow—Today* by Center for Documentation and Communication Research.[25] It was concerned with the problems of mechanised information storage and retrieval in educational research.

The most amazing experiment in computerised bibliography in the social sciences is the *Universal Reference System* devised by A. de Grazia, editor of the *American Behavioral Scientist*. The first volume, a bibliography of international affairs, was published in 1965. The system is described

[23] See Forman, S. and Collins, R. L., Education, *Library Trends*, 15 (1966/7) p. 663.

[24] Tauber, M. F. and Lilley, O. L., *Feasibility Study regarding the Establishment of an Educational Media Research Information Service*, N.Y.: School of Library Service, Columbia University, 1960.

[25] Reeves, P. W. *et al.*, *The Library of Tomorrow—Today*, Cleveland, Center for Documentation and Communication Research, School of Library Science, Western Reserve University, 1962.

in the *American Behavioral Scientist* 1965[26] and this particular volume was reviewed in *American Documentation*, July 1966, by T. M. Little, Associate Director of Library Services at Hofstra University, who says "the producers of the URS must be congratulated on their pioneering efforts to provide and behavioral scientists with a new and variegated approach to their social monumental information problems". The *Universal Reference System* is described as "a computerised documentation and information retrieval system which attempts to provide multifaceted access to the substantive literature of the social and behavioral sciences through selection, storage and indexing in depth".[27] Its creator envisages it as being available in published volume form as well as forming a basis for individual print-outs for specific requests, and has made provision for rapid and continuous increments. Emphasis will be placed on methodology and interdisciplinary coverage. The basis of selection used in its compilation is not clear but it seems that purely evaluative, journalistic, non-empirical or intuitive material will be excluded and that the majority of entries will be for material published since the Second World War. Indexing is based on a general classification that is behaviourally and operationally based, having 183 standard descriptors for the social sciences and further descriptors unique to each section or volume. Each item indexed will have between ten and twenty descriptors. This classification system is likely to prove its greatest problem and a source of frustration in its use. Little remarks that it is awkward and necessitates precision and ingenuity on the part of the user in stating his requirements. The one volume so far published contains citations and full annotations of 3030 books, articles and documents dealing with all aspects of international affairs, drawn from the literature of economics, sociology, anthropology, psychology and history as well as political science. Another unfortunate feature is that it is almost entirely confined to American material, foreign titles only accounting for 5 per cent of the whole. This system demonstrates what computers can contribute to bibliography and that the problems involved are not technical but intellectual ones. First amongst these is the provision and application of a suitable classification and terminology.

In the field of the humanities, the *Répertoire International de la Littérature Musicale*, or RILM for short, started publication in 1967. It is sponsorep

[26] de Grazia, A., The Universal Reference System, *American Behavioral Scientist*, 8 (8), April 1965, pp. 3–14.

[27] Little, T. M. [Review], *American Documentation*, 17 (1966) p. 151.

by the International Musicological Society and the International Association of Music Libraries, and is an abstracting computer-indexed bibliography of scholarly literature on music, including source documents (other than music itself), books, articles, reviews, Festschriften, conference reports, dissertations, iconographies, and editions.[28] It is proposed that there will be two principal publication series, one of current literature and the other of retrospective material. Specialised bibliographies of all kinds, both with and without abstracts will be published individually and scholars will be able to request a bibliographic search by the computer of its stored information and to receive an automatically printed-out reply. This project will also be associated with the compiling of a Polyglot Music Dictionary, the contents of which will be stored in the computer, so that requests can be made using subject headings or descriptors in any one of its languages and the machine would search its stored data under corresponding terms in all the other languages. This is a notable development in music bibliography. It is tackling the problem afresh and not attempting to adapt existing services. It is probably fortunate in working in a field which is particularly short of bibliographical tools. In other fields of the humanities, such as English literature, the variety and profusion of existing tools has hampered innovations.

A pilot study has been carried out by S. O. Mitchell and L. Sears of Syracuse University, New York, applying information retrieval techniques to the *Modern Language Association Annual Bibliography* (now the *MLA International Bibliography*). An account of this appeared in the *Papers of the Bibliographical Society of America* for 1964.[29] It consisted of transferring information from an existing bibliographic tool on to magnetic tape for storage in the computer in the form of a concordance. Information fed in consisted of the bibliographic citation as it appeared in the bibliography, its location in it and the subject headings used for the different sections. Provision was made for adding annotations or actual abstracts from such tools as *Abstracts of English Studies*. This information could then be subjected to the search process which consisted of the inquirer listing words, groups of synonyms or collections of morphological variants, all of which bear on the question to be asked and designating the relationship between them.

[28] See: Brook, B. S., Some new paths for music bibliography. In: Bowles, E. A. (Ed.), *Computers in Humanistic Research*, Prentice-Hall, 1967, pp. 204–11.

[29] Mitchell, S. O. and Sears, L., An information retrieval system for modern language studies, *Papers of the Bibliographical Society of America*, 58 (1964) pp. 270–8.

This is fed into the machine which performs the search and prints out the desired information. This is an exercise in computer searching techniques, not in bibliographical description, which has already been done by the compilers of the *MLA Annual Bibliography*, but it has shown that English literature material can be subjected to information retrieval techniques. The terms which appear in the computer concordance and which are used for search purposes are precise but general and for the search to be effective all possible synonyms must be taken into consideration. To take a very simple example, in order to locate material on Robert Frost's poetry it will be necessary to instruct the computer to search for items which contain the words Frost or Frosts and poet, poets, poetry, verse or verses, and even then it is possible for relevant material to be missed. This project therefore eliminates for the user the manual consultation of several annual volumes of a bibliography and the copying out of references. It is obvious that its advantages in terms of speed and the elimination of repetitive manual search increases with the period of time covered by the concordance and the number of bibliographical tools whose information is included in it. The authors do, however, recognise the limitations of this project. They agree that while the computer can handle the bibliographical information supplied in conventional form, it would be more efficient as a search device if programmed to handle annotations and that, while its existing subject headings or descriptors are efficient for human users, there is a need for standardised descriptors if it is to retrieve all the relevant citations.

This is a comparatively simple information retrieval system and as it stands would not be particularly helpful. In fact, while it may reduce the tedium of manually searching annual volumes it may well cause frustration by producing irrelevant references and missing others. Much could be learnt from some of the sophisticated systems used by the sciences as regards search strategy, clarification of descriptors and the compilation of a thesaurus of search terms.

A parallel, but apparently independent, project is described by Professor L. Sawin of the University of Colorado's English Department in the *Pennsylvania Library Association Bulletin*[30] for February 1964. Pointing out the variety of bibliographical tools for English literature subjects and the comparatively little duplication of entries in them, he proposes an inte-

[30] Sawin, L., The integrated bibliography for English studies, *Pennsylvania Library Association Bulletin*, 19 (3), Feb. 1964, pp. 7–19.

grated computerised bibliography which can be regarded not as a new bibliographical attempt but as "an ingathering and re-organisation of [the] labors [of other compilers] . . . to provide maximum comprehensiveness and easiest availability of any discrete segment of the total record". For a pilot study he proposed integrating all entries for seventeenth-century English literature in the *Annual Bibliography of English Language and Literature* and *MLA Annual Bibliography* for the years 1921–60. With C. Nilon, Professor Sawin had found that the duplication of entries for this period in these two bibliographies was only 21 per cent. After perfecting methods of coding, storage, sorting and retrieval, it would be possible to integrate into the first "memory" the remaining entries in the *Annual Bibliography of English Language and Literature* and *MLA Annual Bibliography* for 1921–60, the entries in other current bibliographies such as *Shakespeare Quarterly*, *Victorian Studies*, *American Literature*, etc., those in general compilations such as the *Cambridge Bibliography of English Literature* and the *Essay and General Literature Index*, which would extend the bibliography in time back beyond 1920, and finally those in more specialised single-topic bibliographies. It is tempting to be dazzled by the magnitude of this vision of integrated bibliography but it is impossible without adequate practical experience of its functioning to determine whether, apart from being speedier and less tedious, its consultation would be as effective for the user as manual consultation of the individual bibliographies. Professor R. R. Shaw, of the School of Library Service, Rutgers University,[31] has replied to this proposal in the same journal by posing several questions:

> Have we adequate information on the time spent in literature searching at the present time and the frequency with which scholars in English studies must compile their own special bibliographies from these multiple sources?
>
> Would English studies be advanced more by reworking existing bibliographies into an integrated one or by filling existing gaps?
>
> Why merge selective bibliographies if a comprehensive one is wanted?

The U.S. Office of Education has, however, considered this project promising and has awarded a grant to Professor Sawin to carry out a pilot study which would go beyond the original proposal in investigating the feasibility of an Information Service for English studies based on an integrated bibliography.[32] Answers to Professor Shaw's questions are still

[31] Shaw, R. R., Integrated bibliography—another view, *Pennsylvania Library Association Bulletin*, 19 (3), Feb. 1964, pp. 20–24.

[32] See Preminger, A., English literature, *Library Trends*, 15 (1966/7) pp. 544–5.

wanted before we can regard it as a solution to the bibliographical problems of literature studies. Many humanistic scholars may regard the consultation of bibliographies as a means not only of providing information but also of stimulating the imagination and the creative process. Professor L. S. Thompson of the Classics Department of the University of Kentucky, in surveying the wealth of specialised bibliographical aids for European Literature in *Library Trends*, January 1967, declares: "in a sense the ferreting out of bibliographical sources can be the most exciting aspect of the scholarly process".[33]

[33] Thompson, L. S., Continental European literature, *Library Trends*, 15 (1966/7) p. 588.

# 4. THE THEORY OF BIBLIOGRAPHY

WHEN we consider its development, we can hardly be surprised that a theory of bibliography, let alone of subject bibliography, has been slow to emerge. For a long time it was merely a means to an end—a technique devised to satisfy a need. There is something of the collector in every bibliographer, and many have undertaken their task without giving much thought to the end-product and its purpose. As it developed, there have been from time to time debates as to whether bibliography is a science or a technique. This state of uncertainty as to where it stood was aggravated first by the wide and vague connotation of the word itself, and later by its use in at least two distinct senses, sometimes differentiated by the addition of the adjectives "critical" or "historical" and "systematic" or "enumerative". The early enumerative bibliographies, as has been shown above, were produced by scholars or by men from the same intellectual milieu, but were often regarded as by-products of other scholarly pursuits, and their authors did little to describe their ideas or approach to this part of their work or to formulate the principles on which they were working. The nineteenth-century interest in textual criticism and in the physical make-up of books led to an emphasis on this aspect of bibliography before the status of the parent science had been formally stated. This "critical" or "historical" bibliography had a stout protagonist in Dr. W. W. Greg, who demonstrated its scientific nature and the scholarship it involves, but who, at the same time, stigmatised systematic bibliography as a "mere prostitution"[1] of the science. He wished to confine the meaning of the word "bibliography" to the former. It has been more difficult to demonstrate the scientific nature of enumerative bibliography, although it is a much older subject, and to distinguish its intellectual content from the techniques which it uses. Since 1945, however, its growing importance has called for a new appraisal and much has been written about it. Apart from a few isolated publications on the subject, the earlier literature on

[1] Greg, W. W., The present position of bibliography, *The Library*, 4th ser., 11 (1931) p. 259.

enumerative bibliography is very scattered and is to be found mainly in the introductions to the bibliographies themselves.

Mention has already been made of Adrien Baillet (1649–1706), who became librarian to François Chrétien de Lamoignon, Advocat Général of the Parlement of Paris in 1680. While in this position he discovered "that it would be possible to go much further in the arts and sciences if there were a way to have a certain knowledge of those books which might be read and those which it would be possible to omit", and subsequently produced the *Jugemens des Sçavans* which he described as "a simple compilation of the major best-known works with some reflections on others".[2] His choice of books and comments on them found disfavour with some of his contemporaries and Gilles Ménage went as far as to issue an *Anti-Baillet* in the Hague in 1688 setting out specific passages for criticism.[3] Baillet was probably not the first bibliographer to realise the variation in the quality of books, but he seems to have had an unfortunate manner of demonstrating it.

Bibliography, in fact, the whole science of the book, took on a greater importance in France after the Revolution, when the state found itself responsible for great masses of manuscripts and books from the confiscated libraries of the churches and of the *émigrés*. Armand Gaston Camus (1740–1804) played an important part in the organisation of this material and became keeper of the Archives Nationales. In a paper presented to the Institut National in 1796 he says:

> The first need of a man going to make use of a library is to be acquainted with books, to know which deal with the matter he proposes to study, the use he can make of them, and the differences between the various editions placed at his disposal. He needs a knowledge of bibliography and of books before he enters the front door of a library or, for that matter, before he gets to the front steps. This is an indispensable preliminary in making any use of a library . . .

and continues:

> There are two kinds of knowledge of books. One draws its information solely from the appearance and form of the books and determines from the date, the kind of printing, and from certain other characteristics, the qualities which could place it in the class of rare and curious books and which determine its pecuniary value. The other consists in knowing which are the books most suited for instruction, those in which the subjects are most clearly expressed or most profoundly discussed, works

[2] See Malclès, L. N., *Bibliography*, trans. by T. C. Hines, N.Y.: Scarecrow Press, 1961, p. 38.

[3] These two works appear together in: Baillet, A., *Jugemens des Sçavans . . . revûs . . .* par M. de la Monnoye . . . *Anti-Baillet . . .* par Mr. Ménage . . . Paris, 1722–30, 8 tom.

> which make it possible to grasp the origin of science, to follow it in its developments, and to understand its present achievements. . . . We have better processes for the identification of rare and curious books than we do for the identification of books suited to fundamental instruction in various fields of learning. I wish that we would try to remedy this defect, and that, in a bibliography formed on a new method, we might find a guide, for each type of learning, to the most instructive books. Such a bibliography would seem to me to be extremely valuable to progress in scholarship; it would put men of letters perfectly in a position to draw as much information as possible from libraries. It would really give life and soul to the body of bibliography.[4]

Not only does he distinguish between bibliophily and systematic bibliography but emphasises the role of the latter in the comprehension of knowledge. Mlle Malclès has brought to light the following extract from a letter dated 19 April 1807, written by Napoleon, presenting the case for a special school of literature and history at the Collège de France:

> A man who wishes to seek out good instruction and who is suddenly placed in a vast historical library finds himself thrown into a veritable labyrinth. To know what remains of the ancient historians, to know what has been lost, to distinguish the original fragments from the supplements written by good and bad commentators, this alone is almost a science, or at least an important field of study. Thus the knowledge and choice of the good historians, the good memoirs, the true chronicles of a period is a real and useful knowledge. If . . . there were a special school of history, and if the first course given there were in bibliography, a young man, instead of wasting months getting lost in unimportant reading, or reading material in which little confidence might be placed would be directed toward the best works and more easily and quickly attain a better education.[5]

Courses in bibliography are still not widely available and many a reader still seeks guidance.

Henry Stein in his introduction to *Manuel de Bibliographie Générale* states the case for considering bibliography as a science:

> un fabricant de catalogues n'est pas plus un bibliographe qu'un fabricant d'eau de seltz n'est un chimiste, qu'un comptable n'est un mathématicien . . . les bibliographes paraissent disposés à s'attaquer à des sujets moins futiles et aussi à dresser beaucoup plus des répertoires intellectuels que des guides destinés aux libraires: tant il est vrai que la critique doit être un des éléments constitutifs de la science bibliographique.[6]

J. M. Keynes will be remembered for many things but his understanding of the function of bibliography will probably not be the first to spring to mind. This is, however, clearly evident in the introduction to the bibliography which he appended to his *Treatise on Probability* in 1921. He begins:

[4] See Malclès, L. N., *op. cit.*, p. 74.
[5] See Malclès, L. N., *op. cit.*, p. 75.
[6] Stein, Henri, *Manuel de Bibliographie Générale*, Paris: Picard, 1897, pp. xv–xvi.

> The following bibliography does not pretend to be complete, but it contains a much longer list of what has been written about Probability than can be found elsewhere. I have hesitated a little before burdening this volume with the titles of many works, so few of which are still valuable . . .

and mentions what bibliographical guides to the subject he had found, both of which were over fifty years old at that time. He continues:

> I have not read all these books myself, but I have read more of them than it would be good for any one to read again. There are here enumerated many dead treatises and ghostly memoirs. The list is too long, and I have not always successfully resisted the impulse to add to it in the spirit of a collector. There are not above a hundred of these which it would be worth while to preserve—if only it were securely ascertained which these hundred are. At present a bibliographer takes pride in numerous entries; but he would be a more useful fellow, and the labours of research would be lightened, if he could practise deletion and bring into existence an accredited Index Expurgatorius. But this can only be accomplished by the slow mills of the collective judgement of the learned. . . .[7]

This does indeed sum up the dilemma of the individual bibliographer, emphasising the problem of selection and personal choice.

Dr. Georg Schneider, for many years Chief Librarian of the State Library of Berlin, was probably the first to give much attention to the theory of systematic bibliography. In earlier treatises from the nineteenth century, this branch of knowledge was confused with the general science of the book and the organisation of libraries, if, indeed, it was not regarded as the poor relation of historical bibliography. Having shown bibliography's relationship to the world of learning and the sciences in general, Schneider immediately raises the question "Is bibliography a science?". While he refuses to support those who hold that it is only a technique, he has little time for the defenders of the scientific character of bibliography as he suspects they are bibliographers, who, with pardonable vanity "[hope] to raise bibliography and incidentally themselves in their own estimation . . .". He speaks of it as an auxiliary science to all sciences, but goes on to say "In general, none of the numerous definitions of a science applies to bibliography without qualification. Expressions such as 'knowledge' and 'research' are, as a rule, of too high an order to be applied to bibliography, especially when the purpose is taken into consideration. Bibliography is a mixture consisting of a science and its practical applications."[8] It will be noted that this statement includes both historical and

[7] Keynes, J. M., *A Treatise on Probability*, London: Macmillan, 1921, pp. 432–3.

[8] Schneider, Georg, *Theory and History of Bibliography*, trans. by R. R. Shaw, N.Y.: Scarecrow Press, 1961, p. 23.

systematic bibliography. Schneider insists, however, on the selective and intellectual work of the latter and sounds a warning against regarding it as a technique, or practising it as an end in itself. He draws attention to the brief life of printed information and its function as a special background for learned work, and the incongruity of reckoning all publications of equal value. In this connection he is of the opinion that one-half of all printed material need never have appeared, and that while the short life of publications cannot be accounted a misfortune in this case, we still lose many which deserve a better fate.

He goes on to discuss "book-learnedness" and creative work, and quotes Edgar Allan Poe as saying that a large amount of literature on any one subject forms the greatest handicap to its mastery. The great mass of publications "obscure vision, slow down creative work, and hinder completion". Are we to agree with him or even with Jakob Burckhardt that "Only losses in the arts and poetry are irreplaceable. It is in the very nature of research that later eras will retrieve what earlier periods have let slip"? Then, indeed, "book-learnedness [will totter] on the foundations of its prestige if the sovereign intellect is made the royal road to knowledge . . ."[9] the statistics of book-production will show an enormous drop, and the task of the bibliographer will become redundant or at least simplified. There is, of course, a great deal of truth in these statements, but it is dangerous to accept them *in toto*. Scholarship surely involves bringing intuition and breadth of vision to bear upon accumulated facts and past knowledge in order to give a new insight into old problems, and to place them in a new perspective. However much we may wish to rely on "book-learnedness" as opposed to "intuition", or whatever position we may take up between the two, the fact remains that books and other printed material are here now and must be accepted as part of human knowledge, and we must adopt an attitude towards them.

Schneider says of books "we must be able to survey them in order that we may govern them".[10] It will be noted that he uses the word "survey" rather than "list" and he brings this out later by stating that "the task of the subject bibliographer does not consist solely in the orderly listing of publications, but in surveying and separating the gangues of the mine of literature from the ores".[11] We are here reminded of Henri Stein's earlier

[9] Schneider, Georg, *op. cit.*, p. 28.
[10] *Ibid.*, p. 29.
[11] *Ibid.*, p. 82.

statement that a bibliographer is not a mere compiler of lists. Mere listing may give us a sense of power over printed material, or in fact over anything else we may arrange or name in some particular order, but it is illusionary. It is in this ability to "survey" that much of the scholarship and scientific nature of bibliography lies.

Schneider claims for bibliography that it "is for books what Ariadne's thread was for Theseus in the labyrinths". Its importance "is in direct proportion to the mass of [literature]".[12] It is surprising that this has only been fully recognised in the last two decades when the theory and probblems of bibliography have occasioned more than isolated comment.

In dealing more specifically with subject bibliography, Schneider has stated the counterposed viewpoints for conscious selection and for the greatest possible comprehensiveness. The main argument for the latter is that selection is always arbitrary and subject to errors, and that it is only possible after all the available material has been brought together and examined. For selectiveness, its protagonists claim that the success and value of a work does not depend on the amount of literature used, and that ignorance of one or two references is unimportant. Sidney Webb in his preface to the *London Bibliography of the Social Sciences* (1931) stoutly maintains "that every orderly arranged bibliography, however incomplete will be of use to somebody . . .".[13] This statement cannot, however, be taken out of its context. It relates to the limitations of this particular bibliography, arising from the fact that it represents the principal collections in the field in London, and should not be taken to relate to bibliographies in general. Against the danger of accepting the bibliographer as a censor, there are at least two checks—that of competition from other bibliographers and the watchfulness of countless specialists. They presuppose cautious judgement and broad knowledge of the old and the new literature of a subject. The element of error and prejudice has in most cases been overemphasised. Such claims may appear rather idealistic and we have already noted instances of adverse reactions to certain selective bibliographies. At the present time the element of error and personal prejudice is probably minimised by the fact that most bibliographies are now compiled by teams of experts rather than by individuals. Schneider agrees that there are factors which may make completeness more desirable

[12] Schneider Georg, *op. cit.*, p. 30.

[13] Webb, Sidney, Introduction, *A London Bibliography of the Social Sciences*, London: London School of Economics and Political Science, 1931, vol. I, pp. v–vii.

in certain circumstances and that the classic bibliographies of the past have aimed at comprehensiveness, but claims that the percentage of publications of slight value has greatly increased so that we should beware of pressing for a requirement which was justifiable a century or so ago. It still remains, however, that the whole literature has to be surveyed and material deliberately excluded before a meaningful selection can be made.

It is interesting to record Schneider's outspoken reaction in 1926 to the Institut International de Bibliographie:

> It is backed by idealistic motivation, diligent industry, and perseverance in a high degree. But it shows, all too obviously, the drawback of dilettantism. Lack of clarity, in spite of outspoken inclination to classification; lack of ability to discern difficulties and their relation to use; uncritical extravagance; plans replacing one another, each starting on a prodigious scale; all these characterise the working of the Institut. . . . Practically never, and nowhere else, has the publication *per se* been so over-venerated; or the difficulties of international work so optimistically misunderstood . . . It aims—and all other purposes are secondary to this one—to raise the revised Dewey classification scheme to the status of a universal classification scheme; as though, if that were done, the "Grail of Bibliography" would thereby have been found.[14]

Since 1945 the problems of an integrated international bibliography have been foremost in the minds of many bibliographers, scholars and librarians, and it appears that this early experiment has been valuable in demonstrating how not to go about such a project and in high-lighting the many stumbling blocks inherent in such an all-inclusive scheme.

The Survey of Bibliographical Services undertaken by the Library of Congress for Unesco was written as a working paper for the International Conference on Bibliography held in 1950. It sets out to define bibliography and to state its purpose and task: "*Bibliography* . . . is defined as the technique of systematically producing descriptive lists of written or published records (especially books and similar materials). *A bibliography* is defined as such a list, so produced."[15] The bibliographical working group in the Netherlands felt this definition was too inclusive and wished to exclude library catalogues and union catalogues. Mr. Besterman would have generally agreed with this objection; but he pointed out twenty years earlier that the subject catalogue of a special library or even of a special collection within a large library may be a very valuable guide to the

[14] Schneider, Georg, *op. cit.*, p. 286.

[15] Unesco. Library of Congress Bibliographical Survey, *Bibliographical Services; their Present State and Possibilities of Improvement*, Washington, 1950, p. 1.

literature of its particular subject.[16] The Survey goes on to state the purpose of bibliography: "to enable identification of specific records and to provide information of various kinds regarding them." From this it follows that its "task . . . is so to fulfil its purpose as to make a maximum contribution to those needs which can be usefully served by it". Within the compass of this task bibliography should:

1. Make it possible for intellectual workers to learn of publications recording the developments in their fields of interest not only in their own countries but throughout the world.
2. Promote the effectiveness of particular projects in research.
3. Contribute to the cultural development and enjoyment which are derivable from the records of learning and culture.
4. Assist in promoting useful applications of existing knowledge and in making the applications which have been developed in one country widely known to all countries.[17]

These are very practical statements and it is worth noting that none of the various national working groups which considered them objected to the use of the word "technique" in the main definition. This reflects the general thinking on the subject since 1945, and is seen in the concentration on problems of standardisation in the techniques of bibliographical description. These must, of course, be solved and are by no means small or trifling, but they seem to have obscured the intellectual aspects of bibliography.

The Survey reviewed the state of bibliography and bibliographical services and considered the various characteristics which can combine in differing ways to make up the numerous types of bibliographies, presuming that each type serves a different purpose depending on the need for a particular approach. It pointed out that few generalisations can be made about them until more is known about these purposes and needs and how adequately they are being served. It may then be possible to consolidate some of them and to establish an inter-relationship between the various types. It found, however, that despite this diversity, bibliographies tend to fall into one of two groups; those which are concerned with national production listing their material comprehensively, and those which select their materials on the basis of subject content, irrespective of the place of origin. The Survey considered the circumstances

[16] Besterman, T., *The Beginnings of Systematic Bibliography*, 2nd ed., London: Oxford, 1936, p. 2.

[17] Unesco. Library of Congress Bibliographical Survey, *op. cit.*, pp. 2–3.

affecting bibliographical work and the adequacy of existing services, according to subject field or class of material. Specific criticisms included: lack of comprehensiveness; lack of selectivity and analysis; lack of co-ordination; lack of promptness; lack of cumulations; unadaptability to use by various language groups or by various specialist groups; and finally excessive costliness. It would seem almost impossible in the present circumstances to overcome all these criticisms or even some of them without worsening the position with regard to some of the others.

The Survey then concentrated on current bibliographical services being those which make most use of primary access to materials, and which provide the basis for other bibliographical work. In order to obtain services which will be informative, efficient (in terms of the time and work of the user) and of reasonable cost, it suggested a plan of integration. It envisaged a current comprehensive bibliography built upon national bibliographies which would cover all forms and types of publications produced in each country. It stated:

> It is possible to conceive a current comprehensive bibliographic service in which bibliographic and analytic indexing would be so combined as to comprehend not only publications in the book-trade, but also all additional classes of publications. . . . Such a service would have to be able to segregate, at will, the various classes of publications—books, periodicals, periodical articles, maps, etc.—in accordance with predetermined definitions. It would contain not only bibliographic indexing but analytic indexing as well, and the contents of newspapers and the subject-analysis of government documents would thus become—as they should—part of the national bibliography. A necessary requirement is that such a service should be neither cumbersome nor expensive. . . . It would be possible to draw promptly from this service, in accordance with predetermined definitions, the materials desired in any category, with such indications of subject-analysis as might be agreed upon. Techniques would be provided to make possible the rapid comparison of entries so as to permit rejection or selection of data by individual users. Only the necessity for solving problems of language and international terminology would prevent the rapid development of complete national current comprehensive bibliographical services constructed on this model into a complete world current comprehensive bibliographical service! All that is needed is the technique—and the necessary co-operation![18]

(The exclamation marks are those of the Survey.) Such a service would provide a substratum for current selective bibliography. The characteristics which could be brought out in selection would be those of value, of content, subject or literary form, and of distribution or location. While proposing such a scheme of integration, the Survey posed several questions which would have to be answered before it could be put into operation:

[18] Unesco. Library of Congress Bibliographical Survey, *op. cit.*, pp. 24–5.

> Is complete coverage of all classes of publications in a single current comprehensive bibliographical service or through an integration of such services possible? Desirable?
>
> What are the requirements in terms of methods of collection, description, analysis and presentation; of methods for making selection and comparison possible; of costs and support?
>
> What mechanical devices would be required and how can they be developed?
>
> What elements of centralised and decentralised effort should be involved, and how could local groups and individuals contribute?[19]

The national bibliographical working groups must have found these a stimulating basis for their discussions.[20] Most of the groups, however, had doubts about the value of a "fully flexible current comprehensive bibliography" particularly as a basis for a current selective bibliography. Opinions ranged from statements such as that by the Netherlands group that it was "considered to be unattainable for the time being" to the German finding that it was neither possible nor desirable. The latter claimed that the selection and description of literature for scientific purposes "is no mechanical process but part of scientific work itself. What is important from one point of view may be unimportant from another. Science is not of the sort to proceed permanently on the road of its present systematics and notions, but it may choose to go new roads at any time. . . ." The British report came to a similar conclusion and mentioned the various elements which make selective bibliography so valuable to the research worker, and which would be lost or overlooked if such bibliographies were built on a comprehensive international one. It felt that the Survey failed

> to emphasise that selective bibliography is often performed to meet the needs of a body of workers attached to an institution. This attachment imposes limits but also frequently discloses original unpublished material not always available to more than a limited number. Selective bibliographies choose their material from library catalogues and indices to periodicals; scrutiny of periodicals; publications of corporate bodies and trade bibliographies; from contacts with workers in their field; from automatic receipt and exchange of publications . . . by neglecting to consider bibliography in relation to the other methods by which information is stored and transmitted, particularly the value of specialists and the importance of contacts between human beings, [the Survey] has a somewhat mechanical approach. . . . Indeed in the scientific community the comprehensive subject bibliography which is produced somewhat mechanically by non-specialists is tending to bring the arts of the bibliographer into disrepute and the requirement is not so much for more comprehensive bibliographies but more understanding in the national and general libraries of the subject matter of the existing selective bibliographies.[21]

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[19] Unesco. Library of Congress Bibliographical Survey, *op. cit.*, p. 27.

[20] Unesco. Library of Congress Bibliographical Survey, vol. 2, *National Development and International Planning of Bibliographical Services*, Paris, 1950.

[21] Unesco. Library of Congress Bibliographical Survey, vol. 2, *op. cit.*, pp. 25–6.

Denmark pointed out that current selective bibliographies must differ not only as regards the different levels but the different national approaches: the best Danish books on specific topics are not necessarily the best for a bibliography intended for foreigners. France, however, advocated current national bibliographies which would cover "works, whether offered for sale in bookshops or not, and whether legally deposited or not; miscellaneous documents, it being considered desirable to include certain kinds of documents that have so far been listed inadequately or not at all". Such bibliographies could be used for the compilation of secondary bibliographies. "The necessity for abandoning current national subject bibliographies [was] generally recognised" in that "scientific subject bibliographies should transcend political and even linguistic frontiers." The French group recognised that current international subject bibliography could be divided into two types which would satisfy two requirements: the need for elaborate analysis and abstracts in specialised topics, and the need for brief indications regarding the tenor of a work or article in the larger subject fields. With regard to the former it was thought that it was impossible to eliminate overlapping altogether "for abstracts are written from different points of view . . . there are border subjects with which several related disciplines may be concerned, thus entailing various analyses of the same document".[22]

As a result of the International Conference on Bibliography which followed these reports, an International Advisory Committee on Bibliography was set up which has concentrated on encouraging the compilation of national comprehensive bibliographies, both current and retrospective, as many countries lacked these essential tools, and a great deal of progress has been made. The first report on Bibliographical Services throughout the World, 1951/2, which Mlle Malclès produced, was focused on national bibliography, and she regretted that through lack of time it has not been possible to include a study of

> current specialised bibliographies, considered as the work of a single expert, a team or a more complex organisation, national methods of registering documents other than those in the book category—administrative, official and academic publications, new periodicals, music scores, films, microfilms, records, engravings, prints, maps, atlases, etc.; the place reserved for bibliography in professional training in the different countries, etc.[23]

[22] Unesco. Library of Congress Bibliographical Survey, vol. 2, *op. cit.*, p. 14.

[23] Unesco. *Bibliographical Services Throughout the World; First and Second Annual Reports*, 1951–52, 1952–53, by L. N. Malclès, Paris, Unesco, 1955, p. 19.

Individual studies of some of these problems have been attempted since then and have appeared in the literature.

There have been several writers on bibliography since 1950 who have discussed an integrated comprehensive international bibliography or variations of such a proposition, and they fall into two opposing schools of thought. Those who have advocated integration are, for the most part, American librarians and J. H. Shera, Dean of the School of Library Science, Western Reserve University, has been foremost in proposing a "macrocosmic" approach to bibliography. He joined with Miss M. E. Egan in publishing a paper in the *Library Quarterly* of 1952 entitled "Foundations of a Theory of Bibliography".[24] They drew attention to what they saw as the fundamental problems underlying any consideration of a programme of bibliographic research or development: the conflict between two opposing points of view, the two which we have already seen in the discussions arising from the Unesco/Library of Congress Survey. Egan and Shera termed these the "macrocosmic" and the "microcosmic" points of view, and proposed that the former was the only method of approaching the problem since bibliography is an instrumentality of communication, which itself is an instrumentality of social organisation and action, and consequently has a role in the total social process of communication. The microcosmic approach, on the other hand, cannot participate fully in this process, as it brings under observation only a small segment of the total flow of communication. Each microcosmic bibliography is a separate tool, fashioned to meet the specific needs of a limited number of persons having little or no acknowledged relationship to any other group. For effective bibliographic services there must be an awareness of the unity of bibliographic endeavour as well as appropriate communication *within* each particular group of users, *among* the several groups of scholars and specialists, and *between* the different levels of groups. This thesis was anticipated in a paper on bibliographic management contributed by Shera in the previous year to *American Documentation*,[25] in which he applied managerial principles to its organisation. "In the past", he says, "bibliography has been no more than an unstructured cluster of particular enterprises, each shaped by decisions that were based almost wholly upon the dictates of fortuitous circumstances—time, place,

[24] Egan, M. E. and Shera, J. H., Foundations of a theory of bibliography, *Library Quarterly*, 22 (1952) pp. 125–37.

[25] Shera, J. H., Bibliographic management, *American Documentation* 2 (1951) pp. 47–54.

materials or resources available."[26] He sees bibliographic organisation as being on three levels: a general level when it is almost equivalent to a public utility; a particular level, when it is designed to serve the needs of a specialised or limited clientele; and an internal level in the execution of a specific project.

K. Bourton joined issue with these theories in the *Aslib Proceedings* of January 1959[27] on behalf of special and industrial librarians, who are mainly concerned with microcosmic bibliography. His main argument is that bibliographical services must vary from subject to subject and according to the needs of the user, and that it is impossible to foresee all these when organising an integrated system, even if such a system could be organised in three divisions: science and technology, social sciences and the humanities on the assumption that the clientele in each division has similar needs and methods of approach.

MEDLARS can be described as an integrated bibliographical service in the field of medicine. The *Index Medicus* provides a comprehensive bibliography of medical literature, and from the same information its Recurring Bibliographic Service provides specialised and selective bibliographies for particular groups. The feasibility and success of integrated bibliography may depend upon discovering the optimum size of a subject field, which is confined to a group of practitioners having similar bibliographic needs and methods of approach, yet which is broad enough to include every topic of relevant information without fragmentation.

Mention has already been made of Dr. Boehm's proposals for an integrated and co-ordinated bibliographical service for the social sciences and humanities (see pp. 30–1). Despite the interdisciplinary connections within these subjects, it is doubtful whether the literature of the social sciences and the humanities can be bibliographically treated and controlled as a whole.

At least one American librarian has sounded a warning against integration. Ralph Shaw[28] sees it as the persistence of the ideal which started in the sixteenth century with Gesner's *Bibliotheca Universalis*, and which, because of developments in techniques, printing devices and mechanical aids, appears always to be possible and close to realisation. Even if inte-

[26] *Ibid.*, p. 47.

[27] Bourton, K., Subject bibliographies and their compilation, *Aslib Proceedings*, 11 (1959) pp. 5–8.

[28] Shaw, R. R., Integrated bibliography, *Library Journal*, 90 (1965) pp. 819–23.

grated bibliography is now feasible (which he denies), it is doubtful if at any time, now or in the past, it was desirable. The individual bibliography has the virtue of being able to change its form, its subject headings and its arrangement to suit changing emphases and audiences, whereas an integrated bibliography must have entries of a rigorously disciplined uniformity. This view is very similar to that expressed by the German bibliographical working group fifteen years earlier in 1950.

Most of the plans for integrated universal bibliography ignore the complications of including references in languages other than European ones. Until the twentieth century scholarly communication was confined to a few West European languages, and even today many research workers tend to think of publications as being confined to these and the Slavonic group. A combination of nationalism and the present trend towards industrial, technological development is responsible for an increasing amount of material in Asiatic and African languages. This immediately raises problems of translation and transliteration. The International Standards Organisation has produced a recommended code for the transliteration of the Cyrillic alphabet and provisional codes for Arabic, Hebrew and Greek, but it is difficult to get these accepted since inevitably there will be aspects of such codes which are more in keeping with one of the Latin alphabet languages than with another, or which run counter to traditions and practices cherished by individuals and nations for excellent reasons.

The transcription of languages which use ideographs poses even more problems; for instance, a transcription system based on sounds for the Chinese language worked out by an Anglo-Saxon would be different from one worked out by either a Frenchman or a Turk. To combine references drawn from all languages in one bibliography is well nigh impossible and it has been suggested that "international" bibliographies should be sectionised into language groups or according to the type of written language symbolism. M. Jean Meyriat, Secretary General of the International Committee for Social Science Documentation, in his report to Unesco in 1957[29] on the general principles governing international bibliographical work, paid particular attention to this problem. Although his report did not provide answers to the difficulties of compiling a truly international bibliography it is valuable in drawing attention to them.

[29] Meyriat, J., *Report on the General Principles Governing International Bibliographical Work*, Paris: Unesco, 1957 (UNESCO/CUA/82).

It pointed out that there are at least three different criteria which can be applied when defining an international bibliography:

1. That of origin; that is, it may be published by an organisation which is designated as international.
2. That of authorship, in that it may be compiled by or under the direction of a group of persons of different nationality.
3. That of content; that is, it may contain information about publications from more than one country. Such a bibliography may be prepared in and by a single country, but may cover all publications on a given subject, or it may be a universal bibliography to which all countries contribute. The former is likely to be biased, and the production of the latter will be slow and unwieldy. The method of compiling existing bibliographies which claim their contents have an international coverage is a compromise between centralisation and co-operation from contributors.

One section of the report dealt with subject bibliography, and Meyriat asked the question: is there any optimum size for such a bibliography? In a bibliography covering a broad field it is difficult to have an individual compiler or team of experts with genuine and equal competence in all its relevant topics. Meyriat felt that a subject bibliography should not extend its coverage unduly into border areas, which it can only handle in an amateur fashion; it should rather refer its users to other bibliographies in these fields. He allowed, however, that a certain amount of overlapping between bibliographies is necessary, and instances the fact that the International Committee for Social Science Documentation finds it normal for as high a proportion as 16 per cent of the total number of entries to be duplicated in any two of its international bibliographies. The dividing lines between specialised subjects are not only blurred but they can be drawn in several directions: bibliographies on literatures are usually prepared in the country of origin but may include articles published outside it; bibliographies produced for area studies will overlap with international bibliographies on geography, history, language, anthropology, etc. Meyriat also drew attention to the fact that very few subject bibliographies use an existing general classification system, and pointed out that the specialist tends to regard any general classification as excellent for all subjects but his own. Individual classification systems usually reflect the most recent concepts of the subject or even national viewpoints. In surveying the whole

field of international bibliography, M. Meyriat found that it would benefit from a conscious effort to place it on a more methodical basis. He recommended that persons carrying out such work should be able to count on some kind of technical assistance from Unesco; that experts should first work out standard solutions which would be applicable to the main types of technical problem commonly encountered, or at least a rational method of dealing with them; and that everything should be done to facilitate their practical application.

The opposing views for and against integrated bibliography, and the various views on international bibliography continue to be expressed, but at the same time much is being done to improve and standardise national comprehensive bibliography, and to study the various forms which subject bibliography may take, the needs of its potential users with regard to their methods of research, and other means of information dissemination.

# 5. SUBJECT BIBLIOGRAPHY AND THE FLOW OF INFORMATION

SUBJECT bibliography is intimately concerned with the flow of information, and it is necessary to study the role of subject bibliographies in this connection along with other aspects of the whole problem of information and communication. Subject bibliographies may be considered

1. as part of the whole system of scholarly communication;
2. in relation to other library devices and tools and their relative value;
3. in connection with the needs and the literature searching methods of research workers;
4. in connection with the characteristics of the different subject literatures;
5. in relation to information storage and retrieval systems operated by computer.

All these aspects have considerable bearing upon this role and no one aspect can be studied in isolation.

**Scholarly Communication**

Reference has already been made to the development of documentation as distinct from librarianship. The first use of the term dates from 1934 when Paul Otlet, one of the founders of the International Institute of Bibliography, published his *Traité de Documentation*[1] and the word was well established by 1937 when the Institute became the International Federation for Documentation. In 1948 S. C. Bradford defined documentation as

> the art of collecting, classifying and making readily accessible the records of all kinds of intellectual activity . . . the process by which . . . is . . . put before the creative specialist the existing literature bearing on the subject of his investigation, in order that he may be made fully aware of previous achievements in his subject and thus be saved from the dissipation of his genius upon work already done.[2]

[1] Otlet, Paul, *Traité de Documentation*, Brussels: Editiones Mundaneum, 1934.
[2] Bradford, S. C., *Documentation*, London: Crosby Lockwood, 1948, p. 11.

Many might claim that such a definition can also apply to librarianship. Dr. J. H. Shera has further elaborated documentation as being a "device to expedite the flow of recorded information within a group of specialists or between various groups of specialists. It is not concerned with the flow of communication at the popular, non-specialist or lay-public levels",[3] and defines its task as "the matching of two patterns; the pattern of all scholarly activities in which the use of primary graphic records plays a part, and the pattern of intermediary services which transmit primary recorded materials from the scholar-as-producer to the scholar-as-user." He sees documentation as part of the whole function of bibliographical organisation, as the latter is concerned with the "channeling of graphic records to all users, for all purposes and at all levels in such a way as to maximise the social utilisation of recorded human experience."[4] The division between librarianship and documentation was brought about by the exigencies of intensive scientific research. Whereas libraries, particularly public ones, could be regarded as educational institutions organising their holdings so as to provide general guidance to knowledge, documentation centres and special libraries were necessary to provide the exact information upon minute and precise topics, which was needed for scientific research and the conduct of business, industry and government. Dr. Shera sees the university library in the United States as attempting both types of service by providing general undergraduate libraries and stack collections of research materials to cater for both needs. This is probably an over-simplification of the relationship between the two and many would prefer to see librarianship and documentation regarded as twin arts, each able to contribute something to the other. In their review of the present state of librarianship and documentation which appeared as an introduction to the second edition of *Documentation* edited by S. C. Bradford in 1953, Dr. Shera and Miss M. Egan[5] have pointed out that although librarianship and documentation have been pursuing separate paths they have many problems in common, such as the physical availability of material and the identification of the informational content of various bibliographic units. Both librarians and documentalists are vitally concerned in

[3] Shera, J. H., Documentation; its scope and limitations, *Library Quarterly*, 21 (1951) p. 13.

[4] *Ibid.*, p. 14.

[5] Shera, J. H. and Egan, M., A review of the present state of librarianship and documentation, *Documentation*, Bradford, S. C. (Ed.), 2nd ed., London: Crosby Lockwood 1953, pp. 11–45.

research into the structure and dynamics of social intelligence and communication and into the use of literature and bibliographical tools.

The first bibliographies did not set out to be vehicles of scholarly communication but as they became more and more concerned with the information contained in the items they listed rather than with books themselves or even with their authors, they became an essential part of the network required to communicate developments in human knowledge. Librarians and documentalists have been inclined to regard graphic records as the only means of communication within and between the various disciplines and bibliography as the only key to their use. As mentioned above, Shera and Egan attempted to place bibliography in the context of social communication as a whole, and in recent years sociologists have thrown light on the communication system of the sciences. Writing on the sociology of science in the *Handbook of Modern sociology*, edited by R. E. L. Faris, Dr. Norman Kaplan, Professor of Sociology at the University of Pennsylvania, has pointed out that studies exploring the ways in which scientists exchange and gather information show that communication is embedded in a network of social relationships and is by no means restricted to formal channels: "face-to-face and interpersonal communication plays a role of ever-increasing importance in scientific communication."[6] As the time-lag between the submission of a paper and its publication, and then between its publication and its citation in an indexing or abstracting journal increases, these informal channels will come more and more to the fore. Kaplan quoted Dr. A. M. Weinberg, chairman of the President's Science Advisory Committee in Washington, when it prepared its report on science, government and information,[7] as saying when summarising that report: "with respect to preprints, science faces a real danger of reverting to the privacy of the seventeenth century; some biologists think this has already happened to molecular biology, where preprints are often circulated only to one's friends."[8] Dr. W. D. Garvey and Mr. B. C. Griffith have been working since 1962 on a project sponsored by the American Psychological Association on the scientific information exchange in psychology and have described their finding in

[6] Kaplan, Norman, Sociology of science, *Handbook of Modern Sociology*, Faris, R. E. L. (Ed.), Chicago: Rand McNally, 1964, pp. 852–81.

[7] U.S. President's Science Advisory Committee, *Science, Government and Information*, Washington, 1963.

[8] Kaplan, Norman, *op. cit.*, p. 859.

the February 1965 issue of the *American Psychologist*[9] and at a Ciba Foundation Symposium on Communication in Science, held in November 1966.[10] They found that:

> The most striking feature of the process of dissemination in psychology is how small a portion is easily available to the scientific community. The public dissemination of information occurs late, takes only a few forms, and in its complete archival presentation, that is, in scientific journals, has a small immediate audience. Nevertheless, it is these forms which are the primary concern of current work in information retrieval. The system also includes a great variety of informal means of scientific communication, most of which, on the other hand, occurs relatively early in the process at about the time the author would have a complete written report in hand. While some of the audiences for these informal means of dissemination are small, others are comparable in size with those audiences which examine articles shortly after they appear in journals.[11]

They went on to introduce three innovations in the publications of the American Psychological Association.

The first was to effect changes in the operational structure of *Psychological Abstracts* so as to reduce the fifteen month time-lag between the publication of an article and its abstracting to four months. Then, to offset the time-lag between the submission of a paper and its journal publication a list of accepted manuscripts, giving titles and authors' names and addresses was published regularly in the journal, thus using a formal channel to encourage informal scientific information exchange between research workers in the same field. It was estimated that these papers would then be available to those interested nine to twelve months earlier. The third innovation was the publication of 1800 word previews of the papers to be presented at the annual convention, which usually amounted to a thousand, a sizeable proportion of American contributions to psychology. These previews, which would be abstracted in *Psychological Abstracts*, would represent current research reports which could be elaborated at the convention and later submitted in a longer more complete form for journal publication. These innovations, the authors claim, have considerably reduced most forms of informal information exchange between the time of the writing up of a paper and its publication and at

[9] Garvey, W. D. and Griffith, B. C., Scientific communication; the dissemination system in psychology and a theoretical framework for planning innovations, *American Psychologist*, 20 (1965) pp. 157–64.

[10] Garvey, W. D., Communication in a science; the system and its modification, *Communication in Science; a Ciba Foundation volume*, London: Churchill, 1967, pp. 16–36.

[11] Garvey, W. D. and Griffith, B. C., *op. cit.*, p. 161.

the same time have encouraged more intensive communication among persons doing closely related work. The innovations are still regarded as being "on trial", but satisfaction has been expressed as to the results so far. A similar series of studies in communication is being undertaken by Dr. Garvey with physicists, sociologists, geophysicists, meteorologists and a large technical group that contains both engineers and scientists—The American Institute of Aeronautics and Astronautics.

Whatever innovations are made in the publication of research work formal channels of communication can never entirely replace the informal ones. While librarians and documentalists explore means of improving formal communication by electronic and other devices, they should not overlook the existence of these other channels, which may in some instances be quicker and more efficient in putting the user in touch with the information he needs. Both types are a valuable and essential part of scholarly communication.

**Other Library Tools**

Another feature of the literature on subject bibliography is the dialogue which has been going on for about ninety years between, on the one hand, the protagonists of subject catalogues and, on the other, those of subject bibliographies. Dr. R. Swank, in the *Library Quarterly* of 1944, reviewed these discussions from 1876 to 1942,[12] and has shown that in the latter part of the nineteenth century the pros and cons of both sides were vigorously defended in the United States of America. Much of the argument for subject cataloguing derived from the librarians' enthusiasm for the systems of classification and subject headings worked out by Cutter and Dewey. The librarian of the Boston Public Library maintained in 1877 that American libraries had happily revolted against the traditional European attitude, and that a reversion to subject bibliographies would be a backward step in library service especially to the inexperienced student and layman who must have "the advantage of the catalogue to open to them the methods of research and independent learning".[13]

The man who spoke up most persistently in this period for subject bibliographies was W. I. Fletcher, librarian of Amherst College, who had

[12] Swank, R., Subject catalogs, classifications or bibliographies?, *Library Quarterly*, 14 (1944) pp. 316-38.

[13] Winsor, J., Libraries and catalogues, *Boston Daily Advertiser*, 10 Apr. 1877, quoted in Swank, R., *op. cit.*, p. 317.

been associated with Dr. W. F. Poole in the compilation of the *Index to Periodical Literature*. He maintained in an article in the *Library Journal* in 1886 that the elaborate system of cataloguing was breaking down under its own weight and that bibliography was the "watchword of the future".[14] He showed that bibliographical control of periodical literature could only be attained through such tools as *Poole's Index* and the then *ALA Index to General Literature and Annual Literary Index*, but he could not persuade his contemporaries to follow this principle to its logical conclusion, and to entrust the subject approach to individual books to bibliographies.

In 1904 the University Library of Vienna consulted the Library of Congress about the desirability of providing a subject catalogue when it was about to recatalogue its books. J. C. M. Hanson for the Library of Congress wrote in the *Library Journal*:

> . . . while a subject catalogue might possibly be dispensed with by a specialist who is thoroughly familiar with his subject, it will nevertheless prove also to him a convenience and an economy of sufficient value to justify its compilation. To the ordinary user of the library who cannot lay claim to special knowledge, and to the specialist when his investigations carry him into fields which are not strictly within his particular domain, it is a prime necessity.[15]

This appears to be the first clear realisation in the controversy that different readers use the library and its catalogues and tools in different ways. Earlier papers had in many cases argued at cross purposes because they had approached the problem from either the subject specialist's or the layman's viewpoint. The varying needs of different readers were to be recognised in the 1920s by H. B. Van Hoesen[16] and other American librarians, who suggested "selective" cataloguing which would provide subject catalogues primarily for undergraduates and general readers, while the more exhaustive and exacting needs of the specialist or scholar were to be left to subject bibliographies.

In Great Britain the announcement of the British Museum's intention to publish a subject catalogue in 1900 provoked a lively correspondence in *The Times*[17] in which "a scholar" maintained that such a catalogue in view of the increasing number of subject bibliographies was superfluous and a waste of public money and time. Ironically he was not to foresee

[14] Fletcher, W. I., Close classification versus bibliography, *Library Journal*, 11 (1886) pp. 209–12, quoted in Swank, R., *op. cit.*, p. 318.

[15] Hanson, J. C. M., Subject catalogs or bibliographies for large libraries, *Library Journal*, 29 (1904) pp. 472–4, quoted in Swank, R., *op. cit.*, p. 322.

[16] Van Hoesen, H. B. (Ed.), *Selective Cataloguing*, N.Y.: H. W. Wilson, 1928.

[17] See Swank, R., *op. cit.*, p. 321.

that this subject catalogue which is still being produced was to be used as a general subject bibliography.

During the twentieth century the controversy died down although there were other developments in the expansion and integration of library services which altered the situation. The outbursts of the 1880s and 1890s, however, must be partly responsible for the later independent development of documentation and librarianship along different paths which are only now converging again.

As Dr. Swank sees them, the contrasting virtues of the subject catalogue and the subject bibliography centre mainly on the competence of the bibliographer and the cataloguer, the process of compilation and the ease or difficulty of use. The protagonists of the subject catalogue claim that bibliographies are frequently inaccurate and that a cataloguer has better bibliographical training than the subject specialist. The case for subject bibliographies seems to hang mainly on whether the reader wishes to know what material exists on a particular subject or what is available in the particular library he is consulting. Both sides seem to have generalised about the "average reader" without much investigation of his needs or of his general approach to books and periodicals. The protagonists of subject bibliographies do not deny that the quality of a bibliography is all important and readily admit that many bibliographies and indexes are of little value and are frustrating to use. The most telling argument for subject bibliographies, however, is that they are compiled from the reader's point of view and list material which is relevant to a particular subject, whereas a subject catalogue refers to books in a particular library and describes them in terms of related subjects.

Following on this survey, Dr. Swank and two other American librarians have done studies comparing specific bibliographies with subject catalogues in certain university libraries. In "The Organisation of Library Materials for Research in English Literature" which appeared in the *Library Quarterly* for January 1945, Dr. Swank demonstrated that the "catalog—at least that of the University of Chicago Libraries—falls far short of providing the English scholar with the quality of bibliographical service which is known to be possible through published bibliographies".[18]

His investigation was concerned with the relative usefulness to scholars of the library catalogue, shelf classification and published bibliographies,

[18] Swank, R., The organisation of library materials for research in English literature, *Library Quarterly*, 15 (1945) pp. 49–74.

in their capacity as revelatory devices in the field of English literature, as it was revealed in the study of 108 doctoral dissertations presented at the University of Chicago. These represented six different types of literary scholarship: textual and subject aspects of a single work or works of a single author; literary works written in particular periods and containing materials on special subjects; critical works written in a particular period and treating special topics; critical works relating to literary works of individual authors; and general cultural background. The catalogue and shelf classification of the University of Chicago Libraries and the available published bibliographies were tested for the extent to which they revealed under significant headings the library materials used in the preparation of these dissertations. In every case individual bibliographies or combinations of bibliographies were found to produce better results—sometimes far better results—than the library catalogue and classification, taken separately or together. It could also be said that the bibliographies supplemented the two library tools, but not that the library tools supplemented the bibliographies in any important way. Deficiencies and limitations existed in the bibliographies but they were not corrected by the library catalogue or classification. The reason for this Dr. Swank suggests is that "the process of bibliography is more purposeful and realistic than that of cataloging and classification. The bibliographer . . . begins with a subject and asks what books are related to it. The cataloger begins with a book and asks what subjects are related to it."[19]

Five years later Mr. W. Simonton of the University of Minnesota Library, in *College and Research Libraries*, July 1950,[20] claimed that "for the research worker the catalog lists only a handful of titles not available in the bibliographies . . . for the general reader the catalog lists too many titles for the effective selection of the book to satisfy his particular needs . . . bibliographies provide better guidance since [they] . . . provide better annotations . . .". By checking entries in the subject catalogue of Columbia University Library against Ebisch and Schucking's *Shakespeare Bibliography* he found that "the heading used in the bibliography was in virtually every case more specific or more indicative of the book's actual contents than that of the catalog". The bibliography was "consciously selective as

[19] Swank, R., Subject catalogs, classifications or bibliographies?, *Library Quarterly*, 14 (1944) p. 331.

[20] Simonton, W., Duplication of subject entries in the catalog of a university library and bibliographies in English literature, *College and Research Libraries*, 11 (1950) pp. 215–21.

compared with the catalog, resulting in a list of titles more likely to be of value to the general reader";[21] for example, it listed a total of sixty-nine titles, including twenty-seven described as "The most important biographies" under the headings "Shakespeare's Life" and "Shakespeare's Personality" compared with fifty-two titles in the catalogue under "Shakespeare—Biography".

In the same journal R. D. Rogers of the Grosvenor Library, Buffalo, N.Y., showed statistically "what good subject bibliography can do which the card catalog and periodical indexes fail to do".[22]

Checking the same *Shakespeare Bibliography*, he found sixteen out of twenty books under "Sources, Literary Influences and Cultural Relations" could not be traced through reference to Shakespeare in the subject catalogue.

In his first paper Dr. Swank suggested that the solution to this problem probably lay in a compromise; in providing subject catalogues as well as bibliographies and added "the relations and special uses of these devices may conceivably undergo considerable change as the effectiveness with which particular tools satisfy the needs of different readers is more clearly understood".[23] These studies need to be followed up by a survey of readers and how they use these bibliographical aids, and what other methods they use to obtain such information.

## The Needs and Literature Searching Methods of Research Workers

There have been several surveys of the use of scientific literature and of the information-seeking procedures commonly employed by scientists. In the *Library Association Record*, August 1961, Mr. B. C. Vickery[24] has surveyed some of those which were carried out in the fifties. They took a variety of forms:

1. the analysis of records compiled for different purposes, such as reference counts of citations at the ends of papers, library loan records, reference questions;

[21] Simonton, W., *op. cit.*, p. 220.

[22] Rogers, R. D., Subject bibliography versus subject catalog and periodical index, *College and Research Libraries*, 11 (1950) pp. 211–14, 227.

[23] Swank, R., Subject catalogs, classifications or bibliographies?, *Library Quarterly*, 14 (1944) p. 332.

[24] Vickery, B. C., The use of scientific literature, *Library Association Record*, 63 (1961) pp. 263–9.

2. diaries and questionnaires completed by readers;
3. questionnaires recording users' opinions and estimates of their reading;
4. observational studies of how scientists actually spend their time. Many of them give information on some of the characteristics of the literature read by scientists, and these findings are similar to those described by R. E. Stevens eight years earlier, and referred to in a later section of this discussion (see pp. 70–1). Others have posed the questions: "How do they find this literature? What reference sources do they use?" A good deal of variation was found in the answers but Mr. Vickery has summarised them by stating that the scientist finds the information and references he wants through:

| | *per cent* |
|---|---|
| 1. Scanning of current material | 27 |
| 2. Citations in other literature | 19 |
| 3. Oral recommendations from colleagues | 21 |
| 4. Previous knowledge or his own index | 8 |
| 5. Indexes, abstracts, bibliographies, catalogues | 25 |

He concludes, therefore, that "the quantitative contribution to the scientists' reading (and learning) of formal bibliographical tools is equalled by the contributions of current scanning, cited references, and of oral recommendations".[25]

A later investigation was carried out by Mr. J. Martyn for the Aslib Research Department in 1964 on the information-seeking methods of academic industrial and government scientists, including psychologists.[26] It showed that most of them started a literature search by following up references cited in relevant papers. Other methods in order of use were: "keeping up" by reading current publications; gaining references from conversation with other workers in the field; using subject and author indexes in journals including abstracting journals; using a personal index. All these were rated as highly to moderately useful. Subject bibliographies were almost the last to be consulted and were not considered particularly helpful. It was, of course, not the purpose of this investigation to inquire why this was so.

[25] Vickery, B. C., *op. cit.*, p. 268.

[26] Martyn, J., *Report of an Investigation on Literature-searching by Research Scientists*, London: Aslib Research Dept., 1964.

In 1960 the Reference, Special and Information Section of the Library Association held a one day conference on the Information Methods of Research workers in the Social Sciences,[27] and three such workers at the lecturer and postgraduate student level were asked to speak. Instead of describing their methods of seeking information or the ways in which they used library services and bibliographical tools, their remarks were mainly confined to statements of their views about libraries in general. This was probably of great value to the librarians at the conference, but unfortunately can contribute little to the present discussion, except perhaps to cast doubts about the usefulness of subject bibliographies and abstracting journals, as these social scientists seemed almost unaware of their existence.

In 1964 J. S. Appel and T. Gurr[28] carried out a pilot study at New York University to obtain systematic information on the use and adequacy of existing bibliographic resources, and an evaluation by social and behavioural scientists of the usefulness of various features of several proposed information retrieval systems. They found that the average social scientist spends the equivalent of one working day per month at bibliographic tasks; that he feels his efforts are inadequate and that information is passing him by; that he makes relatively little use of the special resources available and that he is more likely to track down material through bibliographic footnotes and references than to use abstract journals, bibliographic studies, research assistants or librarians. The data Messrs. Appel and Gurr assembled suggested that only a few forms of bibliographic organisation were regarded as generally satisfactory, yet there seemed little agreement amongst the social and behavioural scientists as to the specific nature of the inadequacies of the existing forms. When the social scientists were asked what features they regarded as essential in an ideal bibliographical system they were far from a consensus, but more than half of them wanted comprehensive coverage, indexing which provided approaches from several points of view, descriptive abstracts and publication in serial form along separate disciplinary or interdisciplinary lines. The authors came to the conclusion that "perhaps because of conflicting,

[27] Library Association. *Information Methods of Research Workers in the Social Sciences; Proceedings of the Conference held* 1960; ed. by J. M. Harvey, London; Reference, Special and Information Section, Library Association, 1961.

[28] Appel, J. S. and Gurr, T., Bibliographic needs of social and behavioural scientists, *American Behavioral Scientist*, 7 (10), June 1964, pp. 51–4.

changing or undefined needs, most respondents do not really seem to know what kind of alternative bibliographic system they want".[29]

In 1965 a pilot survey was carried out by L. Uytterschaut at the State University of Ghent on the literature-searching methods of social scientists.[30] Twenty research workers were interviewed to find if they proceeded according to a general and uniformly applied work programme, and if they considered the outside help of a documentalist or a research librarian to be useful. He found that their main concern was to locate as quickly as possible the leading authors and standard works on the particular topic under consideration in order to get a selected list of the most relevant material, and to supplement it by recent findings in the periodicals of the subject field. Research procedure seemed to depend not so much on the problem under investigation or upon a particular subject specialisation, but on the number of years of experience in active research. Whereas the beginner preferred to carry out his literature search independently even though it involved following some false leads and was often very time-consuming, the experienced worker, being more sure of his ground, had developed his own short cuts and could avoid redundancy at the outset. The latter was also impatient of long-drawn-out bibliographies and reliance on library devices. Mr. Uytterschaut warns that this does not mean that he "deliberately neglects the value of bibliographic tools. But as far as their practical use is concerned, he only consults them occasionally to fill in his knowledge of the documentation available in his nearest surroundings."[31] As regards assistance from documentalists or librarians, twelve out of the twenty persons interviewed thought it would be effective, but only for providing reference lists of material suitable for investigating the subject matter, and denied that it should encompass abstracting or preparing a literature report. From these findings it would appear that the Belgian social scientist's literature search procedures differ little from those of the British scientist or the American social scientist, and are in fact a matter of trial and error involving as Uytterschaut says, an "inscrutable mixture of subject experience and intuition". At the University of Bath, the Librarian, Mr. M. B. Line, is carrying out an investigation into the information requirements of the social sciences

[29] Appel, J. S. and Gurr, T., *op. cit.*, p. 54.

[30] Uytterschaut, L., Literature-searching methods in social science research; a pilot study, *American Behavioral Scientist*, 9 (9), May 1966, pp. 14, 23–6.

[31] Uytterschaut, L., *op. cit.*, p. 25.

with the aid of a grant from OSTI (Office of Scientific and Technical Information). The adequacy of existing information will be examined in the light of these requirements and recommendations will be made for the more effective use of present tools and techniques where necessary. Similar surveys have not been carried out amongst humanistic scholars and none are at present planned.

There are doubtless several reasons for the reluctance of scholars to use subject bibliographies: the surveys so far made suggest two; the variety of arrangements and formats used in the bibliographies available, and lack of knowledge on the scholar's part of such tools and their use. Yet the studies carried out by Swank, Simonton and Rogers mentioned above showed how subject bibliographies in the humanities can reveal more material in a library than can its subject catalogue. It would have been valuable if these studies could have been followed by others of the actual use made of these bibliographies by various readers. It would be interesting to know where the authors of the doctoral dissertations in Dr. Swank's study obtained the references to the material they cited (see pp. 64–5). Was it from the subject bibliographies, the subject catalogue of the University of Chicago Libraries or a combination of both, or indeed from some other source or sources? The authors of the doctoral dissertations of the historical research type surveyed by Dr. Stevens cited a greater number and a wider variety of references than those writing on experimental type research (see p. 25). Where did they obtain their information about them? One thing is certain; the catalogues and shelf classification of their university libraries did not play a major part, since Dr. Stevens found that 47·87 per cent of the unique references in his sample and 13·36 per cent of the core references were not available in those libraries.

As bibliographical tools become increasingly available, these aspects must be investigated if they are to justify the time and money expended upon their compilation and publication.

## Characteristics of Different Subject Literatures

Related surveys have tried to define the characteristics of the various subject literatures. In his summary of those undertaken before 1953, R. E. Stevens[32] shows that these were mostly confined to the pure and

[32] Stevens, R. E., *Characteristics of Subject Literature*, Chicago; Association of College and Research Libraries, 1953. (A.C.R.L. Monograph No. 6.)

applied sciences. These have revealed that the demand for scientific literature between five and ten years old is much less than that for material less than five years old, and that after ten years the demand falls off even more sharply. For the humanities and social sciences he could only instance one survey, the 1952 Ph.D. dissertation by A. M. McAnally presented at the Graduate Library School at the University of Chicago,[33] which analysed the characteristics of the literature relevant to the study of United States History from references cited in 100 doctoral dissertations. This showed a completely different picture from any of the seven surveys in the sciences and technologies. Of the references to publications for United States History, only 10·4 per cent were for material published in the preceding five years, and only 33·8 per cent for material published in the preceding twenty years, so that more than 66 per cent of the references were for material more than twenty years old. McAnally found that the references were made up of: books and pamphlets, 45·6 per cent; newspapers, 12·2 per cent; documents and laws, 12·7 per cent; manuscripts, 10·3 per cent; and journal articles, 9·2 per cent. In contrast, in scientific or technological papers, references to newspapers, documents, laws and manuscripts were rarely if ever cited, and those to books or monographs were few. Between 85·4 to 92·7 per cent were to journal articles. Stevens summarises by saying "the literature of the social sciences and humanities exhibit a great dispersion of publications in different forms, on different subjects and of a comparatively long span of time".[34] Stevens's own study of references cited in dissertations in Classics, Education, History, Botany and Psychology corroborates (p. 25) McAnally's picture as regards the greater number and variety of references cited in historical research as compared with experimental research.

In 1964 the National Central Library, London, carried out a survey of all loan applications handled between January and June 1964, in order to gain information about the type of publications being requested and about the libraries participating in inter-library lending. A summary of the results of this survey was published in the *Library Association Record* in August 1966 by Messrs. Filon and Gibb of the National Central Library.[35] The applications were analysed according to subject matter, and date and

[33] McAnally, A. M., *Characteristics of Materials used in Research in United States History*, Ph.D. dissertation, Graduate Library School, University of Chicago, 1951.

[34] Stevens, R. E., *op. cit.*, p. 19.

[35] Filon, S. P. and Gibb, I. P., Inter-library lending, *Library Association Record*, 68 (1966) pp. 289–94, 305.

type of publication. The information gained in this way has revealed interesting features about the literature of the humanities and the social sciences. It was noticed that "a much greater proportion of requests in the humanities is for monographs than is the case in science and technology where there are nearly as many requests for periodicals as for monographs. The case of the social sciences lies somewhere between the two. . . ." Government publications were found to be very important for the social sciences, while material like theses, music and maps were particularly relevant in the humanities. The survey also revealed that "about half the applications received by the Library are for post-1950 material, and that pre-1930 material constitutes approximately a quarter of the total and 1930–1950 material another quarter".[36] For a special study carried out at the Postgraduate School of Librarianship at the University of Sheffield, M. K. Buckland[37] had access to data gathered for this survey, which included a further analysis of the applications according to date of publication and subject field. He was able to list by date of publication the number of applications received in the humanities and social sciences and the number received in the field of history. Mr. Buckland's tables therefore show characteristics of the age-distribution of these subjects which can be compared with the general statement above. In the humanities and social sciences just over a third of the applications were published between 1950 and 1964; about a quarter between 1930 and 1950, and the remainder before 1930; while in the field of history less than a quarter of the applications were published between 1950 and 1964, about a quarter between 1930 and 1950, another quarter between 1900 and 1930, and the remaining quarter before 1900. It is dangerous to generalise about the literature of the humanities and social sciences on the evidence of these studies, but it coincides with the generally accepted view that literature in these fields ages more slowly and that in the humanities in particular little can be completely discounted. While the increase in documentation in these disciplines has not equalled that in the sciences, the cumulative building up of this literature emphasises the greater need for retrospective bibliography and for co-ordinated control of it.

[36] Filon, S. P. and Gibb, I. P., *op. cit.*, p. 291.

[37] Buckland, M. K., Towards a Better Inter-library Loan Service; a study submitted in partial requirement for the Postgraduate Diploma in Librarianship at the University of Sheffield, 1965.

Fortunately, as we have seen, bibliographies and even bibliographies of bibliographies have been in existence almost as long as books themselves, so that tools do exist with which to exploit the older literature, but their variety of format, their occasional brevity of detail and in many cases their lack of method demand much bibliographical skill, knowledge and perseverance on the part of the user. Bibliographical guides to the literature of the different branches of the humanities are, therefore, all important.

**Information Storage and Retrieval**

The advent of computers has opened up new horizons in bibliographic control and much has been written on automated information storage and retrieval. The technical problems have received a lot of attention, but one keeps coming back to the inescapable fact that, in terms of intellectual quality, a computer's output is only as good as its man-prepared input. The computer's great asset is that it can save human time in sorting and other clerical routines, and can perform rapidly the colossal task of searching a whole body of information in order to extract specific items of information, some of which it was never economical to obtain manually. H. Borko and L. B. Doyle[38] of the Information Retrieval and Linguistics Project at the System Development Corporation have listed four levels of abstraction on which information storage and retrieval can be viewed. The highest is that of the structure of the retrieval problem itself; next, that of the analysis of the system in order to combine the techniques most appropriate for a specific purpose; third, that of methods and procedures for manipulating the information; the lowest level is that of the mechanics of the automatic devices themselves.

Messrs. Borko and Doyle recall that unfortunately the study of what has become the new discipline of Information Science, started on the lowest level and proceeded upwards. "In the earliest years of development, emphasis was on swift application of the new equipment that the electronic age brought into being; very little thought, if any, was given to information-processing methods, or to efficient arrangement of tasks into a system."[39] At the level of procedures much research was done to develop methods for producing automatic abstracting, permuted title indexing and

[38] Borko, H. and Doyle, L. B., The changing horizon of information storage and retrieval, *American Behavioral Scientist*, 7 (10), June 1964, pp. 3–8.

[39] *Ibid.*, p. 4.

other ingenious arrangements, but these have brought their own problems with them. The analysis of systems in order to combine the most appropriate techniques of indexing, storing and searching, and the analysis and definition of the goal of information retrieval have only recently received attention. The latter is intimately bound up with the users' needs and requirements. As these authors have pointed out "all too often, workers in the document retrieval field have assumed a definition of the problem, in terms of particular user requirements, and have gone ahead only to build a 'white elephant' ".[40] They have suggested that only by viewing the problem on the highest level will it be possible to evolve systems which are adapted to the needs of the human user rather than ones which require adaptation on his part.

Several examples of the use of computers in information retrieval in the social sciences and humanities have been mentioned above, but it is obvious that not enough research has been done on this level, and that it is necessary to state exactly what needs and requirements it proposes to satisfy.

The phrase "information storage and retrieval" has been current only since experiments in performing such a process with the aid of computers have been carried out; but obviously man has always been storing information in various ways in order to use or retrieve it at a later date, and his methods of bibliographic control are themselves an example of this. The new term has, however, helped to restate its primary purpose. The emphasis in the past has been on "control" and many bibliographies give the impression that their compilers have felt that the mere arrangement of books in lists would give them control over them, but the new term reminds us that it cannot be an end in itself; the information which has been so painstakingly stored may later be required or thought useful by others, and what information later inquirers will get depends a great deal on the intellectual effort put into the original arrangement. The computer problems of coding and decoding have encouraged us to think again about the old problems of bibliographic description with particular reference to the associated process of bibliographic searching.

We are also reminded that bibliographies give us information about books or other bibliographic units, which themselves provide information, so that for most purposes bibliographies are guides to the location of information. As mentioned in an earlier section, the "collectanea" pro-

[40] *Ibid.*, p. 7.

vides the information as well as its location. The desire for direct access to information as contrasted with the documents which contain it is mentioned by Professor J. D. Bernal. He claims that

> the main currency of scientific information is the secondary sources in the form of abstracts, reports, tables, etc., and that the primary sources are only for detailed reference by very few people. It is possible that the fate of most scientific papers will be not to be read by anyone who uses them, but with luck they will furnish an item, a number, some facts or data to such reports which may, but usually will not, lead to the original paper being consulted.[41]

Dr. H. Coblans, editor of the *Journal of Documentation*, has pointed out that the contents of a scientific paper can be analysed into (1) data, (2) procedures and methods, and (3) ideas and theories. A computer memory can readily store one, but not two and three.[42] Libraries can process and retrieve the scientific paper as a whole, but specialised centres, such as the Gmelin Institute with its computerised information service, can store and retrieve the data contained in it. This will be the role of the computer in documentation.

When considering the application of modern information-retrieval methods to social science material in the December 1958 issue of the *Journal of Documentation*,[43] the late Barbara Kyle listed the types of information under five headings:

1. Accurate and detailed subject information, described in unambiguous terms.
2. Generalised and speculative information, which is conditioned by context and terms of reference.
3. Historical and descriptive material, which can include precise information as regards time and place, or broad fields of study.
4. Information identifiable by such accidentals as form, author's name, language, nationality, chronology, etc.
5. Information identifiable by proper nouns or other words widely accepted when cited in a particular context, such as Gestalt, Mendelism and the citation of law cases.

[41] Bernal, J. D., The supply of information to the scientist, *Journal of Documentation*, 13 (1957) p. 207.

[42] Coblans, H., The communication of information, Goldsmith, M. and Mackay, A. (Eds.), *Society and Science*, N.Y.: Simon & Schuster, 1964, pp. 93–101.

[43] Kyle, Barbara, Some further considerations on the application to social science material of up-to-date methods of bibliographical control and information retrieval, *Journal of Documentation*, 14 (1958) pp. 190–6.

Modern techniques make literature searching and information retrieval of specific items of information possible by computers, but as Miss Kyle pointed out, the greater proportion of social science literature at present falls into the second and third categories, whereas it is the first, fourth and fifth which can be more easily coded and handled by them. The crux of the technical problem lies in the fact that computer techniques require the elimination of synonyms and undefined terms while social scientists suffer from imprecision of terminology and use a very extensive vocabulary. Not only do sociologists, political scientists, economists and social anthropologists freely use each other's vocabularies, but no one is sure which of many possible meanings is intended.

# 6. THE ARRANGEMENT OF SUBJECT BIBLIOGRAPHIES

THE ease with which any file or system of records can be used depends primarily upon its arrangement. As the information recorded in most systems is written or printed, considerations of format and typography are also important in making the arrangement clear and readily legible. The arrangement will necessarily depend upon what information it is intended that the system should provide, and upon the type of user for whom it is designed. A bibliography can be regarded basically as a file or recording system, and although several books and articles have been written about the various ways of arranging bibliographies, they provide no hard and fast rules. This may be attributed in part to the great variation in the size and scope of individual bibliographies, as the importance we attach to the arrangement of entries in a subject bibliography grows in proportion to the number of entries envisaged.

Obviously if the bibliography is to contain a mere handful of titles it makes little difference if they are listed in some sort of order or not. The more titles that are involved, however, the more complex the arrangement is likely to become. It may be necessary to use one type of arrangement to provide a preliminary grouping of the entries and to use another type or types for a second and third arrangement, as well as to supplement them with additional indexes. Much has also been made of the individual needs of the various disciplines, many bibliographers maintaining that each subject-field needs an individual arrangement tailored to its own requirements. Mr. R. L. Collison, in *Bibliographies; Subject and National*, says "the best bibliographies are notable for their consistency of purpose and treatment: the details are given in the same order and form throughout—which facilitates easy reference—and the contents and arrangement are based on an idea which is a real contribution to knowledge".[1] In the first decade of the twentieth century, the Société des Études Historiques com-

[1] Collison, R. L., *Bibliographies; Subject and National*, 2nd ed., London: Crosby Lockwood, 1962, p. xv.

missioned several specialised selective bibliographies for its series *Bibliothèque de Bibliographies Critiques*, but it gave little guidance to the compilers in the matter of arrangement. F. Funck-Brentano in the introductory essay to the series writes:

> La Société n'a pas voulu imposer à ses collaborateurs un plan trop nettement limité, trop rigoureusement defini. . . . Chaque auteur est libre d'ordonner sa bibliographie de la manière qu'il juge préférable pourvu qu'il satisfasse au principe primordial; le principe critique: "Ne donner que ce qui est utile ou intéressant à consulter avec un mot d'appréciation sur les mérites, les défauts aussi, et les caractères des principaux écrits cités."[2]

It is not surprising, therefore, that most bibliographers have followed their own preferences. Some have built on the foundations laid by others adding what they regarded as improvements.

Before beginning to compile a subject bibliography, a bibliographer should ask himself what information he intends to provide. Some bibliographies are difficult to use because they have attempted to provide too much information, and although all the features they include may be individually valuable, their combination in one work may make it so difficult to use that only the most persistent and patient of users will persevere with it. This is not to say that a single bibliography cannot successfully combine two or more functions. The *British National Bibliography* is primarily a national bibliography, but its classified arrangement makes it useful as a general subject bibliography. The *Subject Catalogue* of the Royal Empire Society Library is a library catalogue, but it provides good subject bibliographies of the countries which made up the British Empire. In both cases, the secondary function, that of subject approach, is limited and must necessarily be subordinate to the primary one; in the former it is limited to British books and pamphlets, in the latter to material available in one particular library and at a particular point in time.

In 1909 Dr. A. W. Pollard published a paper in *The Library* on the arrangement of bibliographies.[3] Since then various other authorities have written on the subject, but although they may have drawn attention to possible variants, the three methods listed by Dr. Pollard still remain the basic ones from which the bibliographer must choose. These methods are: Alphabetical, Chronological and Logical.

[2] Funck-Brentano, F., Introduction aux Bibliographies critiques, Paris. Institut Historique, *afterwards* Société des Études Historiques. *Bibliothèque de Bibliographies Critiques*, Paris: Fontemoing, 1900–4, Part 1, p. 5.

[3] Pollard, A. W., The arrangement of bibliographies, *The Library*, 2nd ser., 10 (1909) pp. 168–87.

**Alphabetical**

Pollard regarded the alphabetical method as referring to a sequence of authors, but as Dr. M. G. Mellon has mentioned in his *Chemical Publications*,[4] printed matter can be arranged alphabetically by title or by country of origin, although neither arrangement is very common. Mr. J. D. Cowley, of the University of London School of Librarianship, in *Bibliographical Description and Cataloguing*[5] dismisses the alphabetical arrangement as appropriate only for indexes as it is primarily a device for finding and identifying a specific item. Dr. A. M. Lewin Robinson in *Systematic Bibliography*[6] includes alphabetical subject arrangement and an alphabetical "entry-word" arrangement which uses the operative words in the titles of works to provide an index according to subject. A difference in terminology should be noted here. When Schneider writes of "entry-word arrangement" (*Behandlung der Schlagwortbegriffe*)[7] he is referring to alphabetical subject arrangement and not to the use of words appearing in the titles of books to describe their contents, which is Dr. Robinson's understanding of the term. This latter method scatters material on the same subject by using synonymous words, while an alphabetical subject arrangement requires cross-references for possible synonyms if it is to cater for the possible use of different words by those consulting it.

Schneider points out that alphabetical arrangement by author and title is useful for establishing the existence of a book; it defines it bibliographically, and indicates what each individual has written. About alphabetical subject arrangement he says that "where ready finding rather than intrinsic relationships is the matter of chief concern, this method for increasing clarity of presentation will be found to be well worth while".[8] He points out that it is not possible to enter every work by this arrangement, particularly in bibliographies of literature, in which the form of the work, rather than its subject-matter, is its distinctive characteristic.

The choosing of suitable headings for an alphabetical subject arrangement requires skill and judgement as it raises its own problems. Foremost

[4] Mellon, M. G., *Chemical Publications; Their Nature and Use*, 4th ed., N.Y.: McGraw-Hill, 1965, p. 116.

[5] Cowley, J. D., *Bibliographical Description and Cataloguing*, London: Grafton, 1949, pp. 178–94.

[6] Robinson, A. M. L., *Systematic Bibliography*, London: Bingley, 1966.

[7] Schneider, G., *Theory and History of Bibliography*, trans. by R. R. Shaw, N.Y.: Scarecrow Press, 1961, p. 234.

[8] *Ibid.*, p. 202.

of these is the use of broad or narrow concepts in the headings. The use of a heading which specifically describes the content of a book leads the user of the bibliography directly to the material he requires, but separates the book containing that material from other works which contain similar material within a broader concept. Careful cross-referencing is therefore essential.

Robinson favours the alphabetical subject arrangement only for short bibliographies, that is, up to 300 items, but instances Besterman's *World Bibliography of Bibliographies* and the *London Bibliography of the Social Sciences* as good examples of it on a large scale.

The various alphabetical arrangements can, of course, be combined to form a dictionary arrangement, or two or more can be used independently in the same bibliography to provide indexes for different approaches. Schneider feels that the alphabetical dictionary arrangement has many advantages in that additional indexes are superfluous, and that the user can find information about a book if he knows only its author, content or title. He concedes, however, that there may be a lack of clarity when a subject-heading or short title is a personal name and is likely to be confused with the author's name, and that the great number of entries used may make the bibliography unwieldy.

### Chronological

A chronological arrangement usually means an arrangement according to the date of publication. Cowley and Robinson call this the annalistic arrangement. A decision has to be made in each case whether to preserve a strict chronological order (the method preferred by Cowley) or to make an exception in the case of different editions of the same title by listing them together under the date of the first or of the latest. Most chronological arrangements proceed from the earliest to the latest date, but the reverse is just as feasible and is common in science bibliographies. A chronological arrangement can, of course, refer to an arrangement of material according to the periods of time with which they deal. Most bibliographies of history and literature group the works on the same period together and arrange the periods, reigns, centuries or decades in order beginning with the earliest.

### Logical

The third arrangement, the logical, is defined by Pollard as the arrange-

ment which follows the natural sequence of a subject, and is described by him as the "most important though also [the] most dangerous".[9]

Cowley maintains that in subject bibliography the arrangement must be according to a logical plan and that such a plan "can only be decided after all the material available has been examined and described. It is then possible to work out the scheme which seems best to fulfil the object of the compiler."[10]

A logical arrangement can involve the use of a general system of classification with specific notations for each class. Such a system may be a library classification or one especially drawn up for the subject. It can also involve an organisation of the subject field into divisions and subdivisions without the use of notations.

Schneider remarks on the comparatively brief life span enjoyed by classification schemes because of changes in the various disciplines, particularly in the sciences. Yet he points out that bibliographies, which can be revised or supplemented, are not affected by these changes as much as the subject classification of a library. How broad or how narrow the classes and subclasses used in a bibliography will be, depends primarily on the number of publications in the field. His reservations about classified arrangement are, however, not shared by the majority of pure and applied scientists, although the latter would probably not all concur with Dr. Bradford in insisting upon the use of the Universal Decimal Classification.[11]

There are at least two aspects of each bibliographic unit which must be taken into consideration when compiling a subject bibliography. These are the subject or topical aspect of the work and the bibliographic aspect, that is to say, its physical or literary form, its mode of issue, or even, in the case of rare books, its actual location. In providing a logical arrangement for a subject bibliography the subject aspect is the most important, but it will usually be found necessary to provide categories to bring out the bibliographic aspects of certain items, particularly if these aspects give the item as such a special relevance to the subject; for example, patents and standards in technical subject fields; or if the bibliographic aspect is inherently related to the subject, as maps and atlases are to geography. According to the type of information contained in these works, form subdivisions, such as dictionaries, bibliographies, textbooks, atlases, direc-

[9] Pollard, A. W., *op. cit.*, p. 179.
[10] Cowley, J. D., *op. cit.*, p. 186.
[11] Bradford, S. C., *Documentation*. 2nd ed., London: Crosby Lockwood, 1953, pp. 62–86.

tories, may be made, or a general heading, such as "Reference works", may be used to group such material together. Typographical symbols may also be used to indicate such items in a general subject division.

Other items having varying bibliographic aspects as regards their origin, such as periodical articles, government publications, theses, restricted reports, may be excluded as such from a bibliography. A good bibliography will, however, refer to other aids and guides which are especially prepared for the exploitation of this material. Most subject bibliographies do, however, list books, pamphlets, periodical articles and parts of books which combine papers by various authors, regardless of their bibliographic form, although some general subject bibliographies may list them separately within a subject division. It is not, however, common to find theses and government publications included mainly because these bibliographic forms are not so easily available to the reader. Special bibliographies may therefore be compiled which limit their entries to one particular form, as for instance, to theses presented in history at the universities of a particular country. Government publications are so numerous that the official printing office in each country issues its own well-arranged catalogue at regular intervals. It may be argued, of course, that the user is only interested in the subject-matter, regardless of the form in which it appears, but this exclusion of the less accessible items is desirable in the more general subject bibliographies, not only to limit the number of entries, but also to keep the more specialised material separate.

Pollard suggests that a subject bibliography or the subject divisions of one covering a broad field should logically begin with: (A) Bibliographies; (B) General works, which can be further divided if necessary into (i) Encyclopaedias; (ii) Periodicals; (iii) Transactions of Societies; (iv) Treatises. A third division, (C) History, will probably be useful in some subjects. This can be further divided into (i) General, with subdivisions of Periods, and (ii) National, with subdivisions of Countries. Other divisions will depend upon the nature of the subject, with the arrangement proceeding from the general to the more specific aspects of the subject. The natural or logical sequence of the subject may be followed throughout several subdivisions or an alphabetical arrangement may be adopted within the main divisions. Pollard recommends wherever possible the combination of alphabetical and logical arrangements when topics of equal value or significance are grouped together, in order to obtain appropriateness as well as speed in reference. He adds:

> Any departure from strict alphabetical sequence in the arrangement of headings and subheadings, unless the reason of it can be instantly seen, and is sufficiently strong to compel assent, imposes a tax on the time of everyone who uses the book. Fortunately, however, the English language is full of synonyms and alternative phrases, and by a judicious choice among these it is possible to use the alphabet as a servant instead of a master.[12]

Although a logical classified arrangement differs basically from an alphabetical subject arrangement in that it starts with broad concepts and proceeds to narrow ones, while the latter starts with the narrow specific heading, Schneider has pointed out that it is possible to incorporate some of the advantages of classification within an alphabetical subject arrangement by providing broad headings with subdivisions. He draws an analogy with the early editions of the *Encyclopedia Britannica*, in which specific topics are treated in long articles devoted to more general subjects, but are easily found by reference to the index. Similarly Fortescue's *Subject Index of the Modern Works added to the Library of the British Museum in the Years 1881–1900* uses both narrow and broad concepts, providing the latter with logical subdivisions. This mixed method is, however, not found very often except in the case of geographical subdivisions. The disadvantages of the alphabetical subject arrangement can be overcome in another way, as has been done in the case of the *London Bibliography of the Social Sciences*, in which a classed summary of the headings used is provided so that the user can find under the broad subject the specific heading or headings which have been used to index the material he is seeking.

The library is often spoken of as the laboratory of the humanistic scholar, because the majority of the primary sources for the study of the humanities; the public and private records of the past, the manuscripts and original editions, are themselves bibliographic units. Bibliographic guides to this type of material should be regarded as special rather than as subject bibliographies even though they are relevant to one particular subject. It may, however, be convenient to include lists of these primary sources in a subject bibliography along with the material about the subject which can be termed the secondary sources, but because of their nature it is necessary to list them separately. For instance, C. Gross in *Sources and Literature of English History from the Earliest Times to about 1485* makes a distinction in each main section of the bibliography between the original sources used in the study of history of that period and the modern writings on it. Another writer may compile a bibliography on the same subject and

[12] Pollard, A. W., *op. cit.*, pp. 181–2.

covering the same period of time, but list only the modern contributions to historical research with perhaps a reference to the guides and bibliographic aids to the source material. It is usual when compiling a bibliography of a literary figure to list the original editions of his works before later and edited ones, and before works of biography and criticism about him. This arrangement is followed in the *British Museum Catalogue of Printed Books* for the entries under authors of any importance, and in the individual personal bibliographies published by Hart-Davis in their *Soho Bibliography* series.

It is unusual for two bibliographers to draw up similar logical arrangements for the same subject. Each will be influenced by his own approach to the subject and by the emphasis he wishes to place on certain aspects. The dissimilarity will be even greater when the two bibliographers are carrying out their work at different times and consequently at different stages in the development of a subject, as any logical arrangement is dependent upon the actual literature of the subject and the different sources available for its study.

Dr. B. S. Wynar, Assistant Professor of Bibliography at Bowling Green State University, Ohio, in *Introduction to Bibliography and Reference Work*,[13] includes another arrangement, the geographical, which can refer either to aspects of a subject in different areas, or to publications originating in different countries. The latter is usually an alphabetical arrangement as we have noted above, but the former, which is common in bibliographies of history and the social sciences, can be considered as part of a logical arrangement in which small geographical areas will be grouped together according to the larger area of which they form part. Another variant of the geographical arrangement is the method which places the entries in an order which may be the most natural or useful when the nationality of the expected users is taken into account. For example, American bibliographies may start with North America or the United States, and British ones with Great Britain and the Commonwealth before listing foreign countries.

The geographical and chronological aspects of a subject as they affect a logical arrangement have been mentioned above. Pollard made provision for both aspects in his suggested arrangement of a section covering the history of a subject. These aspects are particularly important in the

[13] Wynar, B. S., *Introduction to Bibliography and Reference Work*, 3rd ed., Denver: Libraries Unlimited, 1966.

humanities and the social sciences and must be taken into consideration when drawing up a classification system for subjects in these disciplines.

When reporting on the *International Bibliography of Political Science*, The Royal University Library of Oslo commented on the importance of the principles which may govern a choice between a regional and a subject classification for international bibliographies:

> each branch of science demands its own solution, but the results of such a choice must now and then be subject to renewed examination. It is especially difficult to find a completely satisfactory solution for bibliographies within the fields of social and historical sciences. Yet if the regional classification be considered in principle as a last resort, this will possibly help us sooner to get fully suitable bibliographies.

The report criticised the use of geographical subdivisions of the broad subject classes used in the *International Bibliography of Political Science*, considering that, "for comparative international research on political subjects, it would have been better had a more accurate systematical arrangement been substituted for this classification by countries".[14]

The other bibliographies in this series which make up the *International Bibliography of the Social Sciences* demonstrate the different solutions each editor has found when making this choice between a regional and a topical classification. The *International Bibliography of Social and Cultural Anthropology* has regional divisions and its subject index contains many references to places and ethnic groups. In the *International Bibliography of Economics*, a geographical approach is only possible through the subject index, and the *International Bibliography of Sociology* has no geographical subdivisions and very few regional references in the index.

In many cases it is also difficult to decide whether a chronological arrangement into periods of time should take precedence over a subject division. The student of English drama will prefer a bibliography of English literature divided according to literary form to one divided by period, but for the student of Elizabethan literature the preference will be reversed. Bibliographies of history may be divided first by period and then by country or region or vice versa. Another arrangement is possible which uses headings such as economic, social or political history before using a secondary arrangement by period or region. Subject bibliographers of the humanities and social sciences have sought to overcome this problem and to bring out the various facets of their subjects in different ways. Realising

[14] Unesco. *Unesco Bibliographical Publications; Final Report by the Royal University Library, Oslo*, Paris, 1957 (LBA/Conf 19/5), p. 42.

that the lines of division between the different aspects can be drawn in several directions, they have felt that it is not enough to proceed from the general to the more specific. The commonest method has been to divide the bibliography into two or more sections.

A bibliography about a country or region may be arranged in two sections, one by aspects of the life of the region generally and the other by small regional units. A good example of this is P. D. Hancock's *Bibliography of Works relating to Scotland, 1916–1950.* In each section the subsections are arranged in alphabetical order. A bibliography of Philosophy may have two sections, one divided according to the different subdivisions of philosophy and the other according to schools of philosophical thought, in relation to the historical development of the subject, or an alphabetical or chronological list of philosophers. The compilers of *Bibliographia Philosophica, 1934–1945* have adopted such a method. The historical section is arranged in periods, with the philosophers arranged in strict chronological order of their dates of birth. This latter refinement, however, seems too pedantic even for the most scholarly use. The users must know the exact year of birth of a particular philosopher in order to find him easily. This method may also separate philosophers whose work was contemporaneous and who are usually associated together. Similar arrangements are possible for literary subjects. When a logical arrangement is thus divided into two or more sections, careful thought must be given to the provision of supplementary indexes and of cross references from one section to another.

Another method, used in the social sciences, is to have separate country subheadings under the main subject-heading, similar to those in a library subject catalogue. Recently an alternative method has been devised by which items which limit their treatment of the subject to one particular country or region are indicated by prefacing the entry with an alphabetical symbol representing the country. Items not so indicated treat the subject in a general way, while the marked ones are easily identified without being separated from the others. This method is found in the *Index to Economic Journals.*

In a bibliography of geography it is usual to have a general and topical section and a regional section. *Current Geographical Publications* provides an additional approach to this arrangement by giving a classificatory notation to the entries based on the classification used by the American Geographical Society in its *Research Library Catalogue.* When the regional sec-

tion is consulted, the user can tell by a glance at the notation in the right-hand margin, what is the topical aspect of the entry. As the notation is a decimal numerical one the entries within the divisions in the regional section are arranged numerically. The annual subject index is arranged according to the classification and refers to the numbered entries in both sections.

The feasibility of using a faceted classification has also been explored for social science bibliographies. The simplest example of this is the arrangement of the *Human Relations Area Files*, in which the items are allotted notations according to two systems, one based on a classification of world cultures and the other on a classification of cultural materials. In the file arrangement the notation of the former takes precedence.

Beginning in 1965 *Historical Abstracts* began what its compiler Dr. E. Boehm called a "cue" system of indexing, which aims at reducing search time by the use of an abbreviated description of each article; developing a knowledge classification system primarily for the humanities and social sciences with alphabetical codes endowed with mnemonic potentials, and using the computer to create a subject index from "cue lines". The "cues" form an alphabetical code in a hierarchical arrangement with four possible levels. Each abstract is described by a "cue line" which gives the chronological, topical and geographical aspects of the article in a kind of shorthand. The chronological aspect is expressed by dates, while mnemonic abbreviations are used for the topical and regional aspects. The arrangement of the abstracts is in three sections; General, which includes bibliography and methodology; Topics (for example, international relations, political history); Area and Country. The "cue line" description gives the abstract reference number, the "cue" or subject descriptor, the geographical descriptor and the dates of the period covered by the article, in that order; for example 12. 2941 MIL: Comm USSR 1930's-41 indicates that abstract no. 2941 in volume 12 of *Historical Abstracts* is about military communications in the U.S.S.R. between 1930 and 1941. The subject index is geographical in structure so that it is necessary to consult it under the geographical "cue" and then under the subject "cue". Articles which have no geographical aspect are entered directly under the subject "cue". There are also cross references from subject headings. Each entry in the subject index gives the full "cue line" ending with the abstract reference. This enables the subject index to be compiled by computer directly from the "cue lines". Because it is com-

puter-compiled, the actual index is unrelieved by variations in typeface and consequently is not attractive to the eye. Practice is required if the reader is to use the index with ease or if he is to appreciate to the full the detailed aspects expressed in this shorthand classification.

Dr. A. de Grazia, editor of the *American Behavioral Scientist*, has worked out a new method of arrangement for the *Universal Reference System* series of bibliographies, the first of which, on International Affairs, was published in 1965.[15] It attempts to give a multi-faceted approach particularly suitable for the literature of the social sciences. Each document cited is provided with three or four "critical descriptors" or subject-headings in truncated form, which indicate the major facets of the work based on a classification of topics treated and methodology used. Other facets or aspects of the documents are indicated by minor descriptors, so that each document may have between ten and twenty descriptors. In compiling the *ABS Guide to Recent Publications in the Social and Behavioral Sciences* published in the same year, Dr. de Grazia has used the same topical and methodological classification to provide two subject indexes to the alphabetical author list of books and periodical articles; one according to topics treated and one according to methods used. One topic may have as many as 100 references to items in the author list, so that the user must look up each reference or be prepared to match up reference numbers under the specific aspects which interest him in order to find the material he wants. The *International Affairs Bibliography* does give under each descriptor, the other descriptors assigned to the item so that the user can judge the relevance of the reference from the subject index before referring to the list of entries. This list is, however, in the random order in which the entries were fed into the computer memory, so that an author approach is impossible.

The provision of "descriptors" for these bibliographies and of "cues" for *Historical Abstracts* demonstrates the influence of the use of the computer in the field of information retrieval. They represent the adoption of processes originally designed for a computerised information-retrieval system for a traditional printed bibliography which is intended to be consulted through the human eye and brain. Reviewers of these bibliographies have stressed the need for perseverance on the part of the human user when consulting them. It is not enough to print out the computer memory and

[15] See de Grazia, A., The Universal Reference System, *American Behavioral Scientist*, 8 (8), Apr. 1965, pp. 3–14.

to provide an index based on the method of coding used to retrieve the material by the computer.

Having provided a logical arrangement under divisions of a subject, the bibliographer must then consider the arrangement of the individual entries within these groups. If notations from a library classification scheme are used, this problem may not arise as the number of entries in each narrow class will probably not exceed two or three. On this matter of secondary arrangement there is considerable divergence of opinion. The majority of subject bibliographies produced in the United States show a preference for alphabetical arrangement by author, even though the subject divisions may be broad and contain two or three pages of references. This is particularly irritating to the user when the period covered by the bibliography extends over a decade or more. Schneider recommends a chronological arrangement, saying: "alphabetical arrangement by authors and short titles is, in general, to be avoided as purely chance".[16] Pollard also favours this method especially if the bibliography is provided with an author index. In the case of their being more than one entry for any one year, alphabetical arrangement is the usual practice. Both arrangements, alphabetical and chronological, are quickly recognised by the user, but other methods of arrangement which take into account the form, language or place of publication of the work, or which attempt to place the entries according to their importance, are not so easily grasped or understood by the user. Even if such methods are explained in the introduction, they rarely assist the user in picking out quickly the references which will be of use to him. Paetow's *Guide to the Study of Medieval History* lists first what are considered the most important books, and the *Bibliography of Historical Writings issued in the United Kingdom, 1946–56*, lists source material, bibliographies and general books in each section before books dealing with specific topics. A similar final arrangement is used in *Bibliographia Philosophica, 1934–1945*, but the order is more evident at first glance, in that the entries are so spaced as to make the divisions obvious.

Supplementary indexes and cross references have already been mentioned incidentally as necessary adjuncts for the further elaboration and clarification of bibliographic arrangements. Their provision facilitates the use and enhances the value of the whole bibliography. When particular items can be placed in more than one section or subdivision of a logically arranged bibliography, a decision has to be made either to enter them

[16] Schneider, G., *op. cit.*, p. 204.

twice or even three times, or to provide cross references. For the convenience of the user, duplication of the entry is to be preferred unless it is likely to make the work unwieldy. While duplication in unannotated bibliographies is often practicable, it is not feasible if the entries have lengthy annotations or abstracts, and in this case cross references should be made. Those that refer to a specific item or entry will give greater speed in consultation than those which refer to a page or to a section or subheading. All entries should therefore be numbered, and the use of the bibliography is further facilitated if the inclusive numbers of the references listed on a page are given in the page headings. For bibliographical indexes using alphabetical subject arrangement, cross references from one heading to another as well as "see" references under synonymous terms will be the most practical method to employ.

Robinson declares that "indexes are essential to practically all bibliographies of more than, say, fifty entries, the only exceptions being those few in dictionary or simple alphabetical author form".[17] Although the author approach is not the primary consideration in compiling a subject bibliography, the provision of an author index for logically arranged works is very useful for the reader who wishes to find out what a particular author has written on a certain subject. Author indexes usually include editors and translators, but in bibliographies for the humanities, "personal name indexes" may be provided which will include persons who are the subject of the entries, as well as authors and editors, and typographical devices may be used to distinguish the two classes of names.

For bibliographies arranged alphabetically by author, a subject index is essential for a subject approach, and although a logically arranged bibliography follows the natural sequence or structure of a subject, a subject index can be used to bring out other aspects and facets of the contents of the entries. Indexes which refer to specific numbered entries are speedier to use than those which refer to pages. In the case of bibliographies, particularly those issued serially, which use a classified notation, it is easier and more practicable to prepare a subject index to the classification than one which refers to the actual entries.

As they greatly facilitate the use of current bibliographies as retrospective bibliographical aids, annual and cumulative indexes are essential if these tools are to be of more than ephemeral value.

Mention has been made of the present trend in social science biblio-

[17] Robinson, A. M. L., *op. cit.*, p. 62.

graphies to rely on the subject or classified index to provide the only subject approach to the bibliographic information, which may be arranged randomly or by author. This may provide a multi-faceted approach but it inevitably introduces another step in the search process, which some users would regard as another barrier between them and the information.

Pollard enumerated three general principles which govern the choice of arrangement. They require that whatever arrangement is adopted it should be "easily intelligible to those for whose use [it] is intended . . . it should be always and constantly visible . . . and must rest on facts definitely ascertained and not liable to be upset".[18] These principles remain just as valid for the making of bibliographies today as they did in 1909, and will continue so despite progress in the mechanisation of the actual processes of compilation. They can be seen in the remarks of later writers on bibliography. Miss C. M. Winchell of the Columbia University Libraries,[19] in listing the cardinal points for assessing the value of a periodical index, drew attention to the need for adequate cross-references, for a list of periodicals indexed and of the abbreviations used, for a clear and legible typeface, and for typographical differentiation to indicate headings. Wynar remarked that any arrangement must be backed by good supplementary indexing and cross references and that the size and variation of type, page make-up and general appearance of format must be taken into consideration in evaluating bibliographies. Robinson listed as essential features of any bibliography; the numbering of items, the provision of author and subject indexes, a preface explaining its scope, limitations and predecessors, a list of contents which may in actual fact be the schedule or outline of the arrangement, a list of periodicals and works analysed, elucidation of abbreviations and an explanation in detail of a typical entry. In its report on Unesco's bibliographic publications, the Royal University Library in Oslo[20] proposed that each bibliography should contain a clear and exhaustive introduction stating precisely the field it covers and the special public for which it is intended; it should also contain a list of periodicals analysed and make reference to complementary bibliographies. Meyriat recommends in his report on the general prin-

[18] Pollard, A. W., *op. cit.*, p. 172–3.

[19] Winchell, C. M., *Guide to Reference Books*, 8th ed., Chicago: American Library Association, 1967, p. 144.

[20] Unesco. *Unesco Bibliographical Publications; Final Report by the Royal University Library, Oslo*, Paris, 1957 (LBA/Conf 19/5).

ciples governing international bibliographic work[21] that the style used for entering the references should aim at maximum brevity and conciseness but should not become too cryptic. He also remarks that offset printing may lead to substantial savings in printing costs especially when the bibliography has not got a wide distribution but a carefully planned format with the use of a greater variety of type-faces and an uncramped layout may make a bibliography more attractive and serviceable, enhancing its usefulness and consequently its sales value. The demands in bibliographic arrangement are still for clarity, intelligibility and a logical and permanent order.

[21] Meyriat, J., *Report on the General Principles Governing International Bibliographical Work*, Paris: Unesco, 1957 (UNESCO/CUA/82).

# 7. THE ARRANGEMENT OF SOME SELECTED BIBLIOGRAPHIES

IT CAN be seen from the previous chapter that there is a considerable amount of material available on the arrangement of bibliographies, but the analysis of the arrangement and format of specific bibliographies in relation to the use that can be made of them has only occasionally been considered. There have been, it is true, an analysis of citation indexes and surveys of specific abstracting and indexing journals regarding their coverage and the time delays in citing current materials. Groups of bibliographical tools dealing with the same field have been compared and analysed for duplication and overlapping. A. J. Walford[1] and C. M. Winchell[2] in their guides to reference books have noted the various strengths and limitations of the current and retrospective bibliographies they have listed. Surveys of subject bibliography in any particular discipline have concentrated on current services. This has been due to the scientist's and the technologist's demand for up-to-date material and for relevant guides to its exploitation, and it was their bibliographical tools which were first examined. At the London School of Economics, an investigation has just started into the characteristics of current literature and information tools in the social sciences,[3] but little is known about the use made of retrospective subject bibliographies.

Mr. J. Martyn of the Aslib Research Department carried out an examination of citation indexes in 1965.[4] He came to the conclusion that a citation index cannot be a substitute for the more formal bibliographical tools, but that it is an additional tool in its own right. It should be used as a complementary tool along with other indexing and abstracting services as it is likely to reveal only a proportion of the same material which the

[1] Walford, A. J. (Ed.), *Guide to Reference Material*, London: Library Association, 1959.

[2] Winchell, C. M., *Guide to Reference Books*, 8th ed., Chicago: American Library Association, 1967.

[3] See *OSTI Newsletter*, Dec. 1966, p. 8.

[4] Martyn, J., An examination of citation indexes, *Aslib Proceedings*, 17 (1965) pp. 184–96.

latter will, but at the same time it may indicate other sources. It has undoubted attractions for the research worker in that it allows him to move forwards or backwards in time in providing references to the antecedents as well as to the successors of a particular piece of published work. Additional information can be obtained by "bibliographic coupling", whereby the relationship between two documents is established by their joint descent from a third which each has cited. The citation index also allows the research worker to attack the literature directly without recourse to library devices, as entry to it is by the author and title of a published paper known to be relevant to his specific problem. Mr. Martyn notes two drawbacks to citation indexes: one, as the index is compiled automatically without checking the individual references, errors or variants in citation made by the authors of the citing papers are perpetuated; two, he also found in analysing Science Citation Index that the probability of a particular paper being cited in a given year is low and consequently more than one citation may have to be used to gain entry to the index. Nevertheless, once entry has been gained the return increases rapidly to the extent of providing irrelevant material which must be "filtered" by the user as he proceeds. It is essentially a tool for the research worker rather than for the librarian.

The Royal University Library, Oslo, in making its report in 1957 on *Unesco Bibliographical Publications*,[5] paid particular attention to the arrangement as well as to the coverage and selection of material in these bibliographies. Retrospective as well as current tools were considered. This report, which will be referred to as the Oslo report, was found valuable in assessing some of the bibliographies cited in the present chapter, which examines the various forms of arrangement as they are used in specific subject bibliographies and attempts to evaluate their usability.

For the purpose of this examination it is convenient to consider each of the subject bibliographies as falling into one of the four possible forms described in the University of Chicago *Survey of the Bibliographical Services in the Social Sciences*. These are:

A. *Unannotated bibliography or index*: a simple listing of all relevant items. . . .
B. *Annotated bibliography or index*: a combination of a listing and an information service. The annotations can appear for all the items included or for only part of them. . . .

[5] Unesco. *Unesco Bibliographical Publications; a Final Report by the Royal University Library, Oslo*, Paris, 1957 (LBA/Conf 19/5).

C. *Abstracts*: a collection of summaries of all or some items in a given field. . . . The abstracts can be rigorously limited to informational material . . . or they can also include some evaluation of the item.
D. *Bibliographic review*: a systematic and critical bibliographical survey of the literature on a particular subject or problem or proposition, written in textual form and including some evaluation of the significance of the items in the literature.[6]

These designations can cover bibliographic aids in whatever physical form they appear; as part of existing journals; as separate series appearing weekly, monthly, quarterly, annually or irregularly; on cards to be selected and organised by the individual users; as books, which may or may not be revised or supplemented from time to time. Current bibliographies, by which is meant those serial bibliographies which appear at regular intervals, monthly, quarterly and even annually and biennially, are considered not only as regards their function of keeping their readers informed of current work, but also as retrospective bibliographies when sets of earlier volumes are kept. It is also realised that the time-lag between the publication of a book or paper and the appearance of a reference to it in a bibliographical tool may be considerable, particularly in the humanities. An extreme example is the *Romanische Bibliographie* which appears biennially as a supplement to *Zeitschrift für Romanischen Philologie*, and of which the 1961/2 volumes did not appear until 1968. It is here considered as a current bibliography although its value is confined to its role as a retrospective bibliography.

The choice of bibliographies has been governed not by their coverage of, or importance in, a particular subject field, but by their format and method of arrangement, so that all types of existing forms and arrangements can be considered. Those analysed are, however, representative of bibliographical tools available in the social sciences and in the historical and literary disciplines. It was inevitable that some well-known bibliographic aids would be excluded, while other relatively unknown and less important ones were included.

The three types of arrangements set out by Pollard; alphabetical, chronological and logical, with the variants noted by later writers on systematic bibliography, have been found adequate to describe the arrangements used. It will be seen that some forms of bibliographical tools and some particular disciplines favour one arrangement rather than

[6] Chicago University. Graduate Library School & Division of Social Sciences. Bibliographical services in the social sciences, *Library Quarterly*, 20 (1950) pp. 86–7.

another, and that in certain situations and for certain purposes, one type of arrangement will have advantages over the others. The provision of auxiliary indexes and cross references must also be taken into consideration as they may facilitate use and make the tool more efficient. As it is subject bibliographies which are being analysed, it is the case with which their contents can be consulted from a subject approach which is considered of paramount importance. Format and typography are only considered in so far as they may facilitate consultation.

**Unannotated Bibliographies and Indexes (Current)**

These are enumerative and are essentially finding lists. They are designed to be used by anyone interested in the subject, whether he has any previous knowledge of its literature or is already an expert in the field. Their arrangement should be immediately obvious so that the bibliography or index can be easily and quickly consulted. An alphabetical arrangement, either an alphabetical subject or dictionary arrangement, best fills this condition. In this respect the indexes published by H. W. Wilson & Co. in the United States of America have the most straightforward and easily understood arrangement. They have one alphabetical sequence under author and subject. This arrangement is found in the *Essay and General Literature Index*, which indexes articles and essays published in composite book form, as well as in the *Reader's Guide to Periodical Literature*, and the *Social Sciences and Humanities Index*, which continues the work of the former *International Index*, both of which index only journal articles. The final arrangement is alphabetical by title. References are given under subject-headings to other relevant headings. It is therefore easy to use these bibliographical aids either from an author or a subject approach, and no supplementary indexes are required. The *Education Index*, also published by H. W. Wilson & Co., and the *Public Affairs Information Service Bulletin* are similarly arranged but by subject only, and an approach by author is not possible. The latter includes government publications, books and articles in books as well as journal articles, and the *Education Index* has articles from both books and journals. In the final arrangement the *Public Affairs Information Service Bulletin* differentiates between books and journal articles by listing the former by author and the latter by title. As all these bibliographical "tools" cumulate at regular intervals, they are valuable as retrospective bibliographies.

*I B Z* (*Internationale Bibliographie der Zeitschriftenliteratur*) also has an

alphabetical subject arrangement. Published in Germany, it is intended for an international market and there are references from English and French subject-headings to their German equivalents. Speed in consultation is hindered by the numerical coding used to indicate journal titles. This saves space but makes it necessary to refer to the list of journals indexed in order to obtain the full bibliographical details. An alphabetical author index is provided which refers not to pages but to subject-headings. If the author has written several articles this helps to indicate the appropriate reference but as the final arrangement is not alphabetically by author it is not easy to pick out the reference under a broad heading.

The two British periodical indexes, *British Humanities Index* and *British Education Index*, are double indexes with one sequence arranged alphabetically under subject and the other under author, so that a subject and an author approach is possible.

There appears to be little point in the alphabetical author arrangement of the *Bibliographie Internationale de l'Humanisme et de la Renaissance*. The labour of producing a subject index of names of persons, places and topics could have gone into an alphabetical subject arrangement to better effect. The division between books and journal articles may be a help for library book selection but for little else. It is an annoyance to the user who wishes to consult the bibliography for the work of a particular author.

The various volumes of the *International Bibliography of the Social Sciences*, which cover *Sociology*, *Political Science*, *Economics* and *Social and Cultural Anthropology*, each use a special literal and decimal numerical notation for their classified arrangements, each designed especially for the subject field, and each has an author and two alphabetical subject indexes (one in English and one in French). The classification for Political Science makes provision for national divisions, and that for Social and Cultural Anthropology for regional divisions while the subject index contains many references to places and ethnic groups. In the Economics volume a geographical approach is only possible through the subject index and in the Sociology volume there are no geographical subdivisions and very few regional references to places and ethnic groups. These varying approaches to the problem of making provision for topical and regional aspects of a subject field have already been mentioned (see p. 85). When the disciplines themselves change in emphasis, it will be necessary to reconsider the classification, which at the present time seems appropriate. The classification scheme is used in each case as a list of contents to each annual

volume, and is well set out, with references to the numbers of the entries, so that the list gives an indication of the size of each section.

Enumerative bibliographies and indexes in the literary subject fields tend to be arranged in broad subject divisions, which are particularly suitable for browsing. *Bibliographie der Französischen Literaturwissenschaft* (ed. by O. Klapp) which is published every two years is arranged logically under General Studies and under Periods. References under literary figures follow the usual form divisions. The entries are not tabulated and many abbreviations are used so that the maximisation of page space is pushed to the limit. At first glance the bibliographic descriptions are likely to appear too cryptic, and the cramped layout detracts from the general appearance. There are good author and subject indexes, but as they refer to page numbers it is difficult to find the relevant item quickly.

The other literary bibliographies are not so well indexed. Some provide only an author or a personal name index, while others such as the Bibliography of the *Yearbook of Comparative and General Literature* which is designed to serve as a supplement to Baldensperger and Friedrich, *Bibliography of Comparative Literature*, has neither an author nor a subject index.

The *Bibliographie de la Littérature Française Moderne*, which has a logical arrangement by period and individual writer, has an alphabetical subject index, and distinguishes between the books and the journal articles by marking the former with an asterisk. This method of differentiation is preferable to keeping the entries separate.

Another German bibliography, *Romanische Bibliographie*, is issued as a biennial supplement to *Zeitschrift für Romanischen Philologie*. The arrangement is well set out in the table of contents and proceeds from general topics to particular literary works, through the divisions and subdivisions of language, period, literary form and individual writer. The alphabetical index refers to author and literary figures only.

The *MLA International Bibliography*, which appears in the May issue of *PMLA*, is arranged logically in broad subject classes, the first division being into the various languages covered. The arrangement is set out in a table of contents, and there is an alphabetical author index which excludes anonymous works.

The *Répertoire Bibliographique de la Philosophie* is issued quarterly, but the fourth issue of each year consists of the author and philosopher index and the anonymous title index, together with the *Répertoire des Comptes Rendus*. The logical arrangement places the entries either in a strictly chrono-

logical historical section, or in a topical section, which provides cross references to the former. This arrangement is set out at the beginning of each issue, but the final arrangement of the topical sections is not explained. It appears that more general items are listed before narrow specialised ones.

Historical and geographical indexes can be expected to provide for a regional or area approach to their contents. The annual publication, *United Kingdom Publications and Theses on Africa*, has three sections with one alphabetical author index. One section lists books and journal articles either in an alphabetical subject section or in an alphabetical regional section. The second part contains references to Hansard, and the third, theses, both arranged according to country or area. *Current Geographical Publications* is divided into three sections: (1) Material on general topics in a logical order; (2) Material on specific regions, and (3) Maps. The annual index is based on the numerical classification used in the Research Library of the American Geographical Society, which allows an approach from either the topical or regional aspect. There is also an annual alphabetical author index.

The current unannotated bibliographies and indexes which use a logical arrangement are intended for readers who are familiar with the subject field, although some are so arranged and so provided with helpful indexes as to be suitable for more general use. *Répertoire bibliographique de la Philosophie*, however, with its slightly pedantic approach is likely to be used only by philosophy scholars.

**Unannotated Bibliographies and Indexes (Retrospective)**

None has the simplicity of arrangement which can be found in some of the current indexes, except perhaps the *London Bibliography of the Social Sciences*, which is arranged alphabetically by subject. Narrow concepts are used for the subject-headings and in some cases there are geographical subdivisions. A table is provided which groups under broad subject headings the actual terms used in the bibliography, so that the user can more easily find the headings under which the material of interest to him is listed. The secondary arrangement in the earlier volumes was alphabetically by author in the case of books and pamphlets, and chronologically in the case of government publications, but the post-war volumes have used the chronological arrangement throughout. An author index is available only for the first six volumes, which cover publications up to 1936.

Because of its alphabetical arrangement by author, Kuehl, *Dissertations in History*, is more successful as a checklist of dissertations presented at North American universities than as a subject bibliography of them. The author's name is the least important element in the bibliographical description when the consulter of the bibliography wishes to find what dissertations have been written on a certain topic, and the subject index will be the most useful feature of this bibliography when a subject approach is wanted.

*Bibliografia Filosofica Italiana* combines authors and persons written about in one alphabetical list, the items under authors being arranged chronologically, or, in the case of a variety of publications, by the form, such as Collected works, letters, etc., while works about specific philosophers are arranged alphabetically by author. Although this bibliography is devoted to the whole field of philosophy and includes peripheral subjects such as psychology and education, it is restricted to Italian publications. A subject approach is not possible for specific subjects or topics, but only for works about individuals. Similarly, Juchhoff, *Sammelkatalog der Biographischen und Literarkritischen Werke zu Englischen Schriftstellen des 19 und 20 Jahrhunderts*, has no topical subject approach. It is arranged alphabetically by literary figure and being a checklist of holdings in German libraries includes location symbols. Under each writer items are arranged by form—own writings, bibliographies, biographical and critical studies. Within these groups, the final arrangement is by date of publication.

Other enumerative bibliographies are arranged in a variety of logical systems. In the case of some literary bibliographies the logical arrangement is combined with an alphabetical arrangement. For example, Thieme's *Bibliographie de la Littérature Française, 1800–1930*, is divided into two parts; Part One, French writers in alphabetical order, and Part Two, a bibliography of books on various aspects of French civilisation, arranged logically. In Part One, biographical and critical studies follow each writer's original works. In both parts, references to books and to journal articles are separated under each heading, and the final arrangement is chronological. Cioranesco's *Bibliographie de la Littérature Française du Seizième Siècle* also has two parts; one for general references and one an alphabetical arrangement of writers. There is a similar chronological arrangement. But Cioranesco provides an index to authors of critical studies, subjects and places, and minor writers not included in the second part.

The *Index of Economic Journals* is a double index, full entries being given

in its author index and in its subject index. The latter is arranged logically according to a special numerical notation, and geographical symbols are used to distinguish localised treatments of topics. In the author index, full entries are also given under the second of joint authors, and the final arrangement is chronological, but in the classified section the entries are listed alphabetically by author with anonymous works grouped together under "anon.". The classification system is well set out and there is a subject index to it. Direct access is therefore provided whether the user consults the bibliography from an author or subject approach. For the user familiar with the subject field of economics this should be an efficient tool for reference or for "browsing".

Those bibliographies which employ a logical arrangement are not usually intended to be finding lists, but selective guides to the work done in a particular subject field, and their compilers assume that their users will be familiar with their topic. In all instances, the logical arrangements are related to the subject matter and the literature available, but often they are not well set out or adequately explained. In particular the final arrangement of the entries is not always obvious, so that the user feels he is being presented with an unordered mass of items. This is probably of little importance if the user is browsing through the entries, but it can be irritating if he is seeking specific information.

A combination of a logical and an alphabetical arrangement is found in Hancock, *Bibliography of Works relating to Scotland, 1916–1950.* One section, which is devoted to works of general description and the history of different areas, is arranged alphabetically by regions, and the other section, which covers books on general topics relating to Scotland, is arranged alphabetically by topic. There is an index to individual places in the first part and a subject index to the second. This arrangement is useful as far as it goes, but its efficiency would be increased if there were cross references between the two parts or if the whole work had a combined subject index. For instance, a book on the birds of Lanarkshire is listed in the topical section under Natural History, but there is no reference from the regional section.

The literary bibliographies are usually divided into two parts; one general or introductory section and one historical section divided into periods. In Lanson, *Manuel Bibliographique de la Littérature Française Moderne, XVIe, XVIIe, XVIIIe et XIXe Siècles,* the literary figures are arranged in alphabetical order at the end of each literary period. The

arrangement is set out in the "Table des Matières" and there is an alphabetical index which refers to literary figures. Material on various topics and literary genres is therefore not easily found except by the user who is familiar with the subject field. Giraud, *Manuel de Bibliographie Littéraire XVI–XVIII Siècles*, which serves as a supplement to Lanson, is similarly arranged, but the general section has a different logical arrangement, and the index refers to page numbers and not to numbered entries.

The compiling of a bibliography of comparative literature presents several problems in arrangement if all the inter-relationships between literary communities are to be presented in a logical manner. Baldensperger and Friedrich have divided their *Bibliography of Comparative Literature* into four sections: (1) General; (2) The Orient, Antiquity; (3) Aspects of Western Culture; (4) The Modern World. Further division of the last section is by language. Entries are then arranged alphabetically by literary figure or motif. This is done not by providing headings for each sub group but by using heavy type for the operative word in the title of each work. This obviously saves space, but at the expense of clarity. The final arrangement is alphabetical by author but in the general section material published before 1900 is listed chronologically. The main headings are too vague, the subheadings are not sufficiently differentiated, and the material appears to have been distributed without consistency. This was forcibly pointed out with several examples by the Oslo report. The reader has little more than the table of contents to guide him, as the principles governing the arrangement and selection of entries are not clearly set out. The emphasis of the arrangement, however, appears to be on the emitter of literary influence, not on the receiver, so that the bibliography can only be of use to the reader looking for material on the influence of a country or of an author. To have an additional arrangement based on the recipients of influence would, of course, have made the bibliography unwieldy, but this aspect of comparative literature could have been covered by a subject index. As it is, there are no indexes at all, and this is the main shortcoming of the bibliography, but as one of the reviewers pointed out, no subject index can "compensate for a clear and consistent topical arrangement of the material itself".[7] The annual bibliography published in the *Yearbook of Comparative and General Literature*, which is designed to supplement this bibliography, suffers from the same shortcomings.

The *Bibliographie Internationale des Travaux Historiques publiés dans les*

[7] Skard, S. [book review], *Journal of English and Germanic Philology*, 52 (1953) p. 233.

*Volumes de "Mélanges", 1880–1939*, compiled by Rothbart and Helfenstein, although covering the subject field of history is more a specialised bibliography in that it is an analytical index of "Mélanges" and "Festschriften". Its arrangement is governed more by this latter fact than by a desire to help the user in search of material on a particular topic. The first part lists the "Mélanges" alphabetically by the country of origin and then in two chronological groups: one of those which treat of different subjects and are published in honour of a person or institution; and one of those which treat of one subject. There is an alphabetical "Index des personnes, évènements historiques, institutions et sociétés scientifiques auxquels les volumes de 'Mélanges' étaient dédiés", referring to the entries in this part and a subject index to its second group. Part 2 is a logical arrangement by subject of the individual papers contributed to the "Mélanges" and reference is made to the complete volume listed in Part 1. Part 2 is also divided into two groups similar to those of Part 1, so that the two different types of "Mélanges" are kept separate throughout. Part 2 has an alphabetical index to the authors of the individual papers. This complicated arrangement classifies the material in a variety of ways, but it must be fully understood if one is to make good use of the information contained in it.

*The Bibliography of Historical Works issued in the United Kingdom*, three volumes of which have been issued at four- and five-year intervals to mark the Anglo-American Conferences of Historians in 1957, 1961, 1966, is international in its subject coverage but is confined to books and government publications issued in the United Kingdom. The country divisions are arranged logically for British readers and it is understandable that as the majority of items are on British History a further period division is provided for this section. Each volume was intended as a survey of British historical scholarship to be available at these conferences and to be accompanied by an exhibition of British books. It is therefore a special bibliography rather than a useful subject guide to history. Within each section, entries are arranged beginning with books which treat the topic generally and passing on to ones dealing with more particular aspects of it.

**Annotated (Current)**

Annual annotated bibliographies are common in most of the humanistic disciplines. Various groups of the Modern Language Association issue annual bibliographies on various aspects and periods of literature, and on

individual authors and particular genres. These appear in various specialised journals and have no connection with the *MLA International Bibliography*, an enumerative bibliography, which appears annually in *PMLA*. In some cases the journal which prints these bibliographies changes every few years; for example, that of *The Romantic Movement* has appeared successively in *English Literary History*, *Philological Quarterly* and *English Language Notes*. The method of selection used in compiling these bibliographies would seem to be haphazard, and there is little co-operation with other bibliographies. The compilers of the English literature section of the bibliography just mentioned draw their users' attention to other compilations:

> For the most extensive international coverage of Keats, Shelley, Byron, Hunt and their circles, see the "Current Bibliography" in the annual volumes of KSJ [*Keats–Shelley Journal*]. For items of specifically bibliographical interest, see the "Selective Checklist of Bibliographical Scholarship" in the annual SB [*Studies in Bibliography*]. For the most extensive general listing see the "Annual Bibliography" in PMLA. . . . For a wide coverage of journals, with precis of articles, consult the indexed monthly issues of *Abstracts of English Studies*. See also the "Anglo-German Literary Bibliography" in JEGP [*Journal of English and Germanic Philology*] and relevant sections of the following annuals: "Annual Bibliography of English Language and Literature"; "Year's Work in English Studies"; "Year's Work in Modern Language Studies". See also R.H. Super, "Recent Studies in Nineteenth Century Literature"; SEL [*Studies in English Literature*] IV (1964) 663–85. See also "Annual Bibliography" in "Yearbook of Comparative and General Literature".[8]

One may well ask if this bibliography, or at least the English section of it, serves any useful purpose. Apart from the inevitable duplication of entries, the changing method of publication limits its effective use, and it has little value as a retrospective bibliographical tool as no indexes are provided and only a broad classification is used, the final arrangement of the entries being alphabetically by author. This bibliography and similar ones produced by other groups of the Modern Language Association may be useful at the time of publication as providing a survey of publications in the field for readers of the journals in which they appear.

*English Literature, 1660–1800*, which appears annually in *Philological Quarterly*, has, however, been made more useful and more widely available by being reprinted in four volumes covering the years 1925–59 under the editorship of Professor R. S. Crane. It has an author and subject index for the first two and the last two volumes, using various typographical devices to distinguish authors, subjects and reviews.

[8] The Romantic Movement; a selected and critical bibliography for 1964, *English Language Notes*, 3 (1965) Supplement, p. 11.

Mention has already been made of the investigation by Professor Sawin of ways of combining the information in these various lists into an integrated comprehensive retrospective bibliography (see pp. 39–40). There is obviously a lot of duplication of work being done by the various groups and the bibliographical section of the Modern Language Association, and it would appear desirable to look at the whole problem afresh instead of adapting and integrating the old methods.

The most successful bibliographies issued by groups of the Modern Language Association are *French VI Bibliography* and *French VII Bibliography*, which are published separately and not within the pages of another journal. They are logically arranged and books and journal and newspaper articles are listed separately. All items are numbered continuously, and references are made to earlier issues. Indexes are not issued except for ten-year periods. In 1959 there was discussion about discontinuing *French VII Bibliography* as it duplicated some of the work of the *MLA Annual Bibliography*, but the editor was persuaded that "French VII Bibliography with its different and more usable format, its extensive coverage frequently not duplicating that of PMLA and its particular completeness in book references, is rendering a definite service".[9] This publication is therefore still being issued, and it receives co-operation from the Modern Language Association which sends bibliographical information to the compilers which can be included.

This demonstrates the doubtful value of issuing bibliographies as integral parts of journals. If these bibliographies are to be of more than passing interest, and to justify the time spent in their compilation, it must be possible for them to be bound eventually as separate units and for them to be provided with indexes. The use of very broad subject headings in most of them makes them only suitable for browsing and not for providing information along specific subject lines.

In contrast the *Annual Bibliography of English Language and Literature*, with its well-set-out logical arrangement and author and subject indexes with references to both the language and the literature sections is simple and easy to consult. Entries in the language section are arranged by subject and topic, and those in the literature section by period, each period being divided into general studies and topics, and writers who appear in alphabetical order. The final arrangement in each case is alphabetical by author.

The annual *International Bibliography of Historical Sciences* is arranged first

[9] *French VII Bibliography*, 3 (1) (1959) p. vi.

by period, and then by country. At the beginning of each division or subdivision, bibliographies marked with an asterisk are listed and then textbooks, marked with two asterisks before the main list of entries arranged alphabetically by author. General, national and international bibliographies, current as well as retrospective, are listed alphabetically by the French version of the country before the systematic list. Apart from the logical arrangement there is no topical approach except by historical figures, who are included in the name index, and by country through the alphabetical geographical index. The Oslo report also remarked on this deficiency which is even more serious when several volumes are being consulted, and suggested that the earlier volumes should be provided with a twenty-five year or even ten-year subject indexes, "if this could be managed, the *International Bibliography of Historical Sciences* would become a handy tool, of first class importance to historical research".[10] The Oslo report also thought that it was not advisable to arrange the bulk of the entries in alphabetical order of author particularly in sections which cover a long period of time. It suggested arranging them in chronological order according to the sequence of events. In this way entries which are naturally connected would not be separated. Such an order is not immediately obvious, but it is more logical and need not be confusing if the sequence is made clear by spacing or other typographical devices. The same criticism of the alphabetical author arrangement can also be made of the broad sections devoted to such subjects as agricultural history, in which the arbitrary author order brings together works on such unconnected topics as wine-growing in France, cattle raising in Florida, and the introduction of sheep into Australia. In this instance, it would seem preferable to group similar agricultural industries together and to indicate by mnemonic symbols the regional aspects of the works. This bibliography was criticised by the French working party of the Unesco/Library of Congress *Bibliographical Survey* in 1950:

> This bibliography does not meet the needs of scientific work; the time lapse between successive issues is too long (before the war, three years). It is too general. All the national historical bibliographies are required in addition to it. Thus, the problem of information in history is not solved by a selective international bibliography.[11]

It has, however, continued to be published with the aim of preserving its

[10] Unesco, *op. cit.*, p. 74.

[11] Unesco. Library of Congress, *Bibliographical Survey*, vol. 2. *National Development and International Planning of Bibliographical Services*, Paris, 1950, p. 15.

character of a general bibliography and of putting at the disposal of historians and librarians essential facts of historical production throughout the world. The editor remarks in the preface to Volume 32, 1963, that "In view of the multiplication of specialised bibliographies, it has in fact appeared more than ever necessary to offer to isolated scholars and even scientific establishments unable to obtain all these bibliographies, the means of keeping informed each year of the advancement of historical science."[12] Its wide coverage and consequent selectivity should make it a valuable guide to students, while the careful noting of more comprehensive bibliographies with narrower subject coverage will indicate to the research worker where he may seek further.

In contrast with the humanities, the social sciences have few annotated current bibliographies. There is, however, the bibliography which makes up the greater part of *Population Index* which is issued quarterly. The arrangement is logical and is set out in the table of contents. The entries are numbered and arranged alphabetically by author within each section. There is an author and a geographical index. The latter is arranged logically for readers in the United States where the journal is published. It starts with the continents of North and South America; Europe; U.S.S.R.; Asia; Africa. Within these area divisions the arrangement is alphabetical by country.

The *Southern Asia Social Science Bibliography*, which lists English and French language material published in Southern Asia, is divided into four broad classes: Sociology; Social anthropology; Political science; and Economics. There is a further logical arrangement, which is set out in full in the list of contents. There is an alphabetical author index and an alphabetical subject and geographical area index. There has been a changing emphasis in the index over the years from a topical to a geographical approach. In the 1963 volume there are three pages of references under topical subdivisions under the word "India".

## Annotated Bibliographies (Retrospective)

In many cases there is little difference between the enumerative unannotated and the annotated retrospective bibliographies. The majority of those in both categories which are arranged logically are intended to fulfil the same function, that of providing information and judgement

[12] Francois, M., Foreword, *International Bibliography of Historical Sciences*, 32 (1963) p. xi.

through selection about the publications available. The user of annotated bibliographies, however, will find them more consciously critical.

The annotated bibliographies analysed were found to be better planned and arranged than the unannotated or enumerative ones. Several were intended as guides to the literature of the subject treated. On the whole, the logical arrangement in all cases was well set out and there were cross references between the various sections as well as adequate indexes. The amount of annotation provided varied from a grading of the entries and notes of contents or of review articles to short abstracts.

In contrast with the majority of these bibliographies, which use a logical subject arrangement, Talvart and Place, *Bibliographie des Auteurs Modernes* employs an alphabetical arrangement of literary figures, giving under each writer; short biographical notes; various editions of his works in chronological order; and biographical and critical studies. As it is a bibliography of French Writers and not of French Literature, this arrangement would seem well suited to its purpose. Users are likely to use it as a series of individual personal bibliographies, and any list of personal names is best arranged alphabetically. The value, however, of having the biographical and critical works separated into books and journal articles, and then arranged alphabetically, is debatable. A combined chronological sequence would perhaps be preferable for those users interested in the most recent work being done on a particular author, especially as the volumes of this large work are slow in appearing, and the date of the latest critical works on different authors will vary according to which volume each appears in. The unannotated bibliography, Thieme, *Bibliographie de la Littérature Française, 1800–1930*, did not have this disadvantage of time-lag in publication, but has used the chronological arrangement for the critical works. The arrangement in both cases, however, is simple and clear and consequently easy to use.

The alphabetical author arrangement, however, of the *ABS Guide to Recent Publications in the Social and Behavioral Sciences*, serves no useful purpose unless the user is interested in what a particular author in the field has written. The only subject approach to its contents is through the index which is arranged according to a classification worked out by the editor, Dr. de Grazia, which he developed for his computer-based Universal Reference System (see p. 88). Numerous references are given under each heading and in the case of broad subject headings these can amount to over 100. There is also an index to the titles of books cited and

a "Proper Name Index" which refers to persons, institutions, countries and places mentioned in the entries. The value of this latter is limited especially when the user is confronted with over 200 references under "U.S.S.R.". The alphabetical arrangement of the entries precludes "browsing" on the part of the user, yet the classified index, which is intended to assist him in finding material of particular relevance to his interests through its multi-faceted approach, only hampers him by presenting him with numerous references under each heading and the task of checking references under several headings in order to find common reference numbers which will pinpoint the entry which covers the topic he wants. It is significant that the 1966 Supplement to the *ABS Guide* does not have a double classified index and a proper name index. They have been replaced by one alphabetical subject index, compiled along conventional lines.

In the annotated bibliographies which employ a logical arrangement, those in history and literature are usually divided into a general section and sections covering various periods. Roach, *Bibliography of Modern History*, however, is divided into three periods and then each period has a general section and one arranged by country or area. This is because it was compiled as a supplement to the *New Cambridge Modern History*, and the three period divisions relate to specific volumes of this work. The entries in each period division are numbered from one and prefaced by A, B or C according to the period. This allows cross references to be made easily from one section to another. The final arrangement is alphabetical by author and a further subject approach is provided by the subject index. Various scholars compiled the different sections and it is noted in the preface that "the contributors have diverged a good deal in the form of the lists which they have provided . . . the form which they had chosen was one way—and often a brief and economical way—of providing the comment which had been asked for".[13] As the complete bibliography covers such a wide field this divergence is unlikely to confuse the individual user who probably consults one section only.

In *Writings on British History*, the list of contents gives the arrangement in full, and the index employing various typographical devices allows approaches by author, topic or historical personage. Most volumes cover the publications issued in only one year and consequently the final

[13] Roach, J. (Ed.), *Bibliography of Modern History*, Cambridge University Press, 1968, p. viii.

arrangement is alphabetically by author even in the three volumes recently published which cover the years 1901–33.

In Gross, *Sources and Literature of English History*, the table of contents gives the full arrangement. Original documents and modern contributions are listed separately and guides to sources of original documents are provided. The index provides an author as well as a subject approach. The final arrangement is alphabetically by author, so that the latest contributions to the subject are not obvious, but the more important works are marked with an asterisk. Pactow in the preface to his *Guide to the Study of Medieval History* refers the user to this work for English medieval history and concentrates on the writings on medieval history of the rest of Europe. His arrangement, however, differs widely from that of Gross. Apart from a General section which provides narrow topical subdivisions and within them lists the books in a graded order, the most significant being given first, there is a section on General History of the Middle Ages and one on Medieval Culture, both divided into two periods. Each of these two sections is further divided into; (A) Outline of the period, giving a formal list of dates and lists of historical personages, etc.; (B) Recommended reading mainly for the undergraduate; (C) Bibliography of more specialised books and journal articles, and finally a bibliography of specialised bibliographies on specific topics for those wishing to pursue the subject further. This *Guide* should therefore be useful to users with a wide variety of needs as it grades its references from general outlines to treatments in depth of small specialised topics, and the whole is well arranged and indexed, but its very comprehensiveness may deter the interested layman and the serious scholar alike. A new edition has been in preparation for several years, and has had to be undertaken by a large committee, as it is such a monumental work.

The *Cambridge Bibliography of English Literature* sets out its full arrangement in the list of contents of each volume. A summary of the arrangement is also given at the beginning of each large section with references to other sources. For each period, general works are listed first and then divided into sections covering the different literary forms. The final arrangement is chronological but critical works by the same author on the same topic are grouped together under the date of the first. The combined subject and literary figure index to the whole work employs varying typographical devices and is easy to use.

The *Bibliography of British History*, published by the Oxford University

Press, is planned in four volumes as a continuation of Gross (see p. 110). Only three have so far appeared, each covering a different period: 1485–1603; 1603–1714; 1714–1789. Each was compiled by a different scholar and each differs slightly in its arrangement from each other and from Gross. The overall plan, however, is similar and they use the usual logical arrangement with divisions for general topics and geographical areas. The final arrangement, however, is sometimes chronological and sometimes alphabetical by author. The final arrangement in the bibliography of the Stuart period is alphabetical by title. The latter also has separate author and subject indexes, whereas the other two volumes have combined author and subject indexes, but in each there is introductory comment on the literature available.

Grose, *Select Bibliography of British History, 1660–1760*, covers a period of special interest to its compiler, which overlaps two of the volumes of the above. The arrangement is generally the same, but the entries are in chronological order, with later editions given under the date of the first. Important works are designated with an asterisk, and the titles of relevant learned journals are cited.

In the literary field, Cabeen, *Critical Bibliography of French Literature* is being issued in 7 volumes, each devoted to a different period. General background material is arranged alphabetically by author, but the literature itself and works about it are arranged by literary form, with principal writers treated separately. There is an alphabetical author and writer index, but the subject approach is confined to the logical arrangement which is set out in full in the table of contents. In contrast, the French-produced Bossuat, *Manuel Bibliographique de la Littérature Française du Moyen Âge*, treats its general introductory section differently from its period divisions. The former has a logical arrangement and uses connective text in places. The period divisions are also logically arranged, but in tabulated form with the entries numbered. The index to writers and anonymous works refers to entries in the introductory section by page and to entries in the period divisions by number. There is also an alphabetical index to editors and authors of critical works, similarly referenced. This, at first glance, appears confusing but the user who knows the subject field can easily find the topic or literary figure he seeks in the logical arrangement of the period divisions, although the arrangement is not set out in full. The entries themselves are listed chronologically.

It is understandable that the general section of Wright and Platt, *Aids*

*to Geographical Research*, should be arranged by form of publication. The other sections, that according to topic and that according to region, are arranged logically and the entries are in reverse chronological order. There is a combined author, subject and title index citing page numbers for subjects and reference numbers for bibliographical units. This bibliographical aid is essentially a guide for students and each main section is preceded by introductory text.

*Bibliographia Philosophica, 1934–1945*, provides both a topical and an historical approach in the field of philosophy, and its arrangement is based on that used by the *Répertoire Bibliographique* of the *Revue Philosophique de Louvain*. It is intended for international use, and in order to avoid two or three languages in the headings and subheadings has ingeniously adopted Latin. The first section, the historical, is arranged in strict chronological order and individual philosophers are listed within a period or decade according to their date of birth. A work which treats of two philosophers will be listed twice in order to appear in the appropriate year for each. The final arrangement is chronological by date of publication and books are distinguished from journal articles by prefixing the former with an asterisk. The Oslo report criticised the fragmentation of the contents of this bibliography by the use of too many subdivisions and the inconsistency of the references from section 2 to section 1. It remarked that this

> could have been remedied by an inclusive alphabetic subject index to the systematic (and perhaps also to the historical) part. Without such an index the subtle way of making divisions is more an impediment than a help to the users of the bibliography. Thus, it is very difficult, by means of the table of contents only to find literature on Experimental Psychology, not to mention psychological concepts like Behaviour, Learning, Gestalt.[14]

As psychologists are better served by other bibliographies, they are unlikely to use this one, but this criticism is still valid for other topics. In the serial bibliography which supplements it, the *Répertoire Bibliographique de la Philosophie*, the topical section seems less fragmented but the arrangement within the subsections is not clear, and the only index is an author and person one. The arrangement of the latter is set out in full in the table of contents, referring to item numbers as well as to page numbers, but it presupposes a knowledge of the subject field on the part of any one wishing to use it.

The same criticism about the lack of a subject index can also be made when considering Varet, *Manuel de Bibliographie Philosophique*. Its alpha-

[14] Unesco, *op. cit.*, p. 62.

betical index refers only to historical figures in both its volumes; one, "Les Philosophies Classiques; les Inspirations Antiques; la Philosophie Chrétienne; les Inspirations Modernes", and two, "Les Sciences Philosophiques; Philosophie de l'Histoire et de la Culture; Philosophies des Sciences; Philosophies de l'Homme." It is intended as a guide to the literature of the whole subject field and reflects the author's interpretation of the historical structure of the discipline. The list of contents sets out the arrangement in some detail, but the final arrangement is not clear. The bibliography presents a picture of the literature available, and as such is meant to be studied rather than consulted casually for material on individual topics.

Many annotated bibliographies are written as guides to the study of a subject field with a particular group of students in mind. *Paetow* mentioned above was based on the needs of the University of California in the 1930s, Cross, *A List of Books and Articles . . . of English Literary History* on those of English students at Chicago University in the 1920s. The latter went through ten editions before the author's death in 1951 and has been superseded by Bond, *Reference Guide to English Studies*, but the arrangement has remained unchanged. Hall, *Bibliography in Economics for the Honours School in Philosophy, Politics and Economics* is another example. All these guides, as well as Paetow and Wright and Platt have a general section with reference to books on methods of research, general bibliography and to publications of relevant learned societies as well as general books covering what are termed "auxiliary" subjects. Bond is in fact a bibliography of bibliographies and reference books for the study of English literature, arranged by form or type. As we have seen, Paetow attempts far more.

Four volumes of the *Foreign Affairs Bibliography* have been issued by the Council on Foreign Relations covering publications issued in the years 1919–62. The coverage is wider than the title would suggest and could more accurately be termed a bibliography of books and serial publications on public affairs and current events. The logical arrangement is divided into three sections: (1) General with subsections on political, social, geographical, ethnic factors; (2) The world since 1914; (3) Geographical regions. The list of contents gives the full arrangement and there are cross references from one subsection to the others as well as author and title indexes. It is easy to use and can be approached from any angle, at the same time opening up further areas of information. Although this bibliography does not include journal articles, it can usefully be compared with

the *ABS Guide* and the *Universal Reference Service* already mentioned, which cover a similar field. The latter are examples of the production of a bibliography to be used manually from an information retrieval system designed for the mechanism of a computer, and of expecting the human user to adapt his search techniques to those of the computer. Both seek to give a variety of approaches to the literature in their subject field, but the *Foreign Affairs Bibliography* is better suited to its use as a printed bibliography to be consulted by the human eye and brain.

The American Universities Field Staff, *Select Bibliography: Asia, Africa, Eastern Europe, Latin America*, is arranged by geographical area and logically by topic. The entries themselves are arranged alphabetically by author and the more important works are given an "A" or "B" priority. There are two combined indexes, one arranged by author and one by title. It may be asked why these separate regional bibliographies should be grouped together. The purpose of the work was to provide a bibliography of mainly English language material on those areas which have in recent years been included in area studies in undergraduate courses at American universities and colleges. The bibliography is a guide for book selection and purchase by the college libraries and the "A" and "B" gradings, which are given for 20 per cent of the entries, are intended to help students and others interested, in background reading.

In analysing these bibliographies it was found that no two logical arrangements were exactly the same, that all arrangements except that of Varet, *Manuel de Bibliographie Philosophique*, were clear and intelligible, and that all except Cabeen, *Critical Bibliography of French Literature*, the *Cambridge Bibliography of English Literature*, and Roach, *Bibliography of Modern History*, had indexes which made an author approach possible. All except *Foreign Affairs Bibliography* and *Bibliographia Philosophica, 1934–1945*, had subject indexes, which gave an additional topical approach. The lack of an author index in these cases is not a drawback to their use as these bibliographies are not intended to be used to identify works, but the provision of a subject index would be useful to supplement the classification of the other bibliographies, particularly that of *Bibliographia Philosophica.*

## Grading

Systems of grading have been used in several annotated bibliographies, either by putting entries in a graded sequence as in Paetow, *Guide to the Study of Medieval History*; or by using asterisks or alphabetical grades to

indicate the most important, for example, Gross, *Sources and Literature of English History.*

The *Cumulative Bibliography of Economic Books*, issued by the Department of Economics of the University of Pittsburgh, provides a system of rating for library purchases, "A" being those books suitable for junior college libraries, first-rate high school libraries and college libraries with a combined department of social sciences. The rating proceeds through B, C to D which designates books for University Libraries with an emphasis on graduate research as well as graduate teaching, and to E for libraries which purchase selections beyond this scope. The preface emphasises that this rating does not indicate anything about the intrinsic merits of the books, which are to be judged from the comments on them. Mention has already been made of the rating used in the American Universities Field Staff, *Select Bibliography*, which serves a slightly different purpose.

**Abstracts**

Although many annotated retrospective bibliographies give lengthy abstracts for some of their entries, there is none which provides abstracts for all of them, and abstracting bibliographies are almost entirely confined to current publications in the form of abstracting journals, which cover current books, reports and articles. As yet there are few examples in the humanities, but examples abound in the social sciences. The majority aim at providing a coverage of the subject field at regular intervals, arranging their entries in a logical subject classification, or in the order in which the articles appeared in the original journals.

*Education Abstracts*, in its present form, however, devotes each issue to a different topic or problem, and provides reports and bibliographic lists of relevant material from different countries. It does not, therefore, perform the same function as an abstracting journal but rather the function of surveying the literature available in a specific subject field, and will be treated in this analysis as a bibliographic review.

There are two types of abstracts: the indicative, which describes what the article is about; the critical, which gives the abstractor's judgement of its importance. Although many abstracting journals provide their own abstractors, others merely reprint the abstract provided by the author in the original journal. There has been considerable discussion for several years about the relative value of abstracts written by the author and those by an independent abstractor. Abstracts provided by authors are available

at, or even before, the date of publication of the papers concerned, so that an abstracting journal which reprints author abstracts can reduce considerably the time-lag between the publication of a paper and its appearance in a bibliographical tool. Arguments have also been advanced that an author may well be his own best abstracter. There will inevitably be a time-lag in the publication of critical abstracts, but abstracting journals which employ their own abstracters may be more useful as retrospective bibliographies, and this aspect of their function must influence their arrangement. Abstracts, whether indicative or critical, which are set out under headings, such as: Purpose of the paper or investigation; Method employed; and Results obtained, quickly give the reader the main points about a paper and allow him to judge more easily its relevance to his own purpose than the more usual descriptive abstract.

Two new abstracting journals which have adopted this format for their abstracts are: *Research into Higher Education Abstracts* and *Sociology of Education Abstracts.*

In the field of literature, there is *Abstracts of English Studies*, which although it contains abstracts, is more comparable to a scanning journal as the entries are grouped in the order in which they appear in the journals abstracted, and the journal titles are arranged alphabetically, so that its immediate use is to give a survey of the articles which appeared in recent issues of certain journals in the subject field, the actual topics discussed being considered of secondary importance. Each issue contains an alphabetical index under broad subject headings and under persons who are the subjects of papers. These indexes are cumulated annually. Until March 1966 the *Journal of Economic Abstracts* had a similar arrangement. No attempt, however, was made to provide a subject approach even in the index which only appeared annually and was of authors and journal titles. In its present form, in which the abstracts are grouped under broad subject-headings, it still contains a list of the journal issues which it has abstracted with a list of their contents.

*Historical Abstracts* is issued quarterly and is arranged logically allowing an approach to be made either by topic or geographical area. Until 1964 it had a conventional subject index cumulating annually and an annual author index, but since the beginning of volume 11 (1965) the subject index has been based on "cue" terms devised by the editor, Dr. E. H. Boehm, which provide shorthand descriptions of each item. This is another example of using a method of coding primarily designed for computerised

information retrieval. It is, however, possible to consult the main body of the entries from a subject approach without reference to the index as the entries are arranged in a logical order, and not randomly as in the *Universal Reference System* (see p. 88) or by author as in the *ABS Guide to Recent Publications in the Social and Behavioral Sciences* (see p. 108). The user can therefore browse through the entries for the field in which he is interested.

In the case of the *Sociology of Education Abstracts*, the index must be used, as the abstracts themselves are arranged alphabetically by author. Each abstract is individually classified according to two special notations; one which emphasises the "Education Study area" and is used by the *National Register of Educational Researchers* (U.S.A.),[15] and one which emphasises the "Sociology Study area" and is elaborated by A. Inkeles in *What is Sociology?*[16] The index, which is cumulated annually, is arranged according to these two classification schemes, and refers to the number of each abstract. It provides a two-faceted approach, but as each item can be given several places in the two classification schemes, the number of references under each class can become too large for easy use without reference to another modifying class.

The alphabetical author and subject index to *Crime and Delinquency Abstracts* must be consulted first by the user, the entries in the general section being arranged in random order. There are two other sections besides that which abstracts books and journal articles: one for official publications, which is arranged by country, and one for publications of associations and societies arranged alphabetically.

Four abstracting journals which are arranged logically and then alphabetically by author are the *Journal of Economic Abstracts* in its new arrangement since June 1966, which uses broad subject headings; *Research into Higher Education Abstracts*, which divides its material under nine headings; *Sociological Abstracts*, which uses fifty-two numbered divisions of the subject; and *International Political Science Abstracts*, which since 1953 has used a simplified form of the classification used in the *International Bibliography of Political Science*. Only the latter has a subject index in each issue. The other three have author indexes, but only provide a subject index annually. *Research into Higher Education Abstracts* offsets this by providing extensive

[15] *National Register of Educational Researchers* (Phi. Delta Kappa, Inc.), Bloomington, Ind., 1966–.

[16] Inkeles, A., *What is Sociology?*, Englewood Cliffs, N.J., Prentice-Hall Inc., 1964, p. 12.

cross references. *Sociological Abstracts* also provides an annual index by journal title.

The comprehensive French abstracting journal, *Bulletin Signalétique*, has six sections devoted to "Sciences Humaines". The sections are: Philosophie. Sciences religieuses; Psychologie. Pédagogie; Sociologie. Ethnologie; Historie des Sciences et des Techniques; Littérature et Arts du Spectacle; Sciences du Language; and are issued together as *Bulletin Signalétique, 19–24 Sciences Humaines, Philosophie*, with continuous pagination. Since 1966 an extra unnumbered section entitled "Domaines complémentaires. Préhistoire, Archéologie et l'Histoire de l'Art Ancien" has been added, and Section 23, "Littérature et Arts du Spectacle", has replaced an earlier section entitled "Ésthétique. Archéologie. Arts" and certain minor alterations were made in the coverage of the other sections. The articles abstracted are drawn from a wide range of periodicals, and are entered in the section most appropriate to their subject matter. The arrangement of each section is logical and set out in the table of contents, but there seems to be no order in the arrangement of the entries within each subject division. Each section has an author and an annual subject index. There are, however, no cross references from one section to another even through the subject index; consequently, there may be references under "Sociologie" in the subject index of the twentieth section which could be of interest to the consulters of the twenty-first section (Sociologie, Ethnologie).

*Economic Abstracts* uses the Universal Decimal Classification to arrange its entries, and the *Annual Education Bibliography* the classification adapted from the Dewey scheme by the International Education Library in Geneva. This latter bibliography is in fact the cumulative edition of the bibliographical section of the *Bulletin of the International Bureau of Education* and is restricted to additions to its library in Geneva. It is available in a form designed for cutting up into strips for sticking on to index cards for personal files. Both these abstracting journals have author indexes, but *Economic Abstracts* also has a subject index for each issue as well as a cumulative annual one.

*Documentation Économique* uses a special numerical notation for its classification. It provides a subject index to the classification in each issue and an annual author index. It is issued in book form but on thin card which is perforated for dissecting into cards for personal files.

The variety of forms and arrangements used by abstracting journals

shows that they are designed for a variety of purposes. In some cases, the needs of individual scholars have been considered more than those of libraries, as they are designed as scanning journals, or for the accumulation of personal card files. Such forms limit their usefulness as retrospective bibliographies. The classification used in other abstracting journals is better suited to computerised information retrieval.

### Bibliographical Reviews (Retrospective)

Bibliographical reviews and essays combine the functions of providing information and judgement on the items and of integrating the various contributions made to a particular field of study. The form and arrangement used will depend upon the amount of emphasis given to either of these two functions. When the work is planned as a guide to a broad subject field for undergraduate students and laymen who wish to know the basic publications available, the emphasis is more on information and judgement. Descriptive prose is usually used and the bibliographical details are incorporated in the text. Such guides and reviews are designed to be read rather than consulted for individual items and consequently make little attempt to arrange the items in any order apart from dividing the work into chapters under appropriate divisions of the subject. An example of this type of bibliographical review is Baron, *A Bibliographical Guide to the English Educational System.* The alphabetical index to the items in the text is by author and short title so that in effect it is an abbreviated list of the selected books.

Hatzfeld, *Critical Bibliography of the New Stylistics,* is on a more specialised subject and is designed for scholars and advanced students. The author describes the purpose of the work in the preface; it is

> written as a readable unit in which the different items are logically and organically linked together. Nonetheless it is quite clear that the main purpose of the book is to serve as a reference work. Therefore two extensive indexes have been added, one containing the names of the style investigators [authors], and one containing proper names, works, stylistic problems and terms occurring in the text.[17]

These indexes refer to numbered references, so that the items are very easily picked out in a page of closely printed text. The subject index also allows a finer definition of subject approach than the broad arrangement under chapter headings. Fisher, *Medieval Literature of Western Europe; a Review of Research,* is arranged according to language. Each chapter is

[17] Hatzfeld, H. A., *Critical Bibliography of the New Stylistics, applied to the Romance Literatures,* 1900–1952, Chapel Hill, University of North Carolina, 1953, p. xii.

written by a different specialist and the work has an index to proper names. It is obviously intended to be read and not consulted for information on specific topics or items.

Other reviews, which put more emphasis on surveying the field of research and on integrating the various contributions made, may be compiled by a number of authorities each writing a survey of a particular topic or problem with extensive bibliographical footnotes as in the American Economic Association, *Survey of Contemporary Economics.*

Alternatively the text may refer to a bibliographical list at the end of each section or chapter. Such bibliographical lists may be arranged in alphabetical order and numbered. The items mentioned in the text refer to this list by number. This method is used in Gittler (Ed.), *Review of Sociology,* and in the *Encyclopedia of Educational Research.* The latter, as can be expected from its title, has an alphabetical arrangement by subject of a series of articles on different educational topics. It has no index, but Gittler's *Review* and the American Economic Association's *Survey* have author and subject indexes.

It is unusual to find this type of bibliographical survey written by one man but *Social Anthropology in Melanesia* was written by A. P. Elkin at a specific point in time in order to plan future research in the area. He has surveyed the material available for each area in Melanesia and the list of books and articles at the end of each section is arranged in the order in which the items are referred to in the text. It is provided with an author and subject index.

**Current Bibliographic Reviews**

*The Year's Work in Modern Language Studies* is arranged in chapters each covering a different language and further divided into language and literature studies, and the *Year's Work in English Studies* and the *Annual Bulletin of Historical Literature* are divided into chapters covering different periods. The latter has only an author index but the other two reviews provide a subject and author approach through their indexes. Although not primarily intended to be a guide to comparative literature, the *Year's Work in Modern Language Studies,* with its wide coverage and provision of author and subject indexes, is valuable to the user interested in comparative studies. Its subject index can reveal material in this field more easily than the logical arrangement of the annual bibliography in the *Yearbook of Comparative and General Literature.*

The very nature of these bibliographic reviews and their wide coverage make them a good starting point for students embarking on a literature search, as well as useful tools for those wishing to keep in touch with developments in their own and peripheral subject fields. The significant books and articles of the year are noted and a précis is provided of the work done on a certain period or on a literary or historical figure.

Many scientific subjects have annual bibliographical reviews, with such titles as *Progress in . . .* or *Advances in . . .* Similar publications are unknown in the humanities and rather uncommon in the social sciences. When it was first published it was hoped that the American Economic Association, *Survey of Contemporary Economics* might develop into a regular serial, but this has not been so. The Royal Economic Society and the American Economic Association have, however, been co-operating since 1959 in publishing within their respective journals, the *Economic Journal* and the *American Economic Review*, analytical review-articles written by specialists. In these articles reference is made to the main printed works in the special subject field and these are listed alphabetically at the end. The two societies reprinted the first thirteen of these under the title *Surveys of Economic Theory* in three volumes in 1966. This has made the reviews more readily available, but unfortunately the date of the original publication of each has not been given, and without glancing at the dates in the list of references at the end of each review the reader has no way of knowing how up to date the material is. The numbering of the surveys in their reprinted form is of no assistance in dating them, as they are grouped under three broad headings and because of this the first article to appear in the series has become Survey no. 9. In the journals themselves the review nature of the articles is not made clear in the tables of contents.

*Progress in Experimental Personality Research* follows the pattern of its counterparts in the physical and biological sciences, and is published annually. Each chapter surveys the contributions made in the different branches of the subject and is followed by an alphabetical list of references. The works themselves are noted in the text by the author's name and date of publication. Each volume is provided with an author and subject index. The author index refers both to the page in the text and to the page of the bibliographical list on which each item appears. This publication is very similar in form to Gittler's *Review of Sociology*, which covered the eleven-year period 1945–55, except for the actual method of providing references.

Mention should be made here of *Education Abstracts*, which, despite its

title, is a bibliographical reviewing journal. Each issue is devoted to an educational topic, which it reviews and then under each country lists its relevant publications, with abstracts of their contents. There is usually a short introduction and the journal aims to present contributions made throughout the world. As the arrangement is by country, it cannot integrate and comment on the contributions in the same way as the other bibliographical reviews just mentioned.

*Current Sociology* is composed of combined trend reports and bibliographies. The report is an independent article and is followed by a logically arranged bibliography on the topic, but no indexes are provided. How helpful this method of presentation is appears doubtful when the author of the report on the Sociology of Medicine concludes by saying:

> Finally a caution is in order for use of the system of classifying the Bibliography. A standard terminology is lacking in the field, as is agreement on the topics composing it. Most of the headings used in the Bibliography are *ad hoc* and, in some cases, vague. Therefore, the reader should seek his references under every possible relevant heading without relying on any single one.[18]

The publishing of review articles and bibliographical surveys seems particularly applicable to the social sciences, as it allows freedom in the choice of topics or problems to be reviewed according to the contemporary emphasis of the subject. There is a problem, however, in indexing the review articles themselves so that the reader can find out easily what topics have been treated. There are no indexes or tables of contents for the volumes of *Education Abstracts* or for *Current Sociology*. They are, however, indexed as also are the review articles in the *American Economic Review* in the *Bibliographic Index*.

In contrast to the practice of publishing review articles is the method used for reviewing literature in the subjects of the humanities. The structure of the latter is organised on an historical basis and the section and chapter headings used in their bibliographic reviews vary little from year to year.

The function of bibliographical reviews is to provide judgement and integration of the literature available, and the use of them for identifying a particular book or paper, a use, of course, for which they are not primarily intended, can be frustrating unless the items are numbered or a bibliographical list is provided. With bibliographic details given in the text of the review itself, it is not easy to make out which books or journal

[18] Friedson, E., The sociology of medicine, *Current Sociology*, 110/1 (3) (1961–2) p. 140.

articles are being discussed, so that page headings are desirable if not essential. The lack of any in the *Annual Bulletin of Historical Literature* is a great drawback to its usefulness. All the other reviews analysed provide chapter headings as running titles, while Fisher, *Medieval Literature of Western Europe*, adds the name of the chapter's author on the recto, which seems rather unnecessary. Hatzfeld, *Critical Bibliography of the New Stylistics*, is the easiest to use from an author or special topic approach as each book or paper mentioned has a number which is used in the indexes and the numbers of the first and last references appearing on each page are given in each page heading.

During the analysis it was noted that several current bibliographies and new editions or supplements to some retrospective bibliographies had changed their arrangement or format. The compilers and editors gave no specific reasons for this apart from noting it and hoping that the new arrangements would facilitate use, or make the bibliography more useful than it had previously been.

Change in the final arrangement of entries in the *London Bibliography of the Social Sciences* from an alphabetical arrangement by author of books and pamphlets, and a chronological arrangement of government publications to one chronological sequence with the date prominently given at the beginning of each entry, has brought more uniformity to the subject divisions, and presents a better picture of work being done in each subject field. The subject divisions used in the *Bibliography* of the *Yearbook of Comparative and General Literature* have changed from those used in the parent bibliography by Baldensperger and Friedrich, but the change is merely in line with the changing avenues of study in this broad subject which are now less confined to European literature. The changes in the *Journal of Economic Abstracts* from a collection of contents lists of journals with author abstracts to a subject arrangement of the abstracts has made this publication much more useful, as it now has a subject approach. One would expect its users to be more interested in what articles have appeared on a certain topic than in what has appeared in a particular journal.

The 1966 supplement to the *ABS Guide to Recent Publications in the Social and Behavioral Sciences* has retained the alphabetical author arrangement of the original publication, but the conventional subject index is a great improvement on the original double classified index which produced in many cases too many irrelevant references and which required the user to have an understanding of its structure before he could begin to make use

of it. This work is still unsuitable for "browsing", and direct access to the bibliographical information is only possible if the user wishes to find the writings of a particular author.

### Conclusions

Of the three basic arrangements, the alphabetical dictionary arrangement is preferable for enumerative lists which are used to identify publications and to obtain bibliographic information. Alphabetical subject arrangement is quicker to use for a specific topic which is not being considered in its wider implications within a subject field.

Chronological order as a primary method of arrangement can only be considered in the sense of arranging the subject field in an historical sequence. The alphabetical and the chronological orders are more valuable as secondary arrangements and at times it is difficult to choose between the two. A chronological arrangement within a large section in a logically arranged bibliography is preferable to an alphabetical author one, which immediately strikes the user as purely arbitrary. A case can, however, be made for combining an alphabetical order with a basically chronological arrangement by putting all editions of the same work, and even all works by the same author on the same topic, together at the date of the first. This has been done in the arrangement of the critical studies in the *Cambridge Bibliography of English Literature*. Such an arrangement disregards Pollard's advocacy of a strict chronological order. To him the placing of all editions of a work under the date of the first was a "folly for which no condemnation can be too strong".[19] On the other hand, Schneider remarked that editions of a book "should, of course, be kept together".[20]

In subject bibliography the logical arrangement appears to be the most satisfactory, yet examples of logically arranged bibliographies have been produced which are almost useless either because the arrangement is badly designed or because it is not adequately explained or supplemented with appropriate indexes. The margin between success and failure in providing a logical arrangement which will make a bibliography an efficient and readily usable tool is very small.

[19] Pollard, A. W., The arrangement of bibliographies, *The Library*, 2nd ser., 10 (1909) p. 178.

[20] Schneider, G., *Theory and History of Bibliography*, trans. by R. R. Shaw, N.Y.: Scarecrow Press, 1961, p. 204.

Some bibliographies have been criticised above because their classification is too complicated and fragments the subject field, as in the case of *Bibliographia Philosophica, 1934–1945,* while others have been criticised for the use of broad subject divisions which bring together a lot of unrelated material as in some sections of the *International Bibliography of Historical Sciences.* To rectify either of these faults is not a matter of striking a happy medium, or of finding the optimum number of entries for a division or subdivision. The problem calls for an assessment of the literature of the field and of the arrangements which typographical spacing and devices can accomplish. The merits of an immediately obvious and intelligible secondary order may have to be weighed against those the logic of which only becomes apparent when the user begins to read the titles of the entries. The apparent random order of some sections of the *Bibliography of Historical Works issued in the United Kingdom* on closer inspection becomes a logical progression from general to specific aspects of the broad topic.

The historical structure of the subject is usually taken into consideration when drawing up a logical plan for the bibliographical tools in the humanities, and the basic arrangements have changed little since Pollard presented his paper on bibliographic arrangement. A greater variety of arrangement and examples of unconventional arrangements have, however, been noted in the bibliographical tools of the social sciences, none of which is wholly successful.

Part of this trend will be due to the great increase in the literature of the social sciences and their development as academic disciplines. A contributory factor will be the interdisciplinary connections between the main fields of study and the consequent desire on the part of the editors and compilers to provide a multi-faceted approach to the literature. This has brought about a trend towards indirect access to the bibliographical information, which relies upon classified indexes, "cue" terms, or a type of shorthand description to reveal the relevant references. Mention has already been made of the influence of computer-based information retrieval systems in this connection. Such bibliographies may be useful for the user who can formulate precisely the topic on which he wants material and who has the perseverance to master the complexity of the indexing system, but their production has been made at the expense of providing ones arranged conveniently for the user who consults a bibliography as much for inspiration and new ideas as for information on a specific topic. The "dowsing" needs may well be better catered for by

decks of punched-cards or by computerised information retrieval systems. At the present stage in the development of mechanised information retrieval it is hard to imagine a computerised system which will cater for the "browsing" needs without overwhelming the user with a mass of references.

It may well be impossible to produce a subject bibliography which will cater for all the bibliographic needs of its potential users. The development and present variety of bibliographic tools suggest that each fulfils a specific function. Scanning journals have the ephemeral function of keeping readers aware of what is being published; enumerative bibliographies and indexes provide basic bibliographic information; annotated bibliographies and abstracting journals give information about the entries themselves; bibliographic reviews survey recent developments and provide critical judgement; mechanised information retrieval can provide precise detailed information provided the request is made in precise terms. Readers may use these tools for current awareness, or for "browsing", or to obtain precise information. No one function can be considered more important than another. While in many cases bibliographic requests can be precisely phrased, in others the searcher is not sure what he is seeking until he actually finds it and much valuable work has originated from coming across material which on the surface appeared to have very little in common with the work in hand. It is a commonplace to remark that much is missed if we keep our eyes to the ground and look neither to the right nor to the left. We must beware of losing knowledge in our search for information.

Subject bibliographies in their various forms are one of several aids for the user of books and libraries and for seekers of information, nor should they be thought of as the only efficient means of obtaining the desired knowledge. They are a means to an end, not an end in themselves. They should therefore be compiled with this in mind. If they are not satisfactorily planned and arranged to satisfy a need they are superfluous. The provision of annual bibliographies in journals in the humanities which are usually issued without indexes provide current awareness but only if drawing one's attention to a publication which was published several months if not more than a year ago can be termed a current, up-to-date service. Such bibliographies, even if they are logically arranged (and many of them are not), are clumsy to use for "browsing" and are impossible for precise information, or retrospective searching.

Enumerative indexes either in dictionary arrangement or alphabetical subject arrangement supplemented with an author index, fulfil their limited function of providing bibliographical information. Annotated and some unannotated bibliographies and abstracting journals which are arranged logically, provided the arrangement is well set out and explained, satisfy the "browsing" need, but without good subject and author indexes are useless for the searcher after precise information. The amount of content information which will be provided will depend upon the annotations and abstracts. Some abstracts will provide critical judgement as well.

The most valuable bibliographical aid is probably the bibliographical review, which fulfils none of the functions of systematic lists or abstracts. Its main purpose is to evaluate the literature of a subject, and to provide an overall picture of trends and developments. It caters for neither the "browsing" nor "dowsing" needs of the research worker. Its value lies in the fact that it is more than a list competently compiled and arranged; rather it is a piece of work in its own right which exhibits judgement and insight. The best bibliographical reviews integrate the various contributions made in a subject field and summarise the developments which these contributions have brought about, and are written by scholars intimately concerned with the topic. They are valuable not only to the student or layman who wants a general picture of the subject, but to librarians considering purchases, and to other scholars working in peripheral fields. They are valuable in stimulating thought. The advances in knowledge are not obtained by collecting a large number of references and drawing some conclusion from them, but by following up various trains of thought, often along apparently irrelevant lines.

Bibliographical reviews as we have seen may follow a regular arrangement or structured plan as in *Year's work in Modern Language Studies*, or be devoted to a series of specific topics as in *Current Sociology* or *Surveys of Economic Theory*. The contents of these latter may, however, be overlooked and their potential value lost unless they are carefully tabled and indexed in bibliographies of bibliographies.

This leads on to the question of the need for bibliographical instruction. User surveys which have been published indicate that subject bibliographies are little used, although abstracting journals play a not unimportant part in scientific research. Is this because bibliographies have been found unsatisfactory for various reasons for providing information

on what has been published or is available? The variation in the quality of arrangement and selection apparent in this small sample appears to lend weight to this suggestion. Or is it because the reader for whom they are intended is unaware of their potential use and has never found out how to use them. If indeed a subject bibliography can be described as a "tool", instruction in its use would seem to be appropriate.

# 8. THE USE OF BIBLIOGRAPHICAL TOOLS

A SMALL survey was carried out by the writer of the use which academic staff in the humanities and social sciences make of bibliographical tools, details of which are given in Appendix I.

It is difficult to draw any general conclusions from this small survey even about the utilisation of subject bibliography by one university department or group of scholars. The use and choice of such tools seemed a matter of personal preference dependent largely upon individual awareness of their existence and potential usefulness. In many cases it became clear that little was known about what are regarded as the standard bibliographies in the various subject fields. It was this which accounted for the lack of use rather than any intrinsic shortcoming in the tools themselves. For instance, only three of the five economists were aware of the *Index to Economic Journals*, and none knew the *International Bibliography of Economics*. It is, however, significant that in many cases the need for such tools had not been felt.

This small survey of the actual use of bibliographical tools by academic staff has a bearing on some of the conclusions reached in the previous chapter on the arrangement of bibliographies. All of those interviewed except one economist preferred a logical arrangement to an alphabetical subject or dictionary arrangement. It would, however, be impossible to draw up specifications for arrangement for each of the disciplines which would accord with the preferences of this group of scholars. Apart from the two who had compiled bibliographies themselves, the relative advantages and disadvantages of the various methods of producing a logical arrangement had not occurred to those interviewed. They were prepared to accept any consistent and reasonably clear arrangement and to adjust their use accordingly. Complicated classification schemes, cryptic abbreviations, unattractive typography tended, however, to deter the reader but in most cases he would use the tool if he found the information in it useful and comprehensive.

None of the experimental arrangements found in several of the social

science tools was thought to be successful, because each was clumsy to use and presupposed that the consulter wanted precise information. Consequently those current bibliographies which employed classified indexes for multi-faceted approaches were used only for current awareness and the special arrangement defeated its own purpose. Much of this is due to the social scientists' distrust of the various classifications and subject headings employed. Despite this and the mixed success of the applications of computers to the compilation of bibliographic tools, research is still necessary along these lines.

It was concluded in the previous chapter that the new patterns in subject bibliography for social scientists sought to cater for the "dowsing" needs at the expense of the "browsing" ones. In the interviews it became clear that the "dowsing" needs of academic social scientists are very small, almost non-existent, although it was found that those who were concerned with practical applications rather than theoretical problems wanted more precise information. The latter wanted a narrow classification in the bibliographic tools as they could define their requests in more precise terms. This is indicative of the differing bibliographical needs of the various groups of social scientists, in that those in the field can be expected to have more "dowsing" needs than their academic colleagues.

Doubt was expressed in the previous chapter about the value of bibliographies appearing regularly in journals. It would appear that these are found very useful, especially by the economists in the survey, for current awareness and for compiling personal card indexes or files.

The interviews reinforced the earlier conclusion that the bibliographic review is probably the most valuable bibliographic aid. It was consulted at all levels, and with bibliographies provided in standard works was usually the first aid consulted. Especially in those disciplines which are developing rapidly and which have an ever-changing structure and emphasis, bibliographic reviews are essential, and even in those fields which have a more stable structure and a well established bibliography, bibliographic reviews and surveys are necessary to sift regularly the vast amount of printed material which has appeared and is still appearing so that it is possible to obtain a conspectus of the state of information and knowledge in any one topic without being overwhelmed by irrelevant material.

In the interviews it became clear that there was a great variation in the awareness of bibliographic tools and in the efficient use of them. Several

scholars were unable to cite correctly the tools they used, and others would have benefited from some instruction in their use. Those who use bibliographic tools demand a high standard of coverage, selectivity and information about the individual content of the entries. If the need for such specialised tools is apparent there is also a need for instruction in their efficient use just as there is in the use of other research tools and techniques. It would, however, be more relevant for present-day needs to provide courses on the types of printed records and sources of information available in each subject field and on the guides and aids to their use, including bibliographic tools, than to provide a general course on subject bibliography.

This user survey was confined to teaching members of an academic community. The bibliographic needs of, and the uses made of subject bibliography by, other groups of readers have hardly been touched upon. A similar survey amongst social scientists in the field, students, public and university librarians and others who seek information either for general interest or in the course of their work would have been useful for comparison. It is likely, for instance, that the "dowsing" needs of social scientists in the field are greater than those of their academic colleagues, that post-graduate students and undergraduates in their final year make, or could make, greater use of bibliographic surveys, and that general subject indexes, which were hardly known to those interviewed, are regularly consulted in public libraries. This investigation is, however, an indication that the control of the vast amount of printed material which is being produced at the present time and which shows no sign of diminishing cannot be achieved by publishing yet more bibliographic tools. Such tools must satisfy a need within the whole framework of communication.

As the coverage of national bibliographies, which should be as complete as possible, improves, the task of the subject bibliographer will be to survey constantly the material available in each field and to select carefully from it in such a way as to produce a guide to relevant material rather than an enumeration of titles. Even though certain material may be overlooked, the loss is unlikely to be irreparable. If the information or knowledge it contained is important or relevant for later work it is likely to be discovered afresh, and the time taken in finding such information amongst a mass of printed material if we are to insist upon comprehensive subject bibliography, may well equal or exceed that taken to carry out the actual research itself. There will still remain a place for the comprehensive

bibliography of a specific subject, well set out and logically arranged according to the structure of the discipline, which, however, may change from time to time. Abstracting journals and current subject bibliographies will continue to have a place in the communication of up-to-date information and will form the basis for bibliographic surveys and subject bibliographies. It is therefore essential that such tools be compiled by persons who can combine a profound subject knowledge with bibliographic training. All too often at the present time reading lists, which do not deserve to be dignified by the title "bibliography" are being produced by persons whose subject knowledge and bibliographic training are equally suspect. This survey has shown that such lists are not used, but that standard annotated bibliographies and bibliographic guides and surveys are. The mere listing of references to recorded information by no means controls the knowledge contained in them. If accumulated knowledge is to be readily available there must be a continuous reappraisal, synthesis and consolidation of the information which is being brought to light, and it is in this process that subject bibliography must play its part.

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# APPENDIX I

## A SURVEY OF THE USE MADE OF BIBLIOGRAPHICAL TOOLS

FIVE university departments, Social Studies, Economics, Medieval and Modern History, French and Philosophy were selected as representative of the social sciences and humanities and all teaching staff in them were sent a questionnaire with a covering letter (see Appendix II). The questionnaire endeavoured to find out what use these members of the teaching staff made of bibliographic tools and which types they preferred: indexes, subject bibliographies, avstracting journals or bibliographic surveys. Fifty-seven questionnaires were distributed, of which twenty-three were filled in and returned. Of the scholars who returned the questionnaire, eighteen were later interviewed and two were contacted by letter (see Table 1).

TABLE 1

| | Questionnaires distributed | Questionnaires returned | Persons interviewed |
|---|---|---|---|
| *Social Sciences* | | | |
| Sociological studies | 15 | 8 | 7 |
| Economics | 12 | 5 | 5 |
| Sub-total | 27 | 13 | 12 |
| *Humanities* | | | |
| Medieval and Modern History | 12 | 6 | 3 |
| French | 12 | 3 | 3 |
| Philosophy | 6 | 1 | 0 |
| Sub-total | 30 | 10 | 6 |
| Total | 57 | 23 | 18 |

Of twenty-seven social scientists who were sent a questionnaire thirteen replied, but of the thirty humanistic scholars only ten did. It was not possible to find out why the remaining thirty-four persons did not reply, but we cannot assume that it was because they do not use bibliographies. It may well be, however, that the majority of them attach little importance to them. Twenty-two respondents used bibliographic tools for their own research, fourteen for information on subjects outside their own particular topic and twelve for lecture preparation. Two gave negative replies to all questions. The scholars in question, both in the humanities, did not use bibliographic tools at all, nor did they scan regularly any abstracting journal or bibliography published in serial form or as part of a journal. In later correspondence it became clear that one of these had misunderstood the questions and had assumed that the bibliographic tools referred to were ones "compiled in libraries". He admitted using printed ones for his own research. The other said he had never attempted to use subject bibliographies and remarked that he thought it possible that "such aids are of less value in Philosophy than in some other disciplines, since one usually finds it so difficult to understand the books one does know of that it seems pointless to cumber one's mind with a long reading-list".

Table 2 shows the replies to Question I which related to the use of bibliographic tools.

TABLE 2

| | No. of replies | Used for research | Used for outside information | Used for lecture prep. |
|---|---|---|---|---|
| *Social Sciences* | | | | |
| Sociological studies | 8 | 8 | 5 | 4 |
| Economics | 5 | 5 | 3 | 2 |
| Sub-total | 13 | 13 | 8 | 6 |
| *Humanities* | | | | |
| Medieval and Modern History | 6 | 6 | 4 | 4 |
| French | 3 | 3 | 2 | 2 |
| Philosophy | 1 | 0 | 0 | 0 |
| Sub-total | 10 | 9 | 6 | 6 |
| Total | 23 | 22 | 14 | 12 |

One sociologist also used bibliographic tools for checking references from other sources, one French scholar for preparing a section of an annual bibliographic survey, and one historian had made use of them when compiling a subject bibliography for publication.

It has already been remarked that it is difficult to differentiate the groups of bibliographic tools: indexes, subject bibliographies, abstracting journals and bibliographic surveys (see p. 3). During the interviews it became clear that in the second question "subject indexes to periodicals" had been variously interpreted as enumerative periodical indexes, as annual subject indexes to a specific journal and in one case as union catalogues of periodical holdings. The replies under this heading have therefore been disregarded. The interviews, however, revealed that of the general subject indexes to periodicals available, only the *Index to Economic Journals* and the *International Bibliography of Sociology* were used. As there are no abstracting journals as such available for French, the current annotated bibliographies in this subject field which have lengthy abstracts for some of their entries were included under this heading.

Table 3 shows the replies to Questions II and IIIA of the Questionnaire.

As might have been expected the humanistic scholars made a much heavier use of subject bibliographies than the social scientists, although in the latter group more than half the sociologists made use of them, despite

TABLE 3

| | No. of replies | Sub. bibl. | Abst. journals | Bibl. reviews | Regular scanning |
|---|---|---|---|---|---|
| *Social Sciences* | | | | | |
| Sociological studies | 8 | 5 | 8 | 5 | 2 |
| Economics | 5 | 1 | 2 | 4 | 4 |
| Sub-total | 13 | 6 | 10 | 9 | 6 |
| *Humanities* | | | | | |
| Medieval and Modern History | 6 | 6 | 2 | 4 | 4 |
| French | 3 | 3 | 3 | 2 | 3 |
| Philosophy | 1 | 0 | 0 | 0 | 0 |
| Sub-total | 10 | 9 | 5 | 6 | 7 |
| Total | 23 | 15 | 15 | 15 | 13 |

the fact that their discipline is developing rapidly and that there are comparatively few special subject bibliographies available in it. In contrast, the economists relied almost entirely on bibliographical reviews and the scanning of abstracting journals or bibliographies published as parts of journals. Only one of the five economists consulted any of the several retrospective subject bibliographies which have been compiled on economic topics.

Apart from the philosopher quoted above, those of the humanistic scholars who replied made use of most types of bibliographical tools and in the interviews some of the most enthusiastic and most knowledgeable of the users of current and retrospective bibliographies were found amongst this group.

The interviews sought to follow up information gained from the replies to the questionnaire and to find out what part bibliographic tools played in the communication of printed information amongst university teachers; what other channels were used; and whether the arrangement employed in the bibliographies and abstracting journals affected the use which scholars made of them. Comments on specific bibliographic tools were also collected.

It was found that subject bibliographies played a greater role in the humanities than did bibliographical reviews, abstracting journals and current bibliographies which were used more in the social sciences. All of those interviewed, however, consulted the bibliographies provided in standard works and followed up references from books and articles. No one started a new piece of research by making an exhaustive literature search. Primary sources (manuscripts and other graphic records) formed the basis of the research, and standard works and bibliographic surveys provided background material and references to more detailed works. It was then that the scholar referred to subject bibliographies to fill in gaps. Some of those interviewed, including four of the five economists, did not bother with the last step. The French scholars, however, consulted special subject bibliographies at an earlier stage, possibly because of the availability of good tools with logical arrangements based on the well established structure of the field. All used current bibliographies to bring their information up-to-date. One economist, concerned with practical applications, used the specialised library services of a government department.

Two of the sociologists were doing research on topics which did not

require sociological books or articles as such, because their work involved bringing a sociological perspective to other aspects of human life which were usually regarded as part of such subjects as economics, drama or market research. Consequently they drew on a wide range of literature in different fields. Besides obtaining the primary source material available, one had used standard bibliographic guides to specific topics, following up references as they came to hand.

All five economists relied heavily upon bibliographical surveys and review articles in the *Economic Journal*, the *American Economic Review* and *Econometrica*. For current awareness they all glanced through the list of recent journal issues given in each number of the *Economic Journal*. The sociologists also found bibliographic reviews and surveys, particularly the trend reports and bibliographies of *Current Sociology* very useful, but only as a starting point for further investigation. One lecturer thought bibliographic reviews particularly useful for undergraduates or for those seeking information on a subject with which they were not very familiar, because the more conventional subject bibliographies and indexes were liable to "swamp the student" with too many references.

All interviewed kept personal files of bibliographical information, mostly in the form of a card index, but two preferred loose-leaf files which could accommodate extracts as well as bibliographical details. All but three admitted that they were not very methodical in maintaining these files and that they sometimes neglected them for short periods.

Most of those interviewed seemed able to adjust themselves to the varying arrangements employed in the tools they used and were not deterred by them. They were more concerned about the coverage of the bibliography itself. Many found it difficult to say which type of logical arrangement they would prefer and the final arrangement of the entries was in most cases considered unimportant, in fact three of those interviewed said they could imagine that in some cases they would prefer a chronological order by date of publication, but in others they would prefer an alphabetical author order. The latter arrangement was in most cases given preference because it made checking in a library catalogue easier. Two modern historians had definite ideas about arrangement, which were opposed to each other. One had had to consider arrangement carefully as she had recently compiled a bibliography. She was in favour of a logical arrangement throughout, proceeding from general to specific topics and keeping the whole in a chronological order of historical events. She also

wanted to have books and journal articles kept separate within the logical sequence. This she maintained made the checking of library catalogues easier and allowed the user to concentrate first on book material and then on journal articles, which in smaller libraries might be more difficult to obtain. In her own experience, this way of approaching the literature had proved the most efficient and time-saving. This view, however, was not held by her colleague, who was more concerned with what information was available in any form. He wanted a greater variety of approaches to the literature now that history was becoming a social science, and a precise indication of the content of books and articles rather than a critical evaluation of them. He regarded the "cue" terms of *Historical Abstracts* as a step in the right direction. In contrast, yet another historian who used this abstracting journal had not made use of its subject index either in its older, more conventional form or in its new system of "cue" terms. He consulted the logical arrangement of the entries themselves.

The social scientists, particularly the sociologists, tended to glance through a wide field rather than to look up their own particular topic, as most had found the logical arrangements employed in social science tools unsatisfactory. Individuals, however, commented favourably upon the classification schemes used in the *International Bibliography of Sociology* and the *Index of Economic Journals*. Much depended upon the particular interest of each person interviewed. Those concerned with the applications of the discipline demanded narrower classification and more precise information than those concerned with theoretical propositions. Two economists used the *Journal of Economic Abstracts* in its new form and preferred it to *Economic Abstracts*, because the former used broad subject headings and not a precise classification. The latter abstracting journal, one said, included foreign language material which he was unable to use.

The unconventional arrangements of some of the social science bibliographies had not been found satisfactory. The one person who used *Crime and Delinquency Abstracts* found the use of the subject index frustrating and in order to find entries in the randomly arranged *corpus* said he usually fell back on consulting the author index for names he knew. The user who scanned *Sociology of Education Abstracts* regularly said he glanced through the entire issue of author arranged entries rather than use the two classified indexes. The same sociologist said he had learnt to mistrust the classification and indexing of most bibliographic tools and tended to consult them under broad headings. Another sociologist said she found she had to look

under three different headings in *Psychological Abstracts* to cover her particular topic, social perception.

All social scientists preferred to browse through a logical arrangement than to have to use a special index or classified guide as an intermediary step to the bibliographical information. With such tools as *Sociology of Education Abstracts* and *Crime and Delinquency Abstracts* this meant that they were only used for current awareness and not as retrospective bibliographies.

# APPENDIX II

The University,
Sheffield, 10.

POSTGRADUATE SCHOOL OF LIBRARIANSHIP
AND INFORMATION SCIENCE

6th May, 1968

Dear

During my year's study-leave from the University of Western Australia, where I am Deputy-Librarian, I am carrying out an investigation of the format and arrangement of subject bibliographies. Within the general term "subject bibliography" I include general subject indexes to periodicals, abstracting journals, bibliographical reviews or surveys of the literature of a particular subject field, as well as the enumerative and annotated lists which are usually referred to as subject bibliographies. These bibliographical aids or "tools" are prepared and compiled primarily for scholars and other users of books and libraries, and not, as is sometimes thought, for librarians, and my investigation includes a study of the use made of them by academic staff. I should therefore be grateful if you would assist me by filling in the attached brief questionnaire. Names will not be quoted in my study, but I should be glad if you would give your name when you return the questionnaire in case I wish to follow up your reply with a request for an interview.

Yours sincerely,

*Visiting Senior Research Worker*

## UTILISATION OF SUBJECT BIBLIOGRAPHIES

Name ..... Department.....

I. Do you use bibliographical "tools" when:

a. embarking on research in your own field? Yes/No

b. seeking information on subjects outside your field? Yes/No

c. preparing lectures for undergraduates? Yes/No

If you use bibliographical "tools" for any other purpose, please give details .....

II. What type of bibliographical "tool" do you use in each of the above situations? Please indicate by a tick, or if you prefer, give the name of the bibliography used.

| | Own research | Outside information | Lecture preparation | Other |
|---|---|---|---|---|
| Subject indexes to periodicals | | | | |
| Special subject bibliographies | | | | |
| Abstracting journals | | | | |
| Bibliographical reviews or surveys | | | | |

III. A. Do you scan regularly any abstracting journal, or bibliography which is published in serial form or as part of a journal? Yes/No

III. B. If so, please give the names of them .....

PLEASE RETURN TO: MISS B. M. HALE, Postgraduate School of Librarianship and Information Science, *by 15th MAY, 1968.*

## *INTERNATIONAL SERIES OF MONOGRAPHS IN LIBRARY AND INFORMATION SCIENCE*

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Vol. 2. ANTHONY—*Sources of Information on Atomic Energy*
Vol. 3. BLAUG—*Economics of Education*
Vol. 4. SAUNDERS—*The Provision and Use of Library and Documentation Services*
Vol. 5. CAMPBELL—*Metropolitan Public Library Planning Throughout the World*
Vol. 6. BARANSON—*Technology for Under-developed Areas*
Vol. 7. YESCOMBE—*Sources of Information on the Rubber, Plastics and Allied Industries*
Vol. 8. SAUNDERS—*University and Research Library Studies*
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