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**LCSH and PRECIS in Library
and Information Science:
A Comparative Study**

by

Yasar Tonta

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INTRODUCTION

The Library of Congress Subject Headings (LCSH) is perhaps the most commonly used subject access system in libraries. It provides catalog users the opportunity of locating books and materials in the library collection when they are unable to recall the authors or titles of specific items. Yet LCSH has long been criticized for its weaknesses as a subject access system and it is often compared with other indexing languages such as PRECIS (Preserved Context Index System).

This study aims to compare the performance of LCSH and PRECIS for the books published in 1987 in the field of library and information science (LIS) in order to investigate the strengths and weaknesses of each system. Subject headings and PRECIS strings assigned for 82 titles have been analyzed and the two major subject access systems have been compared regarding the number of entries, exhaustivity and specificity of the entries provided, the variety of subdivisions, and other qualitative features.

What is LCSH?

The Library of Congress (LC) subject headings system, developed originally for the Library's own collection, has been adopted widely by libraries and information services in the United States and, to some extent, abroad. An important reason for its widespread use is the fact that LC cataloging records have been available to other libraries since 1898 when the Library began selling its printed catalog cards. Use of LC cataloging information increased considerably when the Library began distributing its MARC (Machine-Readable Cataloging) records (Chan, 1986a, p. 3).

This paper is not intended to be a detailed account of LCSH, since this subject has been discussed by a number of eminent authorities in the field (Chan, 1986a; Angell, 1972; Haykin, 1951). However, some characteristics of LCSH are discussed below.

LCSH is a controlled indexing vocabulary that was built on "literary warrant." That is to say, LCSH was not conceived as "a comprehensive system covering the universe of knowledge"; instead, it covers those subjects represented in the collection of the Library of Congress.

Unfortunately, as Chan (1986a, pp. 9-10) points out, systems based on literary warrant grow by accretion and, as time passes, logic and consistency suffer in spite of conscientious maintenance efforts.

Thanks to the use of computers in indexing, full-text indexing of documents is now possible. Additional subject headings can be added to the machine readable catalog records at a negligible cost. Such facilities were unavailable, however, in the early days of indexing. Hence fewer index terms, taken from strictly controlled vocabularies, have been used to describe the topical contents of the library materials. Since LCSH is primarily a precoordinate and controlled system, subject headings are assigned "on the basis of economy of input and redundancy of searching" (Boll, 1982). Boll further describes this situation as follows:

Headings are typically assigned to the work as a whole, using only one term per topic. Thus we achieve economy of input. Readers who approach the catalog from other terms, or other levels must make more than one search-approach; they must search redundantly, being referred by cross-references that are either system-derived or user-derived, that is either printed or imagined. (1982, p. 11)

In other words, the burden of getting access to the desired record by trying every conceivable synonym is on the user in that it is the user who has to correctly predict the subject heading assigned to the document by the indexer. Furthermore, in order to have users make redundant searches, the system should provide a sound syndetic structure (i.e., cross-references) by which users are guided through the preferred headings. In the case of LCSH, it was found that LCSH "see references" are "frequently outdated and limited to just a few of the likely search terms used by searchers" (Bates, 1986, p. 364).

Bates (1986, p. 364) maintains that Cutter's rule of specific entry is the most important rule of LCSH subject cataloging. Boll further explains the logic behind this rule:

The use, whenever possible, of the single most specific authorized term that describes the work as a whole has been maintained for a century as the subject heading ideal. This policy results in economical use of subject headings and has been based not only on philosophical outlook but also on cost and labor and the technology available at the time. (1982, p. 10)

This practice, however, has been criticized as it limits "entries for each book to only the level of specificity found in that book," and therefore "eliminates the redundancy that would be introduced by posting a book to other levels of specificity as well" (Bates, 1986, p. 364).

While LCSH is capable of describing multitopic works it "frequently fails to combine unrelated subjects into a single headings" (Gabbard,

1985, p. 192). Multielement works must be treated as multitopic works (Svenonius and Schmierer, 1977, p. 338; Mischo, 1982, p. 107). Angell (1972, p. 152) describes a multielement work as such that it is "intended to characterize the kind of document, common in technical fields, which is on a narrow topic—'specific' in that sense—and that can only be fully expressed by the representation of all of its elements." Angell (1972) provides an example of how LCSH treats a multielement work as a multitopic work by assigning a heading to each of its elements:

Title : *The phenology and growth habits of pines in Hawaii.*

1966. 25 pages

Headings: 1. Pine—Hawaii
2. Phenology
3. Trees—Growth

The above policy may be due partly to the fact that LC does not want to expand its controlled vocabulary used for subject headings. Multielement subject terms, on the other hand, have been extremely helpful for pinpointing the specific works in card catalog and printed indexes. Yet it is becoming less and less important, given the increasing use of capabilities such as keyword search and Boolean operations on LCSH in online catalogs (Chan, 1986b). (See below for more information on the use of LCSH in online catalogs.)

What is PRECIS?

Derek Austin, the creator of PRECIS (Preserved Context Index System), provides a detailed and complete description of the system in his *Manual* (Austin, 1984). PRECIS is

a technique for subject indexing developed originally for the *British National Bibliography (BNB)*, and adopted since by a number of indexing agencies throughout the world. A PRECIS index is usually produced by a computer, but the system does not belong to the class of automatic indexes in which terms, intended for use as keywords in retrieval, are extracted from texts entirely by computer. The production of a PRECIS index can be considered in two stages, the first performed by a human indexer, and the second by a machine. The indexer is responsible for intellectual tasks, such as examining the document, selecting appropriate indexing terms and deciding how these terms are interrelated... The terms selected by the indexer are recorded in the form of an *input string*, where each term is prefixed by a code that indicates, for example, whether or not the term should function as a user's access point, a *lead*, in the printed index. These strings are input to the computer, which then takes over the various clerical jobs which indexers tend to find irksome for the same reason that computers do them so well: they consist of repetitive, step-by-step routines which can be described in algorithms and translated into programs. (Austin, 1984, p. 1)

Curwen (1985, p. 246) points out that the literature being indexed is the main source of indexing terms that are used in PRECIS. Indexers created a constantly growing thesaurus according to the needs of the literature and their organizations.

PRECIS is akin to a natural language-based subject indexing system. It allows for "a very specific, syntactically meaningful, natural language representation of the subject content" (Bidd et al., 1986, pp. 177-78). In PRECIS, unlike LCSH, different concepts can easily be combined to describe multielement works as PRECIS has no restriction on vocabulary per se. Each library using PRECIS can create its own vocabulary if they wish to do so. Libraries can also make use of the vocabulary file created by the British Library Bibliographic Services Division, which is available on microfiche.

PRECIS is not a subject heading system. It differs from LCSH in terms of both content and terminology (Austin, 1984, pp. 2-3). As pointed out earlier, indexing terms in PRECIS are not drawn from a controlled vocabulary. "The whole of the subject has been stated in a summary form (a mini-precis) under each of the PRECIS leads" (Austin, 1984, p. 3). Although the entries in a PRECIS and a chain index are similar to each other in format, PRECIS is not a variety of chain indexing. Chain indexing must be based on a classification scheme. Curwen (1985, p. 245) provides an example as to how it is that subject index entries are produced by chain indexing. Using the Dewey Decimal Classification (DDC) number 378.52 assigned to a text on higher education in Japan, Curwen analyzes it stage by stage into the chain:

300	Social sciences
370	Education
378	Higher
378.5	Asia
378.52	Japan

From this analysis the following subject index entries would be created:

Social sciences	300
Education	370
Higher education	378
Asia: Higher education	378.5
Japan: Higher education	378.52

As Curwen (1985, p. 245) notes, index entries produced by chain indexing are complementary to the classification. A perfectly reasonable index

entry in PRECIS such as "Higher education: Japan" would not be produced by chain indexing as it is thought to be "duplicating the work done more effectively by the classification scheme." Differences between PRECIS and chain indexing are further discussed by Austin (1984, pp. 2-7) and Dykstra (1985, pp. 1-7).

PRECIS also differs from LCSH and chain indexing from the users' point of view. Weintraub (1979) discusses the ways in which catalog users can get access to the desired works in LCSH, chain indexing and PRECIS: "With both LCSH and chain indexing it is assumed that the user often scans the names of publications as a part of the search strategy. With PRECIS, the user is required to read through the subject names until the exact topic is found. Only then is the user referred to a list of publications. This pattern saves time for the user who knows exactly what is sought" (p. 104).

As indicated earlier, LCSH is the most widely used subject access system in libraries throughout the world. PRECIS, on the other hand, has been adopted by relatively few organizations for subject indexing. Apart from the British Library (hence Great Britain) where it was originated, PRECIS has been most widely used in Canadian libraries and institutions. A number of organizations including the National Library of Canada adopted PRECIS for their printed catalogs. PRECIS was also in use in Australia for a number of years for the publication of the *Australian National Bibliography*. In the late 1970s and early 1980s, PRECIS drew considerable attention in the United States as well. PRECIS has been, and still is, considered to be an alternative for LCSH and much has been written on PRECIS since then. As Curwen (1985) has noted, however, the greatest progress of PRECIS will likely be seen in those countries which "do not have a strong established tradition of subject cataloging" (p. 265).

PRECIS has been in use in languages other than English because it is based on "the kind of grammatical principle used in transformational grammar" (Foskett, 1982, p. 275). PRECIS has been successfully applied in French and German and "it is being actively studied in countries as linguistically and culturally far apart as Denmark, Italy, Poland, India, and China" (Curwen, 1985, p. 253; see also Austin, 1984, pp. 294-306). Dykstra (1985) hopes that direct machine translation of PRECIS strings from one language to another can be accomplished so that "the database can be interrogated in a choice of languages" (p. 23). As Foskett (1982) has noted, "PRECIS appears to be the only indexing language

with real possibilities for multi-lingual indexing” and it is considered to be “one of the best systems of indexing currently available to us, if not the best” (p. 275).

LCSH and PRECIS in Online Environments

Before LC closed its card catalogs, much discussion concentrated on whether LC should abandon its age-old LCSH altogether and start using a new subject indexing system such as PRECIS. The assumption was that “compact and potentially economic storage makes it feasible to increase the number of descriptors to be used as search terms in the online system” (Williamson, 1984, p. 60). LC has always been cautious in keeping the number of subject headings per title as low as possible due to time, money and space constraints. After studying the feasibility of using PRECIS, LC dismissed the idea on the grounds that such a change would cost as much as \$1,000,000 per year and the expense of maintaining two different subject heading/indexing systems would be too high (Subject, 1978). For most American librarians, accepting the use of PRECIS would indeed, as Curwen (1985, p. 253) points out, “mean closing catalogues, learning a whole new way of thinking about subject cataloguing and accepting that the US MARC databases would not contain ready-made indexing for existing material” (*cf* Dykstra, 1978).

LC further argued that

The addition of PRECIS strings to traditional cataloging with LC subject headings would not provide additional access points for libraries capable of machine retrieval of MARC data. A suitably designed retrieval system using Boolean logic to search titles, subjects, fixed fields, and the geographic area code would usually provide access to the same words which a PRECIS string would provide.” (Subject, 1978, p. 154)

LC has certainly made a valid point, although it is difficult to know if LC’s assertion was based on research findings or guesswork. It was suggested that, using keyword search and Boolean operations, users can get access to specific titles very quickly by combining the different terms assigned to different subject headings by LC. However, this may well be a false assumption. Dhawan and Yerkey (1983, p. 213) argue that: “With so few subject headings per record, automated subject searches using Boolean logic is not feasible.” Yet the number of subject headings assigned for each title by LC during late 1970s was well below 2.

It is reasonable to assert that LC’s argument was partly based on the assumption that LCSH as a subject access mechanism would be more

useful in online catalogs because of the additional search facilities provided by such catalogs, including keyword searching in subject headings and the use of Boolean logic. It appeared, however, that subject access in online catalogs by way of LCSH was insufficient to satisfy the needs of online catalog users. Several studies have attempted to identify the shortcomings of LCSH in an online environment and research has been conducted to find out the ways in which the retrieval performance of LCSH in subject searching could be enhanced (Cochrane, 1986; Cochrane, 1978; Markey, 1984; Mandel and Herschman, 1983; Mandel, 1985; Frost, 1987; Markey and Vizine-Goetz, 1986-7; Gerhan, 1989). These studies recommended that enriching catalogs by adding terms from the table of contents and back-of-the-book indexes and providing more term relationships, including a concise summary of the book's content in the MARC record (with the cooperation of publishers), would increase the performance of subject retrieval in online catalogs. As was envisaged by many librarians, transformation from card catalogs to online catalogs has not automatically improved the subject access performance.

The users' approach to online library catalogs too has changed enormously over the years. Users now perform more subject searches than ever before; the availability of various search techniques encourages them to type in more natural-language-like queries, even for subject access on LCSH. Yet, users are mostly unaware of the existence of the "red book," as LCSH is called, and they rarely consult LCSH in the course of a subject search (Van Pulis and Ludy, 1988). As Hartley (1988, p. 1) points out, users approach online catalogs with a wide range of knowledge of catalogs and cataloging, information retrieval, and the subject of their search. Thus, anticipating all the requirements of a wide variety of different user groups and accommodating them in an online catalog is a formidable task.

The results of failure analysis studies have shown that about half of the terms used by readers in their first try at the subject catalog failed. Failures may be due to the system, the indexer, or the user. For instance, an indexing scheme might have a deficiency; an indexer might overlook some of the themes in a work; a catalog user might misspell a word. More often than not "the natural language that expresses readers' request is not mapped, either through cross-references or sufficiently convenient displays of system's vocabulary, to the terms appearing in the library catalog" (Mandel and Herschman, 1983, p. 149). In other words, indexing languages currently in use often do not provide several access points

(i.e., subject headings) for each title represented in an online catalog, despite the fact that users come to an information system with a wide variety of expressions and phrases associated with a topic (Bates, 1986, p. 362). In the case of LCSH, the variety in expression has generally been limited to one or two (or three at most) subject headings per title.

Regarding the use of LCSH in online catalogs, Williamson (1984, p. 84) questioned the suitability of precoordinate index terms even if index terms can easily be manipulated in the computer environment. She thinks that, because of the increasing use of subdivisions by LC in its LCSH, "false coordination" may occur to a certain degree when searching is based on Boolean operations on terms that are segments of LC subdivided headings. For instance, users trying to find books on **Business libraries AND Great Britain** will not only retrieve all the books cataloged under the subject heading **Business libraries—Great Britain** but also retrieve books under, say, **Public libraries—Great Britain—Services to business and industry**.

It is believed that PRECIS has great potential for online subject retrieval. Despite the fact that PRECIS is a precoordinate indexing language and "was developed to be used to generate manual indexes," it "has attributes which make it easily manipulated by machine" (Williamson, 1984, p. 83). Dykstra explains how PRECIS strings are utilized for online subject retrieval:

...each term (or each single word in a compound term) in a PRECIS string is individually searchable using the standard Boolean operators. In other words, the search is *post-coordinate*, with PRECIS terms used as keywords. The terms in PRECIS strings, however, are of course *pre-coordinate*, having been synthesized by an indexer by means of the syntactic operators and codes. Thus each search on two or more individual terms in Boolean combinations yields the various syntactical arrangements in which those terms occur in the database. (1985, p. 235)

From the point of view of Boolean search techniques, it is safe to say that there is not much difference between LCSH and PRECIS. The retrieval rules are the same in both systems regarding use of the Boolean operators AND, OR, and NOT. Presumably, however, less false coordination would occur with PRECIS because with PRECIS "it is possible to display the various syntactic configurations in which the two terms appear, indicating how many documents are associated with each either *prior* to a listing of titles or as part of the title listing" (Dykstra, 1985, p. 236).

Weintraub (1979, p. 114) argues that in an on-line file, "users could follow the links between terms until they had constructed an appropriate string or partial string and then call up the corresponding lists of texts in the data file...." She also thinks that, in an online environment, we could learn more about the appropriate lead terms and forms of subject names in PRECIS by recording the terms preferred by the users and the way in which they develop appropriate query strings.

Data collected through transaction logs in online catalogs would be quite useful for LCSH, too. Since the contents of the "red book" are increasingly being put online, it would be interesting to study the transaction logs for subject searching on large scale online catalogs in order to understand how users perform or attempt to perform subject searching. This would certainly help to correct or change some of the archaic subject headings or inverted forms.

Like LCSH, PRECIS strings are also available online. All users of the British Library's BLAISELINE system can get online access to PRECIS index data. BLAISELINE's database consists of all the British Library's MARC records, from which the printed *BNB* is regularly produced (Dykstra, 1985, p. 234). The National Film Board of Canada's FORMAT system has been using PRECIS strings online, a facility provided by UTLAS, the company that is believed to be the first bibliographic utility to integrate PRECIS entries into its online subject authority file (Bidd et al, 1986; Cain, 1984).

Since 1985 LC has been providing UK MARC bibliographic records for its customers in the United States by converting UK MARC records into US MARC records (Library of Congress, 1986). As part of the conversion process, the PRECIS strings found in UK MARC records are also stored in US MARC records. PRECIS strings, however, are neither indexed nor available for online searching (OCLC, 1986) because indexing PRECIS strings would require further computer time and hence cost money. Moreover, such information would be available for only those records that are converted from UK MARC to US MARC, for LC has no intention of adding PRECIS strings to its own records. Furthermore, PRECIS is not a commonly used indexing language in U.S. libraries and librarians do not seem to be concerned with the issue.

Although PRECIS offers great potential in online subject retrieval, a great deal of experimental research needs to be conducted in order to see how this potential can be used to best advantage and to find out the relative merits of PRECIS in an online environment.

Related Research

Conducting research in this area is extremely difficult. The first issue is deciding on a sample. Most studies actually have not employed a random sample. This is partly due to the difficulty in providing indexing data in order for the titles to be compared, as the same titles need to be indexed by both LC and the British Library. Therefore, most studies are based on fewer than 100 titles available for comparison.

Second, comparison is usually limited to a single discipline such as social sciences, music, or, as in this study, library and information science. Relatively few studies have compared titles representing all disciplines. Yet, research has shown that some indexing languages work better for certain disciplines than others (Schabas, 1982).

Third, the lack of longitudinal studies in this area is a significant factor as it diminishes the degree of generalizability of the results of individual experiments. Indexing languages are very dynamic in nature. New features emerge while some disappear. Indexing languages are also sensitive to outside developments. For instance, the use of computers for indexing and the availability of cheaper storage facilities have opened up new horizons. Indexers are now able to assign more index terms without worrying about the cost of production, which significantly increases the number of access points for each title. The best example would probably be LCSH and PRECIS. Despite the fact that they were both designed for precoordinate searching they are now increasingly being used for postcoordinate searching. Yet, to the author's knowledge, a longitudinal study monitoring the development of an indexing language over the years is yet to be carried out.

Finally, indexing languages are designed for different purposes. For example, LCSH was designed for card catalogs while PRECIS was developed for the production of manual indexes using computers. Their syntactical features are considerably different from each other. It is for these reasons, among others, that several researchers have expressed their concerns regarding the merits of comparing two different indexing languages. Williamson (1984, p. 82) questions the objectivity of comparative studies. She thinks that attempting to compare LCSH and PRECIS is "analogous to comparing apples and oranges." Her suggestion is "to investigate the question of what characteristics indexing languages for on-line systems should have" (Williamson, 1984, p. 82). Svenonius (1981, p. 90) finds it a constructive approach to evaluate syntactic features of different indexing languages one by one. Winters

(1984) believes that testing "the two systems on real users to see which had the better retrieval performance" would be ideal; however, this requires "a user population equally familiar with the two systems" (p. 62).

Early experiments in 1970s concentrated on the retrieval effectiveness of indexing languages. A study conducted in the University of Wollongong in 1975-1976 aimed to compare LCSH and PRECIS with a view to assessing the possible application of the latter in Australian academic libraries. The primary concern of the Wollongong University study was "to examine the retrieval effectiveness and user acceptance of the two systems when applied in one-stage card format" (Hunt, 1978, p. 62). Retrieval effectiveness was tested in terms of recall and precision measures. The study showed no significant differences in retrieval performance between PRECIS and LCSH (Hunt et al., 1977).

Schabas (1982) carried out a study comparing the postcoordinate retrieval effectiveness of PRECIS and LCSH in a number of subjects. Weekly UK MARC tapes containing records of all books published in the UK with both LCSH and PRECIS indexing were chosen as the database for the study. Comparison was based on user relevance judgments for citations retrieval for the selective dissemination of information profiles. Schabas found that "PRECIS appears to provide significantly better recall than does LCSH for the social sciences data but not for the pure/applied sciences data" (Schabas, 1982, p. 35). She also found that augmenting LCSH and PRECIS with title words improved the performance significantly.

As Winters (1984, p. 62) pointed out, most other comparisons of LCSH and PRECIS have not really been based on a measure of retrieval performance. Richmond (1977) has compared PRECIS with LCSH and KWOC in terms of the number of entries provided. The sample used in this study was taken from a single issue of the *BNB* issued in December 31, 1975 and so books in all subjects were included. Her working hypothesis was that "quantitatively, PRECIS should make subject material more accessible than the LCSH" (Richmond, 1977, p. 101). She found that PRECIS provides more access points than LCSH. Gabbard (1985) carried out a study similar to Richmond's comparing the strengths and weaknesses of PRECIS and LCSH regarding books about music. She too found that "well over half of the documents have twice as many PRECIS entries as LCSH entries" (Gabbard, 1985, p. 195). Gabbard (1985) concluded that: "If the strengths of the selected subject entries of each system were combined, the result could be an

improvement over each system alone, especially in an online catalog with the capability of single and random word order searches" (p. 192).

Young (Improving, 1989, p. 719) compared printed music retrieval in PRECIS and LCSH and found that "multielement works are more easily and accurately accessed through PRECIS entries than throughout Library of Congress Subject Headings." Winters (1984, p. 61) conducted an experiment comparing PRECIS and LCSH for urban studies monographs and found that neither of the two systems is particularly successful in dealing with what he calls "multi-tiered works," those whose "intellectual subject(s)" differ from their 'ostensible subject(s).' He argued that supplementing traditional subject headings with some kind of abstract or summary would be an obvious solution. Godert (1980) has compared LCSH and PRECIS entries for mathematical literature with verbal expressions obtained from American Mathematical Society (AMS) notations printed inside the books. He concludes that an authoritative thesaurus, based on the rules of PRECIS and linked to the AMS classification scheme, is highly desirable.

Micco (1985, p. 41) examined the "see also" reference structure of LCSH, PRECIS and MeSH in medicine. She explored the "differences and similarities in the syndetic structures of these three systems in an effort to develop the best possible structure for use in a fully automated thesaurus with mapped displays." Cote (1979, p. 11) also compared the semantic and syntactic features of PRECIS with those of LCSH. De Bruin (1977) asked a group of reference librarians to evaluate the medical headings provided by PRECIS, LCSH and KWOC systems. PRECIS was preferred in this somewhat subjective evaluation. Bonnici (1980) offered his personal observations with regard to terminological aspects of LCSH and PRECIS.

PRECIS has been compared with other indexing languages, too. DeHart and Glazier (1984, p. 3) explored the applicability of a comparative retrieval effectiveness study "through a comparison of the subject analysis provided by the PRECIS system for fifty articles with the subject analysis provided for the same articles by three computer-based information sources: ERIC/CIJE, LLBA/Online, and PsycINFO." In her critique of Atherton's Subject Access Project being compared with PRECIS, Bett (1979, p. 147) expressed her concern about the relative merits of such studies comparing PRECIS, a contextual system, with systems "designed specifically for computer searching using Boolean logic with single-concept terms."

Since the present literature review is limited to comparative studies only, it should be noted that several studies evaluating either LCSH or PRECIS from a wide variety of aspects such as terminology, syndetic structure, and management have not been included.

LCSH AND PRECIS COMPARED

The purpose of this study is to compare LCSH and PRECIS, both quantitatively and qualitatively, for books in Library and Information Science (LIS). Retrieval effectiveness of respective systems is not measured, nor are syndetic structures; issues such as management and cost are not included. Comparison is based on a critical evaluation of LCSH and PRECIS indexing data for each title from several aspects: terminology, number of entries provided, indexing consistency, and exhaustivity and specificity.

Method

Books published in 1987 in the field of LIS (020 in Dewey) were chosen for comparison. All the titles published in 1987 in the UK have been found from the *BNB Subject Catalogue* (Volume 1), a total of 237 titles. As LC has been providing UK MARC records for its customers since early 1985, all 237 titles have been searched on OCLC database using the ISBN numbers provided. Of these 237, 217 titles were captured on OCLC. (The rest were either serials, microform copies, or audio-visual materials.)

Titles that were indexed both by LC and the British Library (BL) indexers have been identified. (In this study, the terms "indexing" and "cataloging" are used interchangeably.) The 040 field in the MARC format was used to identify the origin of cataloging information. For instance, UKM stands for UK MARC, i.e., cataloged by BL; and DLC stands for LC, i.e., cataloged by LC. By checking the 040 field in each record found on OCLC, it was possible to download all the records that were cataloged by both BL and LC. This was an important step in that the comparison was to be based on both LCSH and PRECIS indexing data. It turned out that there were 82 items. (Items that were cataloged according to LC practices by libraries other than LC, such as National Library of Medicine, for example are not included in the sample.)

It is interesting to note that more than half of the books on LIS (82 out of 217) published in the UK in 1987 had yet to reach US libraries (in 1989). Those that were cataloged by LC are, presumably, titles concurrently published in both countries. It is possible that the number of titles cataloged by both LC and BL could have been higher, had more time been elapsed between the publication date and the author's search on OCLC (April 1989).

For each of the 82 items to be compared, LCSH and PRECIS strings were recorded one by one. LCSH entries were readily available as the 600 (personal name), 610 (corporate name), 611 (conference, congress, meeting etc. name), 630 (uniform title), 650 (topical LCSH) and 651 (geographical LCSH) fields in the US MARC format are used exclusively for all kinds of subject headings. Examples of LCSH for each category are given below:

MARC field #	Type of LCSH	LCSH
600	Personal name	Powell, Lawrence Clark, 1906- Bibliography
610	Corporate name	European Economic Community—Bibliography
611	Meeting, etc. name	White House Conference on Library and Information Services
630	Uniform title	Index chemicus (Philadelphia, Pa.: 1977)
650	Topical	Libraries—Great Britain— Automation—Directories
651	Geographic name	Bengal (India)—Intellectual life

All PRECIS entries, however, had to be constructed by making use of the data available in the 886 field of the US MARC format. (Ordinarily this is done automatically by the computer.) In the UK MARC format the 690 field is used for PRECIS terms with codes. The 653 field in the US MARC format gives PRECIS terms only whereas 886 field includes the original PRECIS string with codes. Neither 653 nor 886 is indexed in the OCLC Online System. Some complex strings were verified in the *BNB Indexes* (Volume 2). An example of how to interpret a PRECIS string with codes is given below. A PRECIS string having the following terms and codes

\$z01030\$d Scotland
\$z21030\$a adult education
\$zs0030\$a role \$v of \$w in
\$z31030\$a public libraries

would produce three PRECIS entries:

Scotland

Adult education. Role of public libraries

Adult education. Scotland

Role of public libraries

Public libraries. Scotland

Role in adult education

The manipulation string consists of a series of alpha-numeric characters which direct the computer on how to interpret the data. For instance, **\$z01030\$d Scotland** is interpreted by the computer as follows:

- \$:** Subfield indicator
- z:** Theme interlink
- 0:** Role operator
- 1:** Lead term or not (1 = lead, 0 = non-lead)
- 0:** Substitution (0 indicates no substitution)
- 3:** Indicates if a term is required in qualifier or display
- 0:** Unused, always 0
- \$:** Subfield indicator. Indicates that after next character the manipulation codes will end
- d:** Indicates type of term, i.e., geographical place (Ramsden, 1981, pp. 106-7).
- \$v** and **\$w** are downwards and upwards reading connectives respectively (see: Austin, 1984; Richmond, 1981; Dykstra, 1985).

Quantitative Data on LCSH and PRECIS Entries

Table 1 shows, chronologically, the average number of LCSH and PRECIS entries obtained in previous studies. It is clearly difficult, and may well be deceptive, to generalize and attempt a sound conclusion on the basis of different studies employing different methods on the titles representing a wide variety of subjects.

Avram et al. (1967) studied LC records for the time span of 1950-1957 and 1957-1964 and found that the average number of LCSH was 1.2 and 1.3 respectively. McClure (1976) compared 500 titles taken from 1968

and 1973 cataloging records and obtained similar results: 1.2 LCSH per title in 1968 and 1.3 in 1973. Angell (1972) analyzed some 230,000 titles altogether in 1971 and found the average number of LCSH as 1.25. Richmond's (1977) sample of 78 titles produced almost the same figure (1.24) in 1975. O'Neill and Aluri (1981) looked at 33,455 records, both current and older, drawn from OCLC database and found the rate of subject heading assignment as 1.41 per title.

TABLE 1.
FINDINGS OF RELEVANT STUDIES CONCERNING THE AVERAGE NUMBER OF ENTRIES
IN LCSH AND/OR PRECIS

Year(s) sample covers	Sample size	No. of LCSH assigned		No. of PRECIS entries assigned		Source
		Total	Avg.	Total	Avg.	
1950-57	N/A	N/A	1.2	N/A	N/A	Avram <i>et al.</i> [1967]
1957-64	N/A	N/A	1.3	N/A	N/A	Avram <i>et al.</i> [1967]
1968	500	N/A	1.2	N/A	N/A	McClure [1976]
1971	228,000	285,000	1.25	N/A	N/A	Angell [1972]
1973	500	N/A	1.3	N/A	N/A	McClure [1976]
1974	311	N/A	2.29	N/A	N/A	Dhawan and Yerkey [1983]
1975	78	97	1.24	173	2.21	Richmond [1977]
1977	154	N/A	1.7	N/A	2.7	Subject [1978]
1900-78	33,455	47,036	1.41	N/A	N/A	O'Neill and Aluri [1981]
1978	327	N/A	2.59	N/A	N/A	Dhawan and Yerkey [1983]
1980-81?	N/A	N/A	2.54	N/A	3.40	Winters [1984]
1981	188	322	1.71	449	3.38	Gabbard [1985]
1983	11,865	26,827	2.26	N/A	N/A	Drabenstott <i>et al.</i> [1990]
1987	82	282	3.44	2.11	2.57	Present study

Studies done by Avram *et al.* (1967), McClure (1976), Richmond (1977) and O'Neill and Aluri (1981) included some titles with no LCSH assigned such as titles pertaining to fiction, which in turn diminished the average number of LCSH considerably. It appears that the average number of 1.2 to 1.4 subject headings per title persisted for more than 25 years.

Comparing the records cataloged in 1974 and 1978, Dhawan and Yerkey (1983) found that the rate of subject heading assignment was 2.29 and 2.59 per title respectively. They attributed the difference between their findings and those of others to the fact that the sample of some 650 records studied by Dhawan and Yerkey included very few titles (0.3%) with no subject headings, whereas in other studies the percentages of titles with no subject headings were as high as 20%. In a study done for a somewhat different purpose, Markey Drabenstott *et al.* (1990) found that the average number of subject headings per bibliographic record

was 2.26 in LC records cataloged in late 1983. Winters (1984) obtained a similar result of 2.54 LCSH per title for monographs in urban studies. Somewhat lower figures were found by LC itself (Subject, 1978) and Gabbard (1985). Gabbard studied 188 monographs in music cataloged in 1981.

The average number of subject headings found in this study is 3.44 for 82 titles in LIS published in 1987. This figure is considerably higher than those reported in previous studies.

As indicated before, one should be skeptical about a conclusion that is based on the findings of several studies differing in methods, disciplines, and document types. Dhawan and Yerkey (1983, p. 221) found that "the assignment of 'subject heading' is correlated with other variables 'time,' 'discipline' and 'document type.'" More specifically, when they compared the monograph and report titles in two samples cataloged in 1974 and 1978, they found that the "time" factor is the strongest variable and concluded that "the rate of subject heading assignment will further accelerate which in turn will step up the growth of the cataloging records in subject files." Titles cataloged before 1970, specifically, were assigned fewer LCSH per title. Indeed, for a century the basic subject indexing policy of LC has been such that "if possible, a book should receive only one subject heading that describes the subject matter of *the work as a whole*, or at least of topics treated extremely in it" (Boll, 1982, p. 10). However, this policy seems to have been abandoned recently as the studies show that LC more often than not assigns more than one subject heading. Only 11 percent of the titles in this study were assigned one subject heading. Titles with two, three, and four subject headings comprised more than 70 percent of all titles (24.4, 20.7, and 25.6 percent respectively). (See Table 2). Dhawan and Yerkey (1983, p. 216) found that about 40 years ago some 50 percent of titles were assigned only one subject heading. This percentage came down to about 20 percent in the 1970s while the percentage of two subject headings per title rose to 40 percent in the same time period. Titles with three subject headings constituted more than 25 percent of all titles in the 1970s while they were only five percent of all titles in the 1950s. One is inclined to conclude, though without further evidence, that the relatively higher number of subject headings (3.44) per title obtained in the present study may well be due to the "time" factor.

The relatively slow increase observed in the number of LCSH per title starting from the mid-1970s can further be attributed to two factors.

First, published works are getting more and more specific, interdisciplinary, and multitopical. Hence it is no longer possible to describe most works with only one subject heading. Dhawan and Yerkey (1983) found that the pattern of subject heading assignment seems to be influenced by discipline (i.e., domain-specific). The titles in engineering and technology were assigned more subject headings per title than those in social and physical sciences. It is, then, fairly reasonable to argue that titles in Library and Information Science, which is an interdisciplinary field closely associated with developments in technology (e.g., computer and telecommunications technology), tend to have assigned more subject headings per title. Nevertheless, further research is needed to find out if the assignment of subject headings is domain-specific.

Second, "there has recently been a series of perceptible moves away from the subject heading technique of economy of input and redundancy of searching towards the descriptor technique of redundancy of input for the sake of economy of searching" (Boll, 1982, p. 24). It is safe to say that the reason for such a fundamental change is that the use of computers in indexing makes it possible to assign more subject headings without necessarily increasing the costs. Thus, parallel to the widespread use of computers in cataloging in general and in subject cataloging in particular, a further increase in the rate of subject heading assignment should be expected. Moreover, the use of LCSH for subject access in online catalogs seems to have accelerated the pace, as it was suggested that LC should increase the number of LCSH assigned per each title in order to be more useful in online catalogs. The average number of 3.44 LCSH per title that was found in this study, then, should come as no surprise to us, for it may well reflect the results of most recent policy changes.

Studies reporting the evolution of PRECIS in regards to the average number of entries assigned per title are somewhat sketchier than those of LCSH. It seems that, unlike LCSH, there is no published study in the literature that reports the average number of PRECIS entries based on a large number of UK MARC records. Three studies, including the present one, found that the average is about 2.5 while the other two obtained a somewhat higher average of 3.4 (see Table 1). It can be argued that, due to the structure of the indexing language, the average number of PRECIS entries per title has been quite steady over the years, somewhere between 2.5 and 3.4 entries. In PRECIS, indexers usually come up with a meaningful string which describes the work as fully as possible. The lead terms (entries) are created by the permutations

of index terms that comprise the PRECIS string. Thus, unlike in LCSH, indexers cannot simply add a new string. (Although a maximum of four strings is allowed for each title, more than one string is the exception rather than the rule.)

As for comparative studies concerning LCSH and PRECIS, a total of five studies, including the present one, compared various features of both indexing languages. Richmond (1977, p. 104) found that for 78 items in all subjects "there were 173 PRECIS entries and 97 LCSH. In other words, there were almost twice as many PRECIS entries." As she points out, her figures can be deceptive since the sample included literary works for which LC does not assign subject headings. In a similar study conducted by Gabbard (1985, p. 195), similar results were obtained; for 188 works in music there were 449 PRECIS entries and 322 LCSH. Winters (1984, p. 66) found that there were, on average, 2.54 LCSH per item and 3.40 PRECIS entries for monographs in the field of urban studies. LC itself reported that for a population of 154 books, on average, there were 1.7 LCSH and 2.7 PRECIS entries (Subject, 1978, p. 154).

One of the common findings of the comparative studies discussed above is that the average number of PRECIS entries found in all four studies were 67% higher than those of LCSH. This study however, found that LCSH provided more entries than PRECIS, although it is difficult to explain what caused the rapid change between the two. It appears that the average has dropped considerably in PRECIS from about 3.4 to 2.57, suggesting that PRECIS also is a domain-specific indexing language. For instance, PRECIS did very well for monographs in urban studies and music by averaging about 3.4 entries. The average of LCSH, on the other hand, has sharply increased. The trends discussed earlier may well be the main reason behind this increase, however, the data reported here are not conclusive. What follows is a quantitative comparison of LCSH and PRECIS entries obtained in the present study.

Quantitative Comparison of LCSH and PRECIS Entries in Library and Information Science

The total number of items used for comparison in this study was 82. For 82 items, there were 282 LCSH and 211 PRECIS entries. On the average, LC assigned 3.44 subject headings per title (mode = 4; SD = 1.47) whereas the British Library assigned 2.57 PRECIS entries (mode = 2; SD = 1.15). In other words, LC assigned 25 percent more subject

entries than the British Library. Some 25 percent of the titles were assigned four subject headings per title, the highest single occurrence. About 82 percent of the titles had less than five LC subject headings. Most titles varied between one and four subject headings per title. The mode is two for PRECIS entries and some 39 percent of the titles were assigned two PRECIS entries. Ninety-four percent of the titles were assigned less than five PRECIS entries. The distribution of LCSH and PRECIS entries is given in Table 2.

TABLE 2
DISTRIBUTION OF LCSH AND PRECIS ENTRIES PER TITLE

<i>LCSH/PRECIS Entries per Title</i>	<i>LCSH</i>		<i>PRECIS</i>	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
0	--	--	--	--
1	9	11.0	12	14.6
2	20	24.4	32	39.0
3	17	20.7	26	31.7
4	21	25.6	7	8.6
5	5	6.1	3	3.7
6	7	8.6	1	1.2
7	1	1.2	1	1.2
--	--	--	--	--
11	1	1.2	--	--
--	--	--	--	--
13	1	1.2	--	--

Data were later classified in 5 groups:

Group 1: Number of LCSH exceeds number of PRECIS entries by 2-13

Group 2: Number of LCSH exceeds number of PRECIS entries by 1

Group 3: Number of LCSH and number of PRECIS entries are equal

Group 4: Number of PRECIS entries exceeds number of LCSH by 1

Group 5: Number of PRECIS entries exceeds number of LCSH by 2-7

The figures obtained for each group are given in Table 3.

For almost 60 percent of all the items, there were more LCSH than PRECIS entries. For 20.7 percent the number of LCSH and PRECIS

entries were equal. Only for 22 percent (21.9 percent to be exact) did PRECIS entries exceed the number of LCSH, a total of 18 items.

TABLE 3
COMPARISON OF LCSH AND PRECIS ENTRIES

<i>Group</i>	<i>N</i>	<i>Percent</i>
Group 1. LCSH exceeds PRECIS by 2-13	29	35.4
Group 2. LCSH exceeds PRECIS by 1	18	22.0
Group 3. Equal	17	20.7
Group 4. PRECIS exceeds LCSH by 1	11	13.4
Group 5. PRECIS exceeds LCSH by 2-7	7	8.5

Earlier it was indicated that LC, having done a feasibility study, dismissed the idea of using PRECIS on the basis of, among other things, the cost factor. LC claimed further that LCSH would provide more access points than PRECIS in an online catalog. To test LC's assertion, the total number of entry elements for both LCSH and PRECIS were compared. It was found that LCSH provided 61 percent more access points than PRECIS did. As the average number of LCSH per title in this study appeared to be higher than that of PRECIS (3.44 LCSH versus 2.57 PRECIS) this is not surprising. Such a comparison however, is somewhat misleading. Different subject headings for a given title may have a number of different entry elements whereas the number of entry elements in a PRECIS string (regardless of the number of lead terms) remains the same. In other words, the higher the number of LCSH assigned to a title, the more access points it has. The same is not true for PRECIS. Consider the following example:

Title: *The management of polytechnic libraries*

LCSH: **Libraries, University and college—Administration**

PRECIS: **Polytechnics. Great Britain**

“Libraries.” Management

Libraries. Polytechnics. Great Britain. Management

Management. Libraries. Polytechnics. Great Britain

Here there is only one subject heading for this particular title compared to three PRECIS lead terms. Yet the number of entry elements is the same (4) for both. (Great Britain counts as a single word.) The total number of entry elements in LCSH and PRECIS strings for 82 titles are 619 and 375 respectively.

Since the downloaded records from OCLC included original MARC

tags it was possible to find out what type of subject headings (i.e., topical, personal name, etc.) have been assigned most often. The overwhelming majority (94 percent) of LCSH assigned were in fact topical subject headings. "A topical heading represents the subject content of a work" (Chan, 1986, p. 60). On the average there were 3.2 topical headings per title. For example, a work about libraries and adult education in Scotland was assigned the heading **Libraries and adult education—Scotland**. Subject headings other than topical constitute less than six percent of 282 LCSH. There are 16 nontopical subject headings: 6 personal name, 5 corporate name, 3 uniform title heading and 2 geographic name subject headings. The distribution of subject headings by type is given in Table 4.

TABLE 4
DISTRIBUTION OF LCSH BY TYPE

<i>Type of LCSH</i>	<i>N</i>	<i>Percent</i>
Topical	266	94.3
Personal name	6	2.1
Corporate name	5	1.8
Uniform title	3	1.1
Geographic name	2	0.7
Total	282	100.0

In the present sample, there was an average of 3.1 unique main subject headings per title. By "unique" it is meant those subject headings that differ completely from each other for a given title, not just by subdivisions. Compared to O'Neill and Aluri's (1981, p. 66) average number of unique main subject headings of 1.3 for monographs in OCLC, there appears to be quite an increase in the number of unique subject headings applied.

The distribution of LCSH subdivisions has also been studied. The results are as follows: Unsubdivided subject headings accounted for about one-third (34.4 percent) of all subject headings in this study. More than 40 percent of all subject headings were once-subdivided, and the rest were multi-subdivided subject headings.

The distribution of LCSH subdivisions by type is given in Table 5. More than 70 percent of all subdivisions were topical and form subdivisions. Geographical subdivisions accounted for 23 percent. Only 3.4 percent were period subdivisions.

Addition of subdivision(s) to the main heading in LCSH is somewhat akin to what is called "differencing" in PRECIS. For more specific treatment of the document at hand, it is often necessary to indicate that the document deals with a subject within the confines of a given period or geographical location. Or, it may be of help to inform the user that the document is in a certain physical and/or intellectual form such as a bibliography or guide. In PRECIS, "operators" '0' and '6', and \$d can be seen as the equivalents of LCSH's place, form, and period subdivisions respectively (see Austin, 1984, Chapters 4, 9, and 13).

TABLE 5
DISTRIBUTION OF LCSH SUBDIVISIONS BY TYPE

<i>Type of Subdivisions</i>	<i>N</i>	<i>Percent</i>
Topical	87	37
Form	83	35
Place	56	24
Period	9	4
	2	
Total	235	100

What follows is a comparison between LCSH's subdivisions and the equivalents thereof in PRECIS (see Table 6). Topical subdivisions are not included in the comparison as they are not directly comparable with those in PRECIS, partly due to the difference in linguistic structures of topical subdivisions of indexing languages in question.

TABLE 6
COMPARISON OF LCSH SUBDIVISIONS AND PRECIS LOCATION, FORM, AND PERIOD OPERATORS/DIFFERENCES

<i>Type of Subdivision/Operator/Difference</i>	<i>LCSH</i>		<i>PRECIS</i>	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
Form	83	56.1	53	34.9
Place	56	37.8	82	53.9
Period	9	6.1	17	11.2
Total	148	100.0	152	100.0

If the topical subdivisions are not taken into account the number of subdivisions is almost the same for both systems. The distribution of subdivisions by type, however, shows a great deal of variation. While

form subdivisions were applied 35 percent more in LCSH than in PRECIS strings the percentage is vice versa for place subdivisions. PRECIS strings seem to have considerably higher period subdivisions than LCSH entries. (For more information on how PRECIS assigns period subdivisions, see the discussion after example 4 below.) That does not necessarily mean that both systems agreed to assign the same number or indeed the same type of subdivisions to the same titles. For example, one-by-one comparison of titles revealed that, out of 82 titles, 28 have LCSH subdivisions whereas 33 have PRECIS differencing operators. In regard to place subdivisions, 10 titles that had subdivisions in PRECIS had no subdivisions in LCSH. For five titles that had LCSH subdivisions there was no place designation in PRECIS strings. In other words, for 23 out of 82 titles both systems agreed to assign place subdivisions.

Qualitative Analysis and Comparison of LCSH and PRECIS Entries in Library and Information Science

This section analyzes and compares the qualitative features of subject indexing in LCSH and PRECIS. Rather than one-by-one analysis and comparison of each title, which is impractical in terms of space, titles having certain features were grouped together and discussion thereafter was based on those features.

LCSH has been criticized from several different points of view: theoretical, terminological, economic, practical, and so on. Criticisms have centered on issues such as LCSH:

- is dominated by broad, generic access points and lacks the capability of access to specific topics;
- fails to describe polytopical books adequately;
- terminology is "Victorian," or out of date;
- headings are inconsistent due to the nature of the controlled vocabulary.

In contrast, it has been argued that: PRECIS is more successful in dealing with specific and complex subjects; its indexing is based on natural language and therefore current; it is more consistent and predictable; and it provides more thorough analysis.

The main characteristics of LCSH and PRECIS were compared and summarized in Table 7.

The three works given below (Examples 1a, 1b, and 1c) reflect the most common characteristics of both indexing languages.

TABLE 7
LCSH AND PRECIS CHARACTERISTICS (SOURCE: HUNT, 1976, PART I,
PP. XXX-XXXI; CITED IN: SCHABAS, 1979, P. 20.)

LCSH	PRECIS
<ol style="list-style-type: none"> 1. Designed for use in the alphabetical subject catalogue of a specific library: a one-stage index in card format. Can be applied as two-stage index and in any physical format. 2. Entry format: single line entry. 3. A list of English language subject headings, published with thesaural structure. 4. Pre-coordinate system characterised by a term, consisting of one or more words, used as a specific subject heading. 5. Document specific in that as many headings are assigned as are necessary to cover the subject of the document. Each heading refers to one element of the document's subject content. 6. Indexer analyzes subject, selects appropriate subject headings. Headings require no manipulation by computer. 7. Headings may consist of: <ol style="list-style-type: none"> (a) a single word (b) a compound phrase, which may be direct or inverted to allow collocation with related subjects (c) two or more words joined by a conjunction (d) any of the above with subdivisions. 8. References are constructed from a published list which acts as an authority file. Published list has updating supplements, and appears from time to time in a new edition. 	<ol style="list-style-type: none"> 1. Designed for use as the index to the classified file of a specific national bibliography: a two-stage index in book format. Can be applied as one-stage in any physical format. 2. Entry format: three-part structure represented graphically as a two-line entry. 3. A set of working procedures for indexing, dependent on an open-ended natural language vocabulary. 4. Pre-coordinate system characterised by a string of verbal terms arranged in syntactic order using a system of role operators. These operators set each term in the context of other terms in the string. 5. Document specific in that a summary of the subject of the document is expressed as a string of terms, manipulated in such a way as to show relationships between concepts and to allow the whole subject to be expressed as each entry point. 6. Indexer analyses subject, writes string and directions for manipulation; these include choice of terms as entry points. Although designed for computer manipulation and storage, entire process may be carried out manually. 7. Terms used as entry points are drawn from words in a string which are coded with any one of the main role operators. When a term is led, other terms in the string are shunted to indicate the context in which the lead term is to be read. A term may be a single word or a compound phrase. 8. References are constructed by an indexer who creates an authority file of terms. Each lead term is treated in isolation from other terms in the string. Specific codes and rules exist for machine manipulation of references. These differ from those used at the indexing stage for writing strings.

Example 1a

Allan, Barbara and Barry Strickland-Hodge. *How to use 'Psychological Abstracts' and 'Biological Abstracts'*

LCSH: Psychology—Abstracting and indexing

Biology—Abstracting and indexing

Psychological Abstracts

Biological Abstracts

Psychology—Bibliography—Methodology

Biology—Bibliography—Methodology

Abstracting and indexing

Biology

Psychology

Research—Methods

Information services—United States

PRECIS: Psychology

Documents on psychology. Abstracts journals: '*Psychological abstracts*'. Use *Manuals*

Abstracts journals. Psychology

'*Psychological abstracts*'. Use—*Manuals*

'Psychological abstracts'

Use—*Manuals*

Biology

Documents on biology. Abstracts journals: '*Biological abstracts*'. Use—*Manuals*

Abstracts journals. Biology

'*Biological abstracts*'. Use—*Manuals*

'Biological abstracts'

Use—*Manuals*

Example 1b

Strickland-Hodge, Barry. *How to use 'Index Medicus' and 'Excerpta Medica'*

LCSH: Medicine—Abstracting and indexing

Index Medicus

Excerpta Medica

Medicine—Bibliography—Methodology

MEDLARS-MEDLINE information system — United States

Abstracting and indexing

PRECIS: Medicine

Information retrieval services: Index medicus & Excerpta medica. Use—*Manuals*

Information retrieval services. Medicine

Index medicus & Excerpta medica. Use *Manuals*

Index medicus

Use—*Manuals*

Excerpta medica

Use—*Manuals*

Example 1c

End user searching in the health sciences

LCSH: Information storage and retrieval systems—Medicine
Information storage and retrieval systems—Public health
Medical libraries—Automation
Libraries, Public health—Automation
Library catalogs and readers
Catalogs, On-line
Information retrieval
On-line bibliographic searching
End-user computing
Automatic data processing
Information systems
Libraries, Medical
Online systems

PRECIS: Medicine

Online bibliographic information retrieval services.

Searching

Information retrieval services. Medicine

Online bibliographic information retrieval services. Searching

Bibliographic information retrieval services. Medicine

Online bibliographic information retrieval services. Searching

Online bibliographic information retrieval services. Medicine

Online bibliographic information retrieval services. Searching

Searching. Online bibliographic information retrieval services. Medicine

The first thing that draws immediate attention is that each work has been assigned a considerably higher number of subject headings by LC. The total number of headings assigned for three works is 30. This is indeed very unusual for LCSH, for it has been until recent years LC's policy to assign one, or two at most, subject headings for each document. (The average is 3.44 in this study.) With the above performance LCSH seems to have acted more like a descriptor system than a "whole document" indexing system. As Boll (1982) suggests, the increase in the number of LCSH assigned could be the result of a "hidden trend" in LCSH. It could also be that since LCSH began being used in online catalogs, the average number of subject headings assigned per title has been increasing. Furthermore, the examples chosen are somewhat extreme cases, and the works indexed might have required this kind of subject analysis.

The first work (Example 1a) deals with the two reference sources in psychology and biology. So does the second work (Example 1b) in medicine. The fact that the need to describe three subjects and four reference sources specifically mentioned therein may have been a factor

that increased the number of subject headings assigned. What about the third work (Example 1c) which has 13 subject headings assigned to it? One tends to think that each chapter in the book has been given a separate subject heading.

However difficult it may be to believe that LC assigned 13 subject headings for a certain work, a closer look at subject headings assigned for these three works reveals more interesting findings. It is a well-known fact that LC does subject indexing not only for its own collection but also for the collections of all kinds of libraries, no matter how small or large their collections. Trying to satisfy the different subject indexing needs of a wide variety of libraries is difficult, to say the least. The middle-of-the-road approach that seems to have been taken by LC thus appears to be the best way to deal with the issue. For example, what advantage has been gained in assigning broad subject headings such as **Biology, Psychology, Information Retrieval, Information Services—United States** to the works given in Example 1? A few users would undoubtedly look under these terms to find relevant items. It would, however, occur to them very early in their search that scanning all the titles might take quite a long response time, even in the card catalog of a small academic library.

Although PRECIS too has entries with **Biology, Psychology, and Medicine**, there is a major difference between PRECIS and LCSH. In PRECIS, users can easily scan through all the specific terms under a general term in a printed index, quickly decide on the level of specificity of their search, and then check the works under that level of specificity. LCSH does not work that way in card catalogs as the user has to scan through all the cards first. It is only then that s/he will be able to see that there is a more specific heading under which that subject can be searched. However, as Gabbard points out, "PRECIS would not be a much better solution than LCSH when used in card catalogs or in any catalog where full bibliographic information accompanies each subject entry" (Gabbard, 1985, p. 205).

In order to see how useful broad terms are in an online catalog, some of the subject headings were searched on MELVYL, University of California's online catalog. (MELVYL is the registered trademark of the Regents of the University of California.) An attempt to search under **Psychology** and **Biology**, for example, ended up with a "peak hour restriction" message from the system which simply says one is not allowed to search under these general terms since they "would retrieve over 10,000 records and would slow down the system." Instead, the system

suggested that such broad subject headings should either be made more specific before searching or the search should be tried during the evening or early morning. Consequently, it was found that 40,960 and 11,837 titles were posted under **Psychology** and **Biology** respectively (June 1990). For several subject headings such as Information systems, **Information Retrieval** and **Information Services**, a “long search” message was received, meaning that these subject headings “will retrieve over 1,000 records and take a long time to complete.” Nevertheless these and similar subject headings were searched on MELVYL. Needless to say, searching under such general headings is hardly useful at all, not to mention the painfully long response times. Table 8 gives some of the general LCSH and their postings on MELVYL as of June 1990.

TABLE 8
SOME GENERAL LIBRARY OF CONGRESS SUBJECT HEADINGS AND THEIR POSTINGS
ON MELVYL, UNIVERSITY OF CALIFORNIA ONLINE CATALOG (AS OF JUNE 1990)

<i>LCSH</i>	<i>Number of Postings</i>
Psychology	40,960
Biology	11,837
Information systems	5,129
Learning	5,129
Information services	4,287
Information retrieval	4,167
Music—Bibliography	3,524
Library science	2,645
Information science	1,226
Information services—United States	1,192
Libraries—Automation	1,022
Database management	1,059
Library administration	738
Libraries—Addresses, essays, lectures	560
Library cooperation	455
Libraries, Medical	446
Libraries and state	432
Online bibliographic searching	342
Librarians—United States	254

The third work (Example 1c) is a typical example of how LC treats multitopical works. This is an edited work that includes a number of articles in relation to specific aspects of online searching in the health sciences. LC apparently wanted the subject analysis to be as comprehensive as possible, thereby assigning one subject heading for each specific, or general, topic covered in that work. LC did this not by assigning the single most specific subject heading, which clearly

disregards Cutter's specific entry rule, but by treating a multitopical work as a multielement work. Arguably this would have been a welcome development had LC treated all similar works in the same way. There are, however, some other edited works in the sample that, in the eyes of LC indexers, did not deserve such a thorough analysis. (For counter-examples, see titles in: Group 1, #1; Group 2, #9; Group 3, #8 and #9; and Group 5, #2 in the Appendix.)

The PRECIS string for this work, on the other hand, is as specific as one might expect and has five lead terms as access points. Nonetheless, both systems failed to mention "end-user searching" directly.

The lack of a readily available thesaurus in PRECIS has been criticized as some form of consistency in the strings is desired. Yet it was shown that PRECIS indexers in general are more consistent in building strings than their colleagues at LC where a bulky subject headings list is in use.

PRECIS has two different strings for the works given under Examples 1a and 1b even though the titles of the works appear to be quite similar to each other. The first of the preferred strings emphasizes that the documents are on psychology (or biology) while the second emphasizes information retrieval services in medicine. It is hard to predict what made PRECIS indexers think that the works required dissimilar strings. Note that the second topic (biology) and the reference source (*Biological Abstracts*) have been nicely alternated in the first string thereby producing a total of six lead terms. And all PRECIS entries are in natural language order.

The two PRECIS strings are slightly inconsistent regarding typographical codes, too, though it is certainly of no importance in terms of retrieval. The names of the reference sources in the first string are given in between single quotation marks (i.e., 'Biological abstracts') and the form of the work is in italic (i.e., *-Manuals*). Neither is the same in the second string.

There are a number of inconsistencies in LCSH as well. If general subject headings such as **Psychology** and **Biology** were deemed to be necessary for the first work (Example 1a), why is it that **Medicine** was not assigned as a perfectly legitimate subject heading for the second work (Example 1b)? If the first work had to have assigned **Research—Methods and Information services—United States**, why is it that neither was assigned for the second work? Regardless of whether one agrees or disagrees in assigning broad terms to the above-mentioned works, intra-indexer consistency appears to be quite low even for very similar titles.

Example 1c exhibits some of the typical characteristics of terminology used in LCSH. It is not surprising to see that subject headings in both direct and inverted forms can be found in LCSH. As Boll explains, "in the 1960s . . . LC developed a tendency to establish new subject headings in direct form, that is in the form of natural language. In the early 1970s, the policy changed back to using direct and indirect form and dash-on subdivisions, as the file structure seemed to require" (Boll, 1982, p. 16). Nevertheless, it is quite interesting to note that LC assigned both direct and inverted order forms of a subject heading for the same title: **Libraries, Medical** and **Medical libraries—Automation**. Indirect forms do not make so much difference in online catalogs with Boolean searching capabilities (both **Libraries, Medical** and **Medical libraries** retrieved 446 items on MELVYL). But they certainly do in card catalogs. It would be interesting to study how the titles are split up under direct and indirect forms of subject headings in card catalogs.

Some of the direct and indirect subject headings found in the present study are as follows: **Libraries, Medical**; **Medical libraries**; **School libraries**; **Public libraries**; **Libraries, University and college**; **Business libraries**; **Special libraries**; **Technical libraries**; **Libraries, Technical college**; **Prison libraries**; **Small libraries**; and **Libraries, Public health**.

It might simply be an error that LC retains two different spellings of "online," a one with hyphen the other without (i.e., **Catalogs, On-line** but **Online systems**). PRECIS retains the hyphen.

Example 2a

Vickery, B.C. and Vickery, A. *Information science in theory and practice*
LCSH: **Information science**
PRECIS: **Information science**

Example 2b

Veit, Fritz. *Presidential libraries and collections*
LCSH: **Presidents—United States—Archives**
PRECIS: **Presidential libraries. United States**

The number of entries for the above works (Example 2a and 2b) were limited to the absolute minimum. For the first work (Example 2a), which seems to be a general work and probably touches upon several other specific topics too, both systems assigned the same index term (**Information science**). The index term assigned is too broad. For the second work (Example 2b) LC preferred dash-on subdivisions whereas

PRECIS opted for a direct entry (**Presidential libraries**). Note that LC felt more comfortable with **Archives** as a subdivision even though the title clearly indicates that the work is on “libraries.”

Example 3a

Libraries in the '80s: papers in honor of the late Neal L. Edgar

LCSH: **Library science—Addresses, essays, lectures**

Libraries—Addresses, essays, lectures

Edgar, Neal L., 1927-

PRECIS: **Librarianship**

Example 3b

Wertsman, Vladimir F. *The librarian's companion: a handbook of thousands of facts and figures on libraries, librarians, books, newspapers, publishers, booksellers*

LCSH: **Library science—Miscellanea**

Libraries—Miscellanea

Books and reading—Miscellanea

Book industries and trade—Miscellanea

PRECIS: **Librarianship**

Example 3c

Harrod, Leonard Montague. *Harrod's librarians' glossary of terms used in librarianship, documentation, and the book crafts, and reference book*

LCSH: **Library science—Dictionaries**

Information science—Dictionaries

Bibliography—Dictionaries

Book industries and trade—Dictionaries

PRECIS: **Librarianship**

-Encyclopaedias

Gabbard found that “The more broad and generic a work, the lower the number of PRECIS entries” (Gabbard, 1985, p. 195). Although the present study did not replicate her findings, it is obvious that PRECIS strings for Examples 3a, 3b and 3c are too general. For the first two works (Examples 3a and 3b) LC also offers broad subject headings, but the addition of subdivisions to main headings are helpful. LC assigned a personal name subject heading for the first work (Example 3a), which is an invaluable access point for those seeking specific information about that person. LC treated the third work (Example 3c) as a multielement work because it is difficult to provide a single specific entry for it. With regards to form subdivisions of entries that were assigned to the third work, LC opted for **Dictionaries** whereas PRECIS preferred **Encyclopaedias**.

From the terminological point of view, both systems use **Information science** while they disagree on the use of **Library science** or **Librarianship**. PRECIS always uses **Librarianship** whereas LC prefers **Library science**.

Example 4a

Kabir, Abulfazal M. Fazle. *The libraries of Bengal, 1700-1947*

LCSH: **Libraries—India—Bengal—History**
Bengal (India)—Intellectual life

PRECIS: **India**

Bengal. Libraries, 1700-1947

Bengal. India

Libraries, 1700-1947

Libraries. Bengal. India

1700-1947

Example 4b

Bush, Sargent Jr. and Carl J. Rasmussen. *The Library of Emmanuel College, Cambridge, 1584-1637*

LCSH: **Emmanuel College (University of Cambridge). Library—History**
Libraries, University and college—England—Cambridge (Cam-
bridgeshire)—History—1400-1600

Libraries, University and college—England—Cambridge (Cambridge-
shire)—History—17th-18th centuries

PRECIS: **Cambridgeshire**

Cambridge. Universities. Colleges. Libraries: Emmanuel College.
Library, to 1637

Cambridge

Universities. Colleges. Libraries: Emmanuel College. Library, to 1637

Libraries. Colleges. Universities. Cambridge

Emmanuel College. Library, to 1637

Colleges. Universities. Cambridge

Libraries: Emmanuel College. Library, to 1637

Emmanuel College. Library, to 1637

Earlier it was indicated that PRECIS strings had a considerably higher number of dates attached to the strings than did LCSH. In other words, LC uses period subdivisions less sparingly. PRECIS takes a pragmatic approach to dates. Dates are added to the strings whenever available. This generosity sometimes works quite well, but at other times does not. For instance, in examples 4a and 4b, both titles include the exact dates. Yet PRECIS indexers chose an exact date for the first work (*1700-1947*), but not for the second. They only added (*to 1637*) to the second string, even if the title suggests that the work covers the time period from 1584 to 1637.

Austin (1984) opposes using specific dates and warns that: "Dates should be stated only when they are significant, and the policies should favour the use of *block dates*, such as centuries or important political periods, as much as possible" (p. 67). None of the dates in PRECIS strings in this study complied with that statement. Austin also noted that "strings which differ only in their dates will generate different display lines under common headings, causing a scatter of closely related materials." Gabbard (1985, pp. 196-67) also discusses some of the problems that chronological subdivisions may create in regard to interfiling. LC, on the other hand, divides the dates most of the time by century and is fairly consistent in assigning them.

Examples 4a and 4b were chosen because they also indicate how it is that both systems differ in applying geographical subdivisions. PRECIS entries may start with place names as lead terms. The application of this policy of course very much depends on how discriminative a certain place name is as a lead term. It also depends on in which country is the indexing done. For example, both United States and Great Britain are bad candidates as lead terms in *BNB*. Place names such as Bengal, India, and Cambridge, Cambridgeshire are on the other hand perfectly discriminative place names in *BNB*. One of the main subject headings in *LCSH* also starts with **Bengal** (Example 4a), but not with **India**. Neither Cambridge nor Cambridgeshire was acknowledged in the subject headings of the second work (Example 4b).

Some of the place names that became lead terms in PRECIS entries, but not main subject headings in *LCSH*, were: Cambridge, Cambridgeshire, East Anglia, Hull, Humberside, India, Scotland and Wales. Most of the abovementioned place names obviously appeal more to a British user than anyone else.

Example 5a

Keaveney, Sydney Starr. *Contemporary art documentation and fine arts libraries*

LCSH: Art libraries

Art, Modern—20th century—Documentation

Art, Modern—20th century—Information services

Art, Modern—20th century—Bibliography—Methodology

Communication in art

PRECIS: Art libraries. United States

Example 5b

Coyle, William. *Libraries in prisons: a blending of institutions*

LCSH: Prison libraries

PRECIS: **Prisons. United States**
 Libraries, 1900-1986
 Libraries. Prisons. United States
 1900-1986

The use of geographical subdivisions would be most useful especially in online catalogs with Boolean search capabilities. Consider the above examples (5a and 5b). A user seeking specific information on either art libraries or prison libraries in the United States will be much less satisfied with LC entries than those of PRECIS. It is difficult to understand, however, why PRECIS did not use *Prison libraries* as a direct form in its entries, when forms such as **Art libraries** and **Music libraries** are perfectly acceptable.

Example 6

Westlake, Duncan R. *Geac: a guide for librarians and systems managers*
LCSH: **Geac (Computer system)**
 Libraries—Automation
PRECIS: **Libraries**
 Applications of computer systems
 Computer systems
 Applications in libraries

The work given in Example 6 was assigned both specific and broad LC subject headings (violation of the specific entry rule). **Geac (Computer system)** is an unusually specific subject heading for LC while **Libraries—Automation** is perhaps one of the most overused headings in LCSH. The first heading is to the point for specific information about *Geac*. Both PRECIS entries, on the other hand, are too general.

Example 7

Lights in the darkness: Scottish libraries and adult education
LCSH: **Libraries and adult education—Scotland**
PRECIS: **Scotland**
 Adult education. Role of public libraries
 Adult education. Scotland
 Role of public libraries
 Public libraries. Scotland
 Role in adult education

LC assigned a single subject heading for the above work (Example 7) by bringing two facets (“libraries” and “adult education”) of the work together, which is rarely practiced. In this study, only a few titles were treated as such: **Libraries and state**, **Libraries and booksellers**, **Libraries and readers**, **Information services and state**, **Library catalogs and readers**.

The entry, indeed, looks like a PRECIS-style entry (**Libraries and adult education—Scotland**). As mentioned above, LC tends to treat multi-element works as multi-topical or general works. This characteristic “distinguishes the LC system on a theoretical level from the systems of modern subject analysis based on the principles of synthetic or faceted classification as exemplified by PRECIS” (Mischo, 1982, p. 107).

Example 8

Mahoney, Ellen. *Ready, set, read: best books to prepare preschoolers.*

LCSH: **Children—Books—Reading**

Reading (Preschool)

Bibliography—Bestbooks—Children’s literature

Children’s literature—Bibliography

PRECIS: **Children’s books**

Books for children, to 8 years. Selection *-For parents*

Selection. Books for children, to 8 years

-For parents

Parents

Children’s books: Books for children, to 8 years. Selection *-For parents*

Some of the PRECIS strings are complex and long. Gabbard (1985, p. 205) observes that “the extremely long PRECIS strings. . . which by their length obscure their major subject elements, would be frequently less satisfying than their LCSH counterparts during a subject search.” Consider the PRECIS entries in Example 8. The work is about book selection for children by their parents. PRECIS apparently wanted to make it clear by naming the target users, namely parents. Yet the meanings of all entries are rather difficult to grasp at first sight. The last part of the entries (*-For parents*) seems to blur the meaning rather than clarify it.

Example 9a

Microcomputer software for information management: case studies

LCSH: **Data-base management**

Microcomputers—Programming

Computer software

PRECIS: **Libraries. Great Britain**

Library & information services. Applications of microcomputer systems. Software packages

Information services. Great Britain

Library & information services. Applications of microcomputer systems. Software packages

Microcomputer systems. Great Britain

Software packages. Applications in libraries & information services

Software packages. Microcomputer systems. Great Britain

Applications in libraries & information services

Example 9b

UNIMARC manual

LCSH: MARC system—Format

PRECIS: Documents

Cataloguing. Machine-readable files. International exchange.

Formats: UNIMARC -Manuals

Cataloguing. Documents

Machine-readable files. International exchange.

Formats: UNIMARC -Manuals

Machine-readable files. Cataloguing. Documents

International exchange. Formats: UNIMARC -Manuals

Exchange. Machine-readable files. Cataloguing. Documents

International exchange. Formats: UNIMARC -Manuals

International exchange. Machine-readable files. Cataloguing.

Documents

Formats: UNIMARC -Manuals

Formats. International exchange. Machine-readable files. Ca-

taloguing. Documents

UNIMARC -Manuals

UNIMARC

-Manuals

PRECIS offers a thorough subject analysis for the second work (Example 9b) while LC provides the absolute minimum including the unspecific subject heading. For that matter, LC has somewhat failed to describe the content of the work correctly, although the two formats (MARC and UNIMARC) are closely interrelated. The subject headings that the first work (Example 9a) have been assigned are rather broad. PRECIS entries, on the other hand, specifically state the relationships between index terms. For an unknown reason, "information management" is yet to be a legitimate access point in either LCSH or PRECIS entries. (Information resources management is in use in LCSH though.)

Example 10a

Tedd, Lucy A. *Facsimile in libraries project*

LCSH: Facsimile transmission—Library applications

Inter-library loans—Great Britain—Technological innovations

Telecommunication in libraries—Great Britain

Library information networks—Great Britain

PRECIS: Libraries

Applications of facsimile transmission

Facsimile transmission

Applications in libraries

Example 10b

Conservation of library and archive materials and the graphic arts

LCSH: Library materials—Conservation and restoration
Archival materials—Conservation and restoration
Graphic arts—Conservation and restoration
Books—Conservation and restoration
Art—Conservation and restoration
Paper—Preservation

PRECIS: Libraries
Stock. Conservation
Conservation. Stock. Libraries

LC appears to be superior in its approach for the two works given above. LC has not only assigned a specific subject heading (**Facsimile transmission—Library applications**) for the first work (Example 10a), which is very similar to the PRECIS string, but also provided a comprehensive analysis of the title by mentioning interlibrary loan, telecommunication, and network aspects. This is true for the second work, too (Example 10b). Mention has been made of the specific type of library materials (i.e., books, graphic arts, paper, art, archival materials) covered in the book. Such an approach would certainly increase recall, thereby providing more access points in online catalogs.

PRECIS entries for the second work include broad terms only and do not elaborate on specific library materials.

CONCLUSIONS

On the basis of quantitative and qualitative analyses of subject indexing provided by LCSH and PRECIS for 82 titles in Library and Information Science, the major findings of this study can be summarized as follows.

The number of subject headings provided by LC seems to be increasing. The present study revealed that LC assigns 34 percent more subject entries than PRECIS. The average number of LC subject headings per title is 3.44 whereas the average is 2.57 for PRECIS entries. The figures suggest that LC has developed, or is in the process of developing, a tendency towards assigning more subject headings in order to be useful in online catalogs. Such a policy change will increase access points for a title which in turn will further enhance recall in online catalogs. It should be borne in mind, however, that increasing recall in large online catalogs often causes “information overload.”

Compared to place and period subdivisions, the overwhelming majority of subdivisions in LCSH are topical and form subdivisions (72 percent).

Period subdivisions are much less frequently used in LCSH (4 percent). PRECIS assigned more place and period "differencing operators" than the equivalent LCSH subdivisions.

The findings of this study, to some extent, support and strengthen Boll's observations. He indicated that LC has changed its "subject indexing technique of economy of input and redundancy of searching" (Boll, 1982, p. 24) and started to assign more headings. Increase in the average number of subject headings assigned per title, the treatment of multielement works as multitopic works, and assigning both specific and broad headings for the same title are but a few indicators of such a policy change.

As for the terminology, PRECIS is current and up to date as the index terms are usually taken from the works themselves. Furthermore, PRECIS has no rigid controlled vocabulary. LCSH's terminology, on the other hand, is bound with the contents of the three-volume "red-book" and strictly controlled. Nevertheless, both systems exhibit some inconsistencies in building subject entries. Slight changes may occur in PRECIS strings for similar works. Use of both direct and indirect forms of subject entries in LCSH is here to stay. Having read numerous criticisms about the terminology in LCSH, the author was surprised to see that inconsistencies turned out to be less than one would have expected. Making generalizations on the basis of a small scale study, however, would be unjust.

In conclusion, it can be said that both systems have their strengths and weaknesses. While LCSH seems to be in the process of significant changes, both systems appear to be developing for the good. The increasing subject access requirements of (online) catalog users will always be the *raison d'etre* of such developments.

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APPENDIX

Contents of groups 1 to 5 summarized in text

Group 1

Cases where there are 2-13 more LCSH entries than PRECIS

<i>Author or title</i>	<i>LCSH</i>	<i>PRECIS</i>	<i>Difference</i>
1. Libraries in the '80s	3	1	2
2. Wertsman, Vladimir F.	4	1	3
3. Harrod, Leonard M.	4	1	3
4. Internationalizing ...	7	3	4
5. Powell, Lawrence C.	4	2	2
6. Hopkins, M.	6	3	3
7. Kirby, John	5	2	3
8. Allan, Barbara	11	6	5
9. Strickland-Hodge, Barry	6	4	2
10. End user searching ...	13	5	8
11. Burn, Janice	4	1	3
12. Brophy, Peter	6	3	3
13. Makepeace, Chris E.	4	2	2
14. Cook, Michael	4	2	2
15. Pinion, Catherine F.	5	3	2
16. Markey, Karen	6	3	3
17. Personnel issues ...	5	3	2
18. Tedd, Lucy A.	4	2	2
19. Vickers, Stephen	6	2	4
20. Intner, Sheila S.	4	2	2
21. Hickin, Norman	5	3	2
22. Conservation of library ...	6	2	4
23. Keaveney, Sydney Starr	5	1	4
24. Bryant, E. T.	3	1	2
25. Stevens, Norman D.	4	2	2
26. Public libraries ...	4	2	2
27. Whiteman, Philip	3	1	2
28. Shavit, David	4	2	2
29. Tallman, Johanna E.	3	1	2
	148	66	82

1. Libraries in the '80s: papers in honor of the late Neal L. Edgar

LCSH: Library science—Addresses, essays, lectures
 Libraries—Addresses, essays, lectures
 Edgar, Neal L., 1927-

PRECIS: Librarianship

2. Wertsman, Vladimir F. The librarian's companion: a handbook of thousands of facts and figures on libraries, librarians, books, newspapers, publishers, booksellers

LCSH: Library science—Miscellanea
Libraries—Miscellanea
Books and reading—Miscellanea
Book industries and trade—Miscellanea

PRECIS: Librarianship

3. Harrod, Leonard Montague. Harrod's librarians' glossary of terms used in librarianship, documentation, and the book crafts, and reference book

LCSH: Library science—Dictionaries
Information science—Dictionaries
Bibliography—Dictionaries
Book industries and trade—Dictionaries

PRECIS: Librarianship
—*Encyclopaedias*

4. Internationalizing library and information science education: a handbook of policies and procedures in administration and curriculum

LCSH: Library education
Information science—Study and teaching
International librarianship
Libraries and state
Information services and state
Library schools—Administration
Library schools—Curricula

PRECIS: Librarians
Professional education. International aspects
Professional education. Librarians
International aspects
International aspects. Professional education.
Librarians

5. Powell, Lawrence Clark. Life goes on: twenty more years of fortune and friendship

LCSH: Powell, Lawrence Clark, 1906- Biography
Powell, Lawrence Clark, 1906- Bibliography
Authors, American—20th Century—Biography
Librarians—United States—Biography

PRECIS: Librarianship. United States
Powell, Lawrence Clark —*Biographies*
Powell, Lawrence Clark. Librarianship. United States
—*Biographies*

6. Hopkins, M. The business use of European Communities information in the United Kingdom

LCSH: European Economic Community—Information services—
European Economic Community countries
European Economic Community—Information services—Great
Britain
Business—Information services—European Economic Community
countries
Business—Information services—Great Britain
European Economic Community—Bibliography
Information storage and retrieval systems—European Economic
Community

PRECIS: **European Community**
Information services. Use by business firms
Information services. European Community
Use by business firms
Business firms
Use of European Community information services

7. Kirby, John. Creating the library identity: a manual of design

LCSH: Public relations—Libraries
Communication in library science
Industrial design coordination
Libraries—Forms
Library signs

PRECIS: **Libraries**
Corporate identity
Corporate identity. Libraries

8. Allan, Barbara and Barry Strickland-Hodge. How to use *Psychological Abstracts* and *Biological Abstracts*

LCSH: Psychology—Abstracting and indexing
Biology—Abstracting and indexing
Psychological abstracts
Biological abstracts
Psychology—Bibliography—Methodology
Biology—Bibliography—Methodology
Abstracting and indexing
Biology
Psychology
Research—Methods
Information services—United States

PRECIS: **Psychology**
Documents on psychology. Abstracts journals: 'Psychological
abstracts'. Use —*Manuals*
Abstracts journals. Psychology
'Psychological abstracts'. Use —*Manuals*
'Psychological abstracts'

Use —*Manuals*
Biology
Documents on biology. Abstracts journals: 'Biological abstracts'.
Use —*Manuals*
Abstracts journals. Biology
'Biological abstracts'. Use —*Manuals*
'Biological abstracts'
Use —*Manuals*

9. Strickland-Hodge, Barry. How to use *Index Medicus* and *Excerpta Medica*

LCSH: Medicine—Abstracting and indexing
Index Medicus
Excerpta Medica
Medicine—Bibliography—Methodology
MEDLARS-MEDLINE information system—United States
Abstracting and Indexing

PRECIS: **Medicine**
Information retrieval services: Index medicus & Excerpta
medica. Use. Manuals
Information retrieval services. Medicine
Index medicus & Excerpta medica. Use. Manuals
Index medicus
Use. Manuals
Excerpta medica
Use. Manuals

10. End user searching in the health sciences

LCSH: Information storage and retrieval systems—Medicine
Information storage and retrieval systems—Public health
Medical libraries—Automation
Libraries, Public health—Automation
Library catalogs and readers
Catalogs, On-line
Information retrieval
On-line bibliographic searching
End-user computing
Automatic data processing
Information systems
Libraries, Medical
Online systems

PRECIS: **Medicine**
On-line bibliographic information retrieval services. Searching
Information retrieval services. Medicine
On-line bibliographic information retrieval services. Searching
Bibliographic information retrieval services. Medicine
On-line bibliographic information retrieval services. Searching
On-line bibliographic information retrieval services. Medicine
On-line bibliographic information retrieval services. Searching

**Searching. On-line bibliographic information retrieval services
Medicine**

11. Burn, Janice and Mike O'Neil. Information analysis

LCSH: Management—Information services
Business—Information services
Information resources management
Decision making—Mathematical models

PRECIS: **Business information**
Provision

12. Brophy, Peter. Management information and decision support systems in libraries

LCSH: Library administration—Data processing
Libraries—Automation
Communication in library administration—Data processing
Library administration—Decision making—Data processing
Management information systems
Decision support systems

PRECIS: **Libraries**
Management. Information systems
Management. Libraries and information systems
Information systems. Management. Libraries

13. Makepeace, Chris E. Ephemera: a book on its collection, conservation and use

LCSH: Libraries—Special collections—Printed ephemera
Printed ephemera—Conservation and restoration
Printed ephemera—Collectors and collecting
Vertical files (Libraries)

PRECIS: **Libraries**
Stock: Ephemera
Ephemera. Stock. Libraries

14. Cook, Michael. The management of information from archives

LCSH: Archives—Administration
Cataloging of archival material
Archives—Data processing
Information storage and retrieval systems—Archival material

PRECIS: **Archives**
Administration
Administration. Archives

15. Pinion, Catherine F. Legal deposit of non-book materials

LCSH: Libraries—Special collections—Non-book materials
Acquisition of non-book materials

Acquisition of non-book materials—Great Britain

Legal deposit (of books, etc.)

Legal deposit (of books, etc.)—Great Britain

PRECIS: Legal deposit libraries. Great Britain

Stock: Audiovisual materials. Acquisition

Audiovisual materials. Stock. Legal deposit libraries. Great Britain

Acquisition

Acquisition. Audiovisual materials. Stock

Legal deposit libraries. Great Britain

16. Markey, Karen. Subject access to visual resources collections: a model for computer construction of thematic catalogs

LCSH: Cataloging of pictures—Data processing

Cataloging of art—Data processing

Cataloging of non-book materials—Data processing

Subject cataloging—Data processing

Audio-visual library service—Data processing

Information storage and retrieval systems—Art

PRECIS: Audiovisual materials

Cataloguing. Application of computer systems

Cataloguing. Audiovisual materials

Applications of computer systems

Computer systems. Audiovisual materials

Applications in cataloguing

17. Personnel issues in reference services

LCSH: Reference librarians

Library personnel management

Reference services (Libraries)

Library administration

Library services—Organization & administration

PRECIS: Libraries

Reference services. Personnel management

Reference services. Libraries

Personnel management

Personnel management. Reference services. Libraries

18. Tedd, Lucy A. Facsimile in libraries project

LCSH: Facsimile transmission—Library applications

Inter-library loans—Great Britain—Technological innovations

Telecommunication in libraries—Great Britain

Library information networks—Great Britain

PRECIS: Libraries

Applications of facsimile transmission

Facsimile transmission

Applications in libraries

19. Vickers, Stephen and Maurice B. Line. Guidelines for national planning for the availability of publications

LCSH: Library cooperation
Libraries and state
Information services and state
Library planning
Libraries and booksellers
Libraries and publishing

PRECIS: **Libraries**
Stock: Availability
Availability. Stock. Libraries

20. Intner, Sheila S. Circulation policy in academic, public, and school libraries

LCSH: Libraries—Circulation, Loans
Libraries, University and college—Administration
Public libraries—Administration
School libraries—Administration

PRECIS: **Libraries.** United States
Stock. Lending. Policies
Lending. Stock. Libraries. United States
Policies

21. Hickin, Norman E. Bookworms: the insect pests of books

LCSH: Book-worms
Insect pests
Books—Mutilation, defacement, etc.
Books—Conservation and restoration
Books—Conservation and restoration—Tropical conditions

PRECIS: **Books**
Pests: Insects
Pests. Books
Insects
Insects. Pests of books

22. Conservation of library and archive materials and the graphic arts

LCSH: Library materials—Conservation and restoration
Archival materials—Conservation and restoration
Graphic arts—Conservation and restoration
Books—Conservation and restoration
Art—Conservation and restoration
Paper—Preservation

PRECIS: **Libraries**
Stock. Conservation
Conservation. Stock. Libraries

23. Keaveney, Sydney Starr. Contemporary art documentation and fine arts libraries

LCSH: Art libraries
Art, Modern—20th century—Documentation
Art, Modern—20th century—Information services
Art, Modern—20th century—Bibliography—Methodology
Communication in art
PRECIS: Art libraries. United States

24. Bryant, E. T. Music librarianship

LCSH: Music librarianship
Music—Bibliography
Cataloging of music
PRECIS: Music libraries

25. Stevens, Norman D. A guide to collecting librarianship

LCSH: Library science—Collectibles
Libraries—Collectibles
Bibliography—Collectibles
Book collecting
PRECIS: Libraries
Memorabilia —*Collectors' guides*
Memorabilia. Libraries
—*Collectors' guides*

26. Public libraries today and tomorrow: approaches to their goals and management

LCSH: Library science—Congresses
Public libraries—Aims and objectives—Congresses
Public libraries—Administration—Congresses
Library planning—Congresses
PRECIS: Society
Role of public libraries
Public libraries
Role in society

27. Whiteman, Philip. Public libraries since 1945: the impact of the McColvin Report

LCSH: McColvin, Lionel Roy, 1896- Public library system of Great Britain
Public libraries—Great Britain—History—20th century
Libraries—Great Britain—Centralization—History—20th century
PRECIS: Public libraries. Great Britain
—1945-1985

28. Shavit, David. The politics of public librarianship

LCSH: Public libraries—Administration—Political aspects—United States
Libraries and state—United States

Library science—Political aspects—United States
Library administration—Decision making
PRECIS: **Public libraries. United States**
Political aspects
Political aspects. Public libraries. United States

29. Tallman, Johanna E. Check out a librarian

LCSH: Tallman, Johanna E. 1914-
Librarians—United States—Biography
Library science

PRECIS: **Librarianship. United States**
—Personal observations

Group 2

Cases where LCSH entries exceed PRECIS by 1

<i>Author or title</i>	<i>LCSH</i>	<i>PRECIS</i>	<i>Difference</i>
1. Parker, J. Stephen	3	2	1
2. Personnel management	4	3	1
...			
3. Burton, Paul F.	3	2	1
4. Tracy, Joan I.	3	2	1
5. New information ...	4	3	1
6. Leeves, Juliet	4	3	1
7. Crawford, Walt	4	3	1
8. Matthews, Joseph R.	4	3	1
9. Information analysis	2	1	1
10. Reference services ...	3	2	1
11. Knowledge ...	4	3	1
12. Harter, Stephen P.	2	1	1
13. Practical current ...	3	2	1
14. Bakewell, K.G.B.	4	3	1
15. Reader services ...	3	2	1
16. Mahoney, Ellen	4	3	1
17. Livesey, Brian	6	5	1
18. Arabic resources ...	3	2	1
	63	45	18

1. Parker, J. Stephen. Unesco and library development planning

LCSH: Unesco—History
 Library planning—Developing countries—History
 Libraries—Developing Countries—History
PRECIS: Libraries
 Development. Role of Unesco
 Unesco. Role in development of libraries

2. Personnel management in polytechnic libraries

LCSH: Library personnel management—Great Britain
 Libraries, Technical college—Great Britain—Administration
 College librarians—Great Britain
 Library employees—Great Britain
PRECIS: Polytechnics. Great Britain
 Libraries. Personnel management
 Libraries. Polytechnics. Great Britain
 Personnel management
 Personnel management. Libraries. Polytechnics. Great Britain

3. Burton, Paul F. and J. Howard Petrie. The librarian's guide to micro-computers for information management

- LCSH: Libraries—Automation
Library science—Data processing
Microcomputers—Library applications
- PRECIS: **Libraries**
Applications of microcomputer systems
Microcomputer systems
Applications in libraries
4. Tracy, Joan I. Library automation for library technicians: an introduction
- LCSH: Libraries—Automation
Library science—Data processing
Library technicians
- PRECIS: **Libraries. United States**
Stock. Technical operations
Technical operations. Stock. Libraries. United States
5. New information technologies and libraries
- LCSH: Library science—Technological innovations—Congresses
Library science—Data processing—Congresses
Libraries—Automation—Congresses
Information storage and retrieval systems—Congresses
- PRECIS: **Libraries**
Information systems. Technological development
Information systems. Libraries
Technological development
Technological development. Information systems.
Libraries
6. Leeves, Juliet. Library systems: a buyer's guide
- LCSH: Libraries—Great Britain—Automation—Directories
Library science—Great Britain—Data processing—Directories
Microcomputers—Library applications—Directories
Minicomputers—Library applications—Directories
- PRECIS: **Data processing systems. Great Britain**
Automated bibliographic data processing systems
—*Buyers' guides*
Bibliographic data processing systems. Great Britain
Automated bibliographic data processing systems
—*Buyers' guides*
Automated data processing systems. Great Britain
Automated bibliographic data processing systems
—*Buyers' guides*
7. Crawford, Walt. Technical standards: an introduction for librarians
- LCSH: Library science—Technological innovations—Standards
Library science—Standards

Technology—Standards
Information science—Standards

PRECIS: Librarianship
Librarianship & information science. Standards
Information science. Librarianship & information science.
Standards
Standards. Librarianship & information science

8. Matthews, Joseph R. Public access to online catalogs

LCSH: Catalogs, On-line
Library catalogs and readers
On-line bibliographic searching
Library planning

PRECIS: Libraries
On-line catalogs
Catalogs. Libraries
On-line catalogs
On-line catalogs. Libraries

9. Information analysis: selected readings

LCSH: Electronic data processing
Systems analysis

PRECIS: Information services
Assessment

10. Reference services today: from interview to burnout

LCSH: Reference services (Libraries)
Librarians—Psychology
Interviewing

PRECIS: Libraries
Reference services
Reference services. Libraries

11. Knowledge, information skills, and the curriculum

LCSH: Study, Method of
School children—Great Britain—Library orientation
Learning
Education—Great Britain—Curricula

PRECIS: Schools. Great Britain
Information retrieval. Techniques. Teaching
Information retrieval. Schools. Great Britain
Techniques. Teaching
Teaching. Techniques. Information retrieval. Schools.
Great Britain

12. Harter, Stephen P. Online information retrieval: concepts, principles and techniques

LCSH: On-line data processing
Information retrieval
PRECIS: **On-line information retrieval**
Techniques. Theories

13. Practical current awareness services from libraries

LCSH: Current awareness services
Reference services (Libraries)
Library science—Data processing
PRECIS: **Libraries**
Current awareness services
Current awareness services. Libraries

14. Bakewell, K. G. B. Business information and the public library

LCSH: Public libraries—Great Britain—Services to business and industry
Business—Information services—Great Britain
Business libraries—Great Britain
Public libraries—Services to business and industry
PRECIS: **Business information**
Information services in English public libraries
Information services. Business information
Information services in English public libraries
Public libraries. England
Business information services

15. Reader services in polytechnic libraries

LCSH: Libraries, University and college—Great Britain—Reference
services—Addresses, essays, lectures
Technical libraries—Great Britain—Addresses, essays, lectures
Libraries and readers—Great Britain—Addresses, essays, lectures
PRECIS: **Polytechnics. Great Britain**
Libraries. Services
Libraries. Polytechnics. Great Britain
Services

16. Mahoney, Ellen. Ready, set, read: best books to prepare preschoolers.

LCSH: Children—Books—Reading
Reading (Preschool)
Bibliography—Bestbooks—Children's literature
Children's literature—Bibliography
PRECIS: **Children's books**
Books for children, to 8 years. Selection —*For parents*
Selection. Books for children, to 8 years
—*For parents*
Parents

Children's books: Books for children, to 8 years. Selection
—*For parents*

17. Livesey, Brian. How to use *Chemical Abstracts, Current Abstracts of Chemistry, & Index Chemicus*

LCSH: Chemistry—Abstracting and indexing
Chemical Abstracts
Current Abstracts of Chemistry
Index Chemicus (Philadelphia, PA: 1977)
Current Abstracts of Chemistry and Index Chemicus (Philadelphia, PA: 1978)

Chemistry—Bibliography—Methodology

PRECIS: **Chemistry**
Information retrieval services: Chemical abstracts, Current abstracts of chemistry and Index chemicus. Use. Manuals
Information retrieval services. Chemistry
Chemical abstracts, Current abstracts of chemistry and Index chemicus. Use. Manuals
Chemical abstracts
Use. Manuals
Current abstracts of chemistry
Use. Manuals
Index chemicus
Use. Manuals

18. Arabic resources: acquisition and management in British libraries

LCSH: Libraries—Special collections—Arab countries
Special libraries—Great Britain
Arab countries—Study and teaching—Great Britain—History

PRECIS: **Libraries. Great Britain**
Stock: Documents on Middle East
Middle East
Documents on Middle East in stock of libraries in Great Britain

Group 3

Cases where LCSH and PRECIS entries are equal

<i>Author or title</i>	<i>LCSH</i>	<i>PRECIS</i>
1. Vickery, B. C.	1	1
2. Handbook of library ...	2	2
3. Martin, Susan K.	2	2
4. Jones, Noragh	2	2
5. Pre-licentiate ...	2	2
6. Westlake, Duncan R.	2	2
7. Clayton, Marlene	3	3
8. Libraries in the age ...	3	3
9. Expert systems ...	2	2
10. New electronic ...	2	2
11. St. Clair, Guy	2	2
12. Reference and ...	2	2
13. Cullen, Patsy	4	4
14. Library resources	2	2
15. Applications by ...	2	2
16. Veit, Fritz	1	1
17. Larkin, Philip	4	4
	38	38

1. Vickery, B. C. and Vickery, A. Information science in theory and practice
 LCSH: Information science
 PRECIS: **Information science**

2. Handbook of library training practice
 LCSH: Library employees—In-service training—Handbooks, manuals, etc.
 Library education (Continuing education)—Handbooks, manuals, etc.
 PRECIS: **Libraries**
 Personnel training
 Training. Personnel. Libraries

3. Martin, Susan K. Library networks: 1986-1987
 LCSH: Library information networks
 Library cooperation
 PRECIS: **Libraries. United States**
 Networks, to 1985
 Networks. Libraries. United States
 —to 1985

4. Jones, Noragh. Staff management in library and information work

- LCSH:** Library personnel management
Information services—Personnel management
- PRECIS:** **Libraries**
Personnel management
Personnel management. Libraries
5. Pre-licentiate training: theory and practice
- LCSH:** Library education—Great Britain
Librarians—Great Britain—In-service training
- PRECIS:** **Librarians. Great Britain**
Professional development
Professional development. Librarians. Great Britain
6. Westlake, Duncan R. Geac: a guide for librarians and systems managers
- LCSH:** Geac (Computer system)
Libraries—Automation
- PRECIS:** **Libraries**
Applications of computer systems
Computer systems
Applications in libraries
7. Clayton, Marlene. Managing library automation
- LCSH:** Libraries—Automation—Management
Library science—Data processing
Library administration
- PRECIS:** **Libraries**
Automation. Management
Automation. Libraries
Management
Management. Automation. Libraries
8. Libraries in the age of automation: a reader for the professional librarian
- LCSH:** Libraries—Automation—Addresses, essays, lectures
Library science—Data processing—Addresses, essays, lectures
Catalogs, On-line—Addresses, essays, lectures
- PRECIS:** **Libraries**
Automation. Management
Automation. Libraries
Management
Management. Automation. Libraries
9. Expert systems in libraries: proceedings of a conference of the Library Association Information Technology Group and the Library and Information Research Group
- LCSH:** Expert systems (Computer science)—Library applications—
Congresses

- Libraries—Automation—Congresses
 PRECIS: **Documentation**
 Applications of expert systems
 Expert systems
 Applications in documentation
10. New electronic information services
 LCSH: Data-base industry—Great Britain
 Data-base industry
 PRECIS: **Information retrieval services**
 On-line information retrieval services
 On-line information retrieval services
11. St. Clair, Guy and Joan Williamson. Managing the one-person library
 LCSH: Library science
 Small libraries
 PRECIS: **Special libraries**
 Management
 Management. Special libraries
12. Reference and information services: a reader for today
 LCSH: Reference services (Libraries)
 Information services
 PRECIS: **Libraries. United States**
 Information services
 Information services. Libraries. United States
13. Cullen, Patsy and John Kirby. Design and production of media presentations for libraries
 LCSH: Audio-visual library service
 Library science—Audio-visual aids
 Communication—Audio-visual aids
 Media programs (Education)
 PRECIS: **Libraries**
 Users. Education. Audiovisual materials. Design & production
 Users. Libraries
 Education. Audiovisual materials. Design & production
 Education. Users. Libraries
 Audiovisual materials. Design & production
 Audiovisual materials. Education. Users. Libraries
 Design & production
14. Library resources in East Anglia
 LCSH: Libraries—England—East Anglia—Directories
 Library resources—England—East Anglia—Directories

PRECIS: **East Anglia**
Libraries. Services —*Directories*
Libraries. East Anglia
Services —*Directories*

15. Applications by district councils in Wales for constitution as library authorities, 1984: report of the panel appointed by the Secretary of State for Wales

LCSH: Library administration—Wales
Libraries and state—Wales

PRECIS: **Wales**
Library authorities —*Proposals*
Library authorities. Wales
—*Proposals*

16. Veit, Fritz. Presidential libraries and collections

LCSH: Presidents—United States—Archives

PRECIS: **Presidential libraries. United States**

17. Larkin, Philip. "A lifted study-storehouse": the Brynmor Jones Library, 1929-1979

LCSH: Larkin, Philip
Brynmor Jones Library—History
Libraries, University and college—England—Hull (Humberside)
History—20th century
Librarians—Great Britain—Biography

PRECIS: **Humberside**
Hull. Universities. Libraries: Brynmor Jones Library, *to 1985*
Hull. Humberside
Universities. Libraries: Brynmor Jones Library, *to 1985*
Libraries. Universities. Hull. Humberside
Brynmor Jones Library, *to 1985*
Brynmor Jones Library
to 1985

Group 4

Cases where PRECIS entries exceed LCSH by 1

<i>Author or title</i>	<i>LCSH</i>	<i>PRECIS</i>	<i>Difference</i>
1. Microcomputer ...	3	4	1
2. Leggate, Peter	2	3	1
3. Modern approaches ...	1	2	1
4. Walsh, Brendan P.	2	3	1
5. The future ...	3	4	1
6. Access to local ...	2	3	1
7. Aeronautics ...	2	3	1
8. A manual of ...	2	3	1
9. Fazle, Abulfazal M.	2	3	1
10. Coyle, William	1	2	1
11. ur Rahman, Sajjad	3	4	1
	23	34	11

1. Microcomputer software for information management: case studies

LCSH: Data-base management
Microcomputers—Programming
Computer software

PRECIS: **Libraries. Great Britain**
Library & information services. Applications of microcomputer systems. Software packages
Information services. Great Britain
Library & information services. Applications of microcomputer systems. Software packages
Microcomputer systems. Great Britain
Software packages. Applications in libraries & information services
Software packages. Microcomputer systems. Great Britain
Applications in libraries & information services

2. Leggate, Peter and Hilary Dyer. The development of a microcomputer facility for small libraries

LCSH: Microcomputers—Library applications
Small libraries—Automation

PRECIS: **Small libraries**
Microcomputer systems & minicomputer systems
Microcomputer systems. Small libraries
Microcomputer systems & minicomputer systems
Minicomputer systems. Small libraries
Microcomputer systems & minicomputer systems

3. Modern approaches to chemical reaction searching: proceedings of a conference

LCSH: Chemical reactions—Information services—Congresses

PRECIS: **Chemistry**

Information retrieval

Information retrieval. Chemistry

4. Walsh, Brendan P., Helen Butcher and Alison Freund. Online information: a comprehensive business user's guide

LCSH: Business—Data-bases

Database searching

PRECIS: **Business information**

On-line information retrieval services

Information retrieval services. Business information

On-line information retrieval services

On-line information retrieval services. Business information

5. The future development of libraries and information services: progress through planning and partnership: report

LCSH: Libraries—Great Britain

Library planning—Great Britain

Information services—Great Britain—Planning

PRECIS: **Libraries. Great Britain**

Libraries & information services. Management. Planning

Information services. Great Britain

Libraries & information services. Management. Planning

Management. Libraries & information services. Great Britain

Planning

Planning. Management. Libraries & information services.

Great Britain

6. Access to local authority official publications: proceedings of a seminar

LCSH: Local government documents—Great Britain—Congresses

Local government documents—Information services—Great

Britain—Congresses

PRECIS: **Local authorities. Great Britain**

Publications. Bibliographic control

Publications. Local authorities. Great Britain

Bibliographic control

Bibliographic control. Publications. Local authorities

Great Britain

7. Aeronautics and space flight collections

LCSH: Aeronautics—Library resources—United States

Astronautics—Library resources—United States

- PRECIS:** **Aeronautics. United States**
 Aeronautics & astronautics. Information services
Astronautics. United States
 Aeronautics & astronautics. Information services
Information services. Aeronautics & astronautics. United States
8. A manual of local studies librarianship
- LCSH:** **Libraries—Special collections—Local history—Handbooks, manuals, etc.**
 Local history—Bibliography—Methodology—Handbooks, manuals, etc.
- PRECIS:** **Libraries. Great Britain**
 Local history collections. Administration —*Manuals*
Local history collections. Libraries. Great Britain
 Administration —*Manuals*
Administration. Local history collections. Libraries
 Great Britain —*Manuals*
9. Kabir, Abulfazal M. Fazle. The libraries of Bengal, 1700-1947
- LCSH:** **Libraries—India—Bengal—History**
 Bengal (India)—Intellectual life
- PRECIS:** **India**
 Bengal. Libraries, 1700-1947
Bengal. India
 Libraries, 1700-1947
Libraries. Bengal. India
 1700-1947
10. Coyle, William. Libraries in prisons: a blending of institutions
- LCSH:** **Prison libraries**
- PRECIS:** **Prisons. United States**
 Libraries, 1900-1986
Libraries. Prisons. United States
 1900-1986
11. ur Rahman, Sajjad. Management theory and library education
- LCSH:** **Library education**
 Library administration—Study and teaching
 Library administrators—Training of
- PRECIS:** **Schools of librarianship**
 Curriculum subjects: Library management. Teaching
Teaching. Library management. Curriculum subjects
 Schools of librarianship
Management. Libraries. Curriculum subjects. Schools of librarianship
 Teaching
Libraries. Curriculum subjects. Schools of librarianship
 Library management. Teaching

Group 5

Cases where there are 2-7 more PRECIS entries than LCSH

<i>Author or title</i>	<i>LCSH</i>	<i>PRECIS</i>	<i>Difference</i>
1. Lights in the ...	1	3	2
2. International ...	1	3	2
3. Deunette, J. B.	2	4	2
4. The management ...	1	3	2
5. Houghton, A. G.	1	3	2
6. UNIMARC manual	1	7	6
7. Bush, Sargent	3	5	2
	10	28	18

1. Lights in the darkness: Scottish libraries and adult education

LCSH: Libraries and adult education—Scotland

PRECIS: **Scotland**

Adult education. Role of public libraries

Adult education. Scotland

Role of public libraries

Public libraries. Scotland

Role in adult education

2. International Conference on Application of Micro-computers in Information, Documentation and Libraries

LCSH: Libraries—Automation—Congresses

PRECIS: **Libraries**

Libraries & information services. Applications of microcomputer systems

Microcomputer systems

Applications in libraries & information services

Information services

Libraries & information services. Applications of microcomputer systems

3. Deunette, Jacky and Prue Pinsent. Building, construction, architecture databases, 1986

LCSH: Building—Data-bases—Directories

Architecture—Data-bases—Directories

PRECIS: **Information retrieval services. Construction**

On-line bibliographic information retrieval services

Construction

On-line bibliographic information retrieval services

Bibliographic information retrieval services

Construction

**On-line bibliographic information retrieval services
Construction**

4. The management of polytechnic libraries

LCSH: Libraries, University and college—Administration

PRECIS: **Polytechnics. Great Britain**

Libraries. Management

Libraries. Polytechnics. Great Britain

Management

Management. Libraries. Polytechnics. Great Britain

5. Houghton, A. G. Bookstock management in public libraries

LCSH: Public libraries—Collection development

PRECIS: **Public libraries. Great Britain**

Stock: Books. Management

Books. Stock. Public libraries. Great Britain

Management

Management. Books. Stock. Public libraries. Great Britain

6. UNIMARC manual

LCSH: MARC system—Format

PRECIS: **Documents**

Cataloging. Machine-readable files. International exchange.

Formats: UNIMARC —*Manuals*

Cataloging. Documents

Machine-readable files. International exchange. Formats:

UNIMARC —*Manuals*

Machine-readable files. Cataloging. Documents

International exchange. Formats: UNIMARC —*Manuals*

Exchange. Machine-readable files. Cataloging. Documents

International exchange. Formats: UNIMARC —*Manuals*

**International exchange. Machine-readable files. Cataloging.
Documents**

Formats: UNIMARC —*Manuals*

Formats. International exchange. Machine-readable files.

Cataloging. Documents

UNIMARC —*Manuals*

UNIMARC

—*Manuals*

7. Bush, Sargent Jr. and Carl J. Rasmussen. The Library of Emmanuel College, Cambridge, 1584-1637

LCSH: Emmanuel College (University of Cambridge). Library—History

Libraries, University and college—England—Cambridge

(Cambridgeshire)—History—1400-1600

Libraries, University and college—England—Cambridge

(Cambridgeshire)—History—17th-18th centuries
PRECIS: Cambridgeshire
Cambridge. Universities. Colleges. Libraries: Emmanuel
College. *Library, to 1637*
Cambridge
Universities. Colleges. Libraries: Emmanuel College. *Library,*
to 1637
Libraries. Colleges. Universities. Cambridge
Emmanuel College. *Library, to 1637*
Colleges. Universities. Cambridge
Libraries: Emmanuel College. *Library, to 1637*
Emmanuel College. *Library,*
to 1637

REFERENCES

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- Bonnici, N. (1980). "PRECIS and LCSH in the British Library: Problems of consistency and equivalence," *Catalogue & Index* 56, 9-11.
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- DeBruin, V. (1977). "PRECIS in a university library," in the *PRECIS Index System: Principles, applications, and prospects*. *Proceedings of the International PRECIS Workshop*. Ed. by H. H. Wellisch. New York: Wilson, 141-148.
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VITA

Yasar Tonta is a doctoral candidate at the School of Library and Information Studies, University of California, Berkeley. He has graduate degrees from the University of Hacettepe (Ankara) and the University of Wales (Aberystwyth). He has been a lecturer, since 1982, at the Department of Library Science of the University of Hacettepe, Ankara, Turkey. His works appeared in a number of professional journals such as *Library Resources and Technical Services*, *Libri*, *The Public-Access Computer Systems Review*, *Information Development*, *Interlending and Document Supply*, *International Library Review*, and the *Bulletin of the Turkish Librarianship*. Currently, he is working on his dissertation on "The Analysis of Search Failures in Online Library Catalogs."

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