# Report on Subject Authority in the Library Catalog at the University of Oregon

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March 1990

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**Acknowledgements**

SAC would like to thank the following individuals for their help, cooperation and contributions to this report: Howard Robertson; Nancy Nathanson; Karen Darling; Lelah Conrad; the Reference Department staff.

SAC would like to extend a special thanks to Alice Allen, who approved the creation of the Committee, faithfully read its minutes, followed its progress with interest, provided encouragement and direction, and, most of all, waited patiently for this report.

## Executive Summary

The following report summarizes the findings, recommendations, and priorities of the Subject Authority Committee (SAC). In March 1989, SAC was established as an ad hoc committee charged with developing a theoretical basis for subject authority, defining questions that need to be addressed, and developing proposals for subject authority work at the University of Oregon Library.

It has been over two years since authority work in the UO subject file was performed by Blackwell North America and, although the UO Library has well established procedures for maintaining names and uniform titles, authority control of subjects has not been attempted locally for over a decade. The lack of recent local experience with subject authority work, together with the implementation of Janus, require that entirely new routines and policies be developed.

Subject authority work is considerably more complex than name authority work. This additional complexity stems from the nature of describing the "aboutness" of a document (e.g., differences in terminology due to a mismatch between the user's and catalog's vocabulary), the hierarchical structure of subject headings (i.e., references between related, broader, narrower, and synonymous terms), and the fact that Library of Congress subject headings are not drawn from a true authority list (e.g., many legal headings cannot be verified by a simple "look-up").

The current state of the database is far from ideal. Split files, where older and newer forms of the same subject heading co-exist and conflict, abound and are increasing rapidly as thousands of unverified subjects pass into the catalog every month. A particularly problematic area includes the large number of geographic headings where several old forms in addition to the correct current form appear in the catalog.

The powerful searching features that Janus offers will be undermined unless procedures for cleaning up the database and bringing subjects under authority control are devised. To this end, the Subject Authority Committee makes the following recommendation:

> That the Library establish an Authority Unit in the Catalog Department with responsibility for name, uniform title, subject and genre authority control

Towards this goal, the Committee has assembled the following prioritized list of tasks that should be accomplished:

(1) Educating Library staff
(2) Resolving conflicts in the authority file identified by Blackwell North America
(3) Resolving specific subject authority problems identified by the Subject Authority Committee
(4) Training staff and developing procedures to begin processing first-time subject headings

These are SAC's recommendations and priorities. The real work is yet to be done. The extent to which the catalog realizes its potential is dependent upon what priority the University of Oregon Library attaches to authority work.

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## Introduction

In March of 1989, the Subject Authority Committee (SAC) was formed as an ad hoc committee of the Catalog and Serials Departments at the University of Oregon. The Committee was asked to accomplish the following:

* develop a theoretical basis for subject authority
* brainstorm and compile questions to be answered
* develop proposals on how subject authority control can be implemented

This document is a report of the findings of SAC and represents the completion of our original charge. This report does not attempt to convey the considerable work done while establishing a theoretical basis. A great deal of time and effort was spent by SAC members helping to educate each other about the issues of subject authority control.

**Part I** is a brief introduction to what subject authority is and why it is important.

**Part II** is concerned with three major questions SAC identified as crucial to our work:

1) What was done about subject authority in the past?
2) What is the present state of the subject file?
3) What unique features of Janus have an impact on subject searching and subject authority work?

**Part III** identifies the major components of subject authority control at the University of Oregon.

**Part IV** details SAC's recommendations for implementing subject authority control, together with a prioritized list of the tasks outlined in Part III.

## I. Subject Authority

### Authority Control

The emergence and development of online public access catalogs, together with their acquisition and deployment by a growing number of colleges and universities, have made "authority control" and "authority work" library buzzwords. Librarians, vendors, system programmers and planners, information scientists, library school faculty members, in short, just about everyone connected to the research library community, is either talking or writing about, planning for, demonstrating or implementing authority control.

The reason for such interest stems, in part, from the realization that authority control is the key to ensuring optimum retrieval of bibliographic data from the online catalog, even in catalogs like Janus that provide sophisticated searching features like right hand truncation and Boolean keyword searching. Without the uniqueness and uniformity in headings that authority control provides, there can be no assurance that a search by author, uniform title, or subject will retrieve all the bibliographic records associated with that name, title or subject term. As David Macdonald has pointed out, authority control "imposes a consistency, integrity and a known structure on a database, enhancing the utility and effectiveness of OPACs."

Robert Burger has written that "authority work enables authority control." In one sense, then, authority control can be understood to be the outcome or end result of the labor intensive processes that make up authority work. It is the consistency among unique headings, interrelated through a cross-reference structure, that is always at stake as the ongoing process of authority work distinguishs new names, titles or subjects from those already in the catalog; determines the necessary cross-references to those access points; demonstrates their relationship to other headings and documents those decisions in authority records.

Although truly an outcome of authority work, authority control can also be viewed as a process. The reason for this lies in the fact that authority control is a product that is never completely finished. A high degree of uniformity among very well cross-referenced entries may be achieved at any given moment, but the relentless influx of new headings into the catalog, together with the amazing mutability of names, titles and subject terms, continually challenges the syndetic integrity of entries already under control. Thus, because it begins when the correct form of a heading is first established and continues throughout the existence of the heading in the catalog--its integration into the existing framework of headings and alteration as

conflicts arise--authority control is in a very real sense an ongoing process.

Given this somewhat paradoxical nature, being at once both process and outcome, authority control might best be described as a goal--something that is aimed at, yet simultaneously modified and reshaped by the steps taken toward its attainment. Because this goal will prove elusive and will be met, either knowingly or unknowingly, with varying degress of success over the lifespan of the catalog, it is important to determine just what this goal of authority control means here at the UO Library and just what needs to be done in the way of authority work to ensure a chance of achieving it.

**Subject Authority Control**

The goal of subject authority work is no different from that for either names or uniform titles: the establishment of unique and uniform headings that are connected to one another by appropriate cross-references; however, the means to achieving this goal for subjects are very different from those employed for names and uniform titles. Furthermore, subjects present additional complexities and challenges in the authority work process.

Unlike names and uniform titles, subjects must be handled in the context of a complex thesaurus that links headings together in a hierarchical structure providing ways to move up through broader terms, across through related terms or down to narrower terms. These linkages must be attended to and preserved with the same degree of diligence that goes into establishing each individual subject heading. These complex interrelationships create equally complex authority records. Embedded scope notes, "complex 'see-also'" and "complex 'see'" cross-references present a formidable hurdle to maintaining and displaying this heavily encoded, but extremely useful information to library patrons.

Compared with establishing names and uniform titles, for which there exists an internationally accepted, standard code for determining the choice and form of these access points, validating subject headings is not a straightforward or intuitive process. Many different sources need to be consulted and elaborate guidelines for subject heading construction must be followed in order to verify and authorize headings. In the future, working with subject terms from multiple thesauri appearing in bibliographic records will add another layer of complexity to subject authority work.

## Authority Control in Janus

Janus is a powerful searching tool that facilitates new ways of looking at the database. When searching in the card or COM catalog, the user is presented with an array of similar headings separated by biblographic records. In contrast, Janus lets the user see related headings displayed right next to each other and lined up for comparison. While this makes browsing through a large number of headings a relatively easy task, it also demands greater cataloging accuracy. Whereas in the card catalog, small typographic errors, changes in punctuation, and even changes in form could be accounted for or corrected by manual filers, Janus files headings as strings of characters. In this online environment, a small inconsistency can lead to a large filing error (e.g., a typo in the first few letters of a heading may cause that access point to file where it will never be found).

The identical problem exists when different forms of the same heading co-exist simultaneously in the file, potentially separated by many intervening browse screens. Here the problem for subject headings is particularly acute because, unlike authors, variant subject headings are often quite different (e.g., "Labor and laboring classes" and the newer form of the heading, "Working class") and because subjects can be subdivided in countless ways. Thus, the possibility for wide splits in the subject file are great.

In stark contrast to authors, there are no well established authority work processes that promote subject authority control in Janus. SAC believes it is very important for these to be developed and implemented as soon as possible. Currently, 45% of all searches in Janus are for subjects, making subject access the number one choice of Library patrons; however, Janus statistics show that subject searches are also the least successful. Part of the reason for this lies in the untidy state of the file. It is particularly ironic the present condition of the file creates a situation in which the least successful of all searches are the very specific ones carefully constructed by knowledgable patrons using Library of Congress Subject Headings.

## Conclusion

Authority control is a goal that cannot be reached without an enormous expenditure of time and effort. Authority work in general, and subject authority work in particular, is very labor intensive--in spite of the machine matching assistance that Janus provides. Authority work is expensive, but the end result, authority control, is definitely worth the cost.

Subject authority control is needed by anyone who searches by subject, especially by researchers who depend on being able to use a controlled vocabulary to formulate searches that maximize both precision and recall. Glaring inconsistencies, wide splits and discrepancies in headings hide the strengths of our collection. The succeeding pages address the context and steps involved in performing subject authority work in hopes that the Library can take significant strides towards the goal of bringing subject headings in the catalog under authority control.

## II. Context of Subject Authority Control at the University of Oregon Library

### 1) Local History of Subject Authority Control

The University of Oregon Library practiced full manual subject authority control on its card catalog until October 30, 1977. Full manual authority control meant that all new headings were checked against what existed in the local catalog and the newest version of LCSH. Any discrepancies found between headings were analyzed and corrected manually (i.e., erasing, typing, removing or adding cards) and all "see" and "see also" references were made and/or updated.

In 1975, Blackwell North America (BNA) began authority work and maintenance of the microfiche catalog they produced for the library known as the COM (Computer Output Microfiche) catalog, however manual authority work continued being done on the card catalog as it had always been done. The card catalog and the COM catalog functioned as two distinct catalogs from 1975 to 1977 with no regular communication between the BNA maintained subject authority control and the manually maintained subject authority control of the card catalog.

In 1977, the subject card catalog was closed, and subject added entry cards were no longer produced or filed. Authority control on the subject card catalog was discontinued with the catalog's closing, effectively freezing the subject card catalog under full authority control reflecting the authority practice of 1977.

The Library began relying solely upon BNA's automated subject authority control after the closing of the subject card catalog on October 30, 1977. This meant that all subject headings in the Library's database were compared with the Library of Congress subject headings list available to BNA (the list was keyed manually by BNA staff until LCSH was available on tape). In the comparison of our subject headings with LCSH, three outcomes could occur:

1) Our subject heading could match an LC heading, in which case there would be no conflict and appropriate references would be supplied in the COM catalog.

2) Our subject heading could match a cross reference of an LC subject heading. In this situation the computer would then "flip" our subject heading to match the correct LC subject heading, and supply appropriate references.

3) Our subject heading matched neither a correct LC heading nor any cross-reference. The subject

headings that fell into this category were looked at and corrected individually by a BNA editor.

Automated subject authority control by BNA continued in the Library until June of 1987, when the last machine flip that updated subject headings against the then current LCSH file occurred. BNA's treatment of subject authority changed over that period of time due to emerging technologies and the type of information they could get from the Library of Congress (e.g., the ability to obtain a machine-readable tape of LCSH rather than BNA keying it manually).

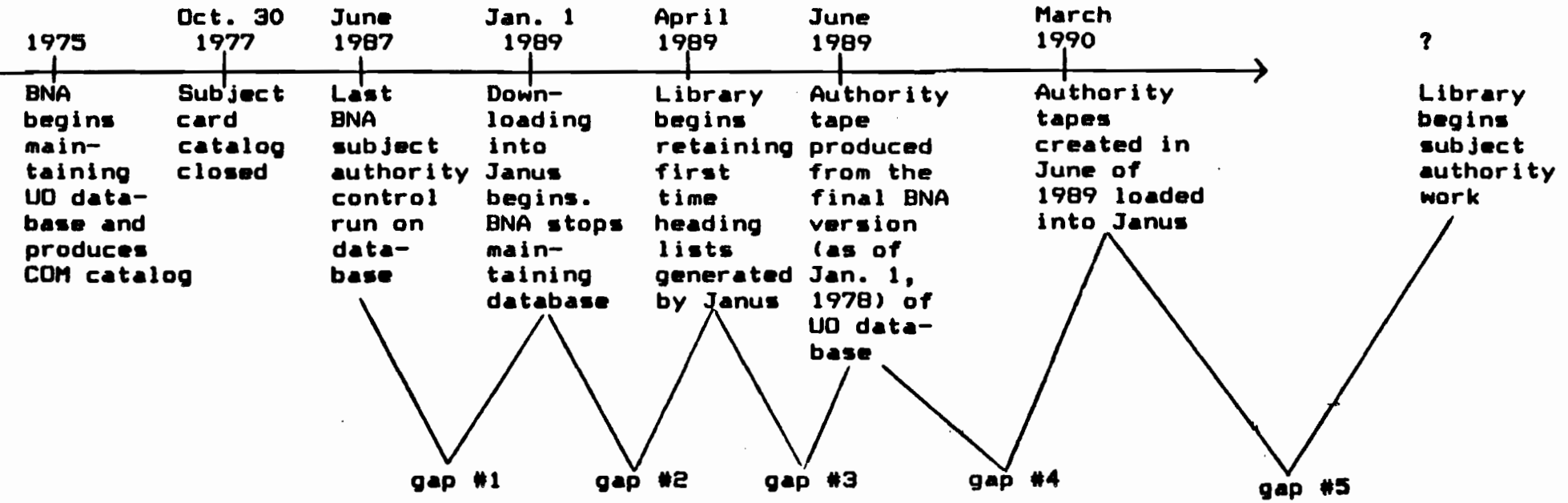
BNA continued to maintain our database (without running authority control) until the end of December 1988, when local downloading into Janus began. In June of 1989, the Library ordered an authority tape to be produced from the database BNA had maintained. The authority tape BNA produced contains Library of Congress authority records that began being processed in our local Janus system in March 1990. It is important to note that no authority work (i.e., changing or updating) on actual subject headings in the database occurred when this tape was created; therefore some discrepancy between subject authority records and the subject headings in bibliographic records is expected.

SAC has several concerns in relation to the process of subject authority control done by BNA:

1) SAC has identified a number of authority problems that call into question the quality of authority work BNA editors were able to do for subject headings that did not match an LC subject authority record. We are also concerned with how they dealt with headings that LC later split into two or more headings.

2) There are significant time-gaps between when the Library last had full subject authority run on its bibliographic database, when the final version of the UO Library database copied for tapeload into Janus occurred, and when authority records were created from our file. The concern here is that the LC online authority file as well as our database are continually changing and these changes are not reflected in the authority records we received from BNA.

A timeline on the following page helps to illustrate the subject authority control events that have taken place at the UO Library since 1975, as well as some of SAC's concerns stemming from the timing of these events. The history of subject practice and the steps taken in producing authority records will have a large impact on the implementation of subject authority control.




**gap #1:** No authority control on records produced from July 1987 through the final version of the UO database in January 1, 1989.

**gap #1-gap #2:** All record of new subject headings occurring in the UO database for the first time are lost with no authority control from January 1, 1989.

**gap #1-gap #3:** June 1989 authority tapes are run against the final January 1, 1989 database, no headings are corrected in the bibliographic records.

**gap #1-gap #4:** When the authority tapes are loaded into Janus they will reflect LCSH as of June 1989. Because no authority control will have been run on the bibliographic records in the UO Library database since June of 1987, split files will occur where subject headings may not match authority records.

**gap #1-gap #5:** First-time subject heading lists from April 1989 to the present will need to be processed to identify new or changed authority records.

## II. Context of Subject Authority Control at the University of Oregon Library

### 2) State of the File

In the course of our investigations, SAC identified a number of problems with subject searching on Janus. Some of these problems are inherent in the way Janus functions; these are considered in Section II.3, Features of Janus and Associated Subject Authority Problems. This section considers the current state of the subject file. It considers problems that are independent of the particular system we are using; problems that would be apparent in any system.

SAC made no effort to systematically assess the state of our subject file. This would be an enormous task requiring much research into the source of these errors. We did, however, find many problems in the course of processing first-time subject headings and of simply searching by subject and looking at what is retrieved. What follows is a brief description of what SAC happened across; there are sure to be other problems.

**Changes in Topical Subject Headings**

One of the most pervasive problems in the subject file is the coexistence of old and new forms of topical subject headings. LCSH is a dynamic thesaurus; so dynamic that Library of Congress Subject Headings is now published yearly and catalogers find it more and more necessary to consult LCSH online to stay current.

A typical example of a split file requiring a one-to-one change is "Moving-pictures." "Moving-pictures" was changed to "Motion pictures" in 1987. Before our file was updated Janus had the following postings for these two headings:

| Root heading | Number of headings | Number of records |
|---|---|---|
| Motion pictures | 93 | 182 |
| Moving-pictures | 331 | 905 |

Thus, many more records used the old form of the heading. The user who found one form of the heading may well have missed the other since the two root headings were split by 769 headings or rotated headings. In fact, anyone who took the trouble to look up the current form was done the disservice of retrieving the smaller of the two files. Fixing this problem requires 331 "global" changes.

Unfortunately, this is not the end of the story. There remain another 186 headings on 723 records that use the singular form of the old heading (e.g., Moving picture industry). In addition there are an unknown number of phrase headings of the type "[...] in moving-pictures" that need to be changed to "[...] in motion pictures."

Another kind of change that occurs with some frequency is the splitting of one heading into several headings. In this case, updating our subject file requires that we make a "one-to-many" change for each unique heading. By a "one-to-many" change we mean that the heading exists in the old form in addition to several correct current forms and that every heading using an old form must be changed to one or more of the new forms. For example, the heading "Labor and laboring classes" was recently cancelled and replaced by "Labor movement" and "Working class." As of this writing, Janus has the following postings for these three headings:

| Root heading | Number of headings | Number of records |
|---|---|---|
| Labor and laboring classes | 662 | 1,925 |
| Labor movement | 4 | 4 |
| Working class | 49 | 54 |

Thus, many more records use the old form of the heading than either of the new forms. The user who finds a few records under "Working class" may very well not realize that we have another 1,925 books which may be on the same topic but have been assigned "Labor and laboring classes." As before, anyone who takes the trouble to look up the current forms is done the disservice of retrieving the smaller two files.

Fixing a "one-to-many" change is particularly labor intensive. Such changes require that at least every bibliographic record be reviewed and possibly many pieces retrieved for review. The reviewer determines which of the new forms each work requires.

In our example "Labor movement" is defined as follows:

> "Here are entered works on the complex of organizations and individuals advocating improved conditions for the working population. Works limited to the efforts of organized labor are entered under 'Trade-unions.'" (LCSH ARN 2516187)

"Working class" is defined as follows:

> "Here are entered works on the social class composed of persons who work for wages, generally excluding managers, professionals, and those not

> at the lower end of the educational and economic scale." (LCSH ARN 2152411)

Thus, each of the 1,925 records entered under one of the 662 headings employing the root heading "Labor and laboring classes" must be evaluated in light of the above definitions. The reviewer decides which of the new headings (or possibly both) should replace the old and which subdivisions should be used. Since such evaluations involve subject analysis, this task should probably fall to a professional librarian. Thus, a large quantity of expensive labor is required for "one-to-many" changes in subject headings.

**Changes in Geographic Subject Headings**

In SAC's experience geographic headings are an especially large problem in our subject file. Geographic headings more often need "many-to-one" changes (i.e., the heading exists in several old forms in addition to the correct current form). "Siberia (R.S.F.S.R.)" is an especially severe example of the problem. In Janus, this heading exists in three forms:

Siberia
Siberia (R.S.F.S.R.)
Siberia (R.S.F.S.R. and Kazakh S.S.R.)

Siberia (R.S.F.S.R.) is the correct form; the first and third forms generate 314 obsolete headings on 596 records that need to be changed. In all, 64% of all the records for books about Siberia in the University of Oregon Library catalog contain incorrect forms of the heading.

Authority work on geographic headings is complicated by the fact that these headings are also used to geographically subdivide topical headings. The form of a geographic subdivision is often significantly different from its form as a heading. For example,

the heading "Siberia (R.S.F.S.R.)" generates the geographic subdivision "--Russian S.F.S.R.--Siberia"

The form of a geographic heading determines its usage and form as a subdivision. A change in a geographic heading whose form includes a qualifier usually requires two types of change: the first is a change in the heading, the second is a change in its indirect form as a subdivision. Most outdated geographic headings also occur as outdated subdivisions on topical headings.

For example, "Sicily" was recently changed to "Sicily (Italy)." Such a change requires that subject headings of the form

"Sicily-- ..."
be changed to "Sicily (Italy)-- ..."

and that topical subject headings of the form

"[topical heading]--Sicily-- ..."
be changed to "[topical heading]--Italy--Sicily -- ..."

Note that in some cases a geographic subdivision that needs to be changed is not even used as a heading in our file. Since Janus provides access by subdivisions UO may find it advisable to maintain authority records for geographic headings that only occur as subdivisions to topics.

**Changes in Names and Uniform Titles Used As Subject Headings**

All of the problems associated with name and title authority control are present in authority work for names and titles used as subjects headings. Thus, the name authority work that the Library already does for authors is identical to only the most straightforward part of a subset of subject authority work. A significant difference is that many more names are encountered as authors than as subjects.

Two complicating factors are the presence of subdivisions in such headings and the occasional migration of headings between treatment as topical and name, or topical and title subject headings. Migration always requires a change in MARC tagging and is usually accompanied by a change of form. "Prester John" is a recently encountered example of migration from name to topical treatment:

the name "Prester John" has become
the topic "Prester John (Legendary character)"

"SPSS" is a recently encountered example of migration from topical to title treatment:

the topic "SPSS (Computer system)" has become
the uniform title "SPSS (Computer program)

While SAC did encounter a few such migration problems, they appear to account for a small proportion of the problems in the database.

**Changes in Subdivision Practice**

In addition to headings, the Library of Congress periodically changes the form or use of a subdivision.

These changes may take the form of a cancellation, change in form, change in usage, split from "one-to-many", or from "many-to-one." For example, it was once the case that digital computer simulation in a particular field was represented by a pair of headings:

[field]--Mathematical models
[field]--Data processing

Recently, LC decided to use only one heading of the form

[field]--Computer simulation

All new cataloging should be done using this single heading. If we do not find all instances of heading pairs of the pattern "--Mathematical models" and "--Data processing" and change them to a single heading of the form "--Computer simulation" then the file will be split when new cataloging is added. This kind of change is difficult to carry out because it requires identifying the coincidence of two specific subdivisions occurring on any root heading in the same record. This might be accomplished using a Boolean review file or by scanning through all the records using one of the subdivisions looking for the coincidence of the other subdivision. Since "Mathematical models" is currently used on 3,450 records and "Data processing" is used on 2,461 records, a manual review would require that 2,461 records be checked.

SAC has not attempted to measure the extent to which our subject file has been split by changes in subdivision practice.

**"City Flip" Problem**

"City flip" is probably best explained in Subject Cataloging Manual: Subject Headings (H832, p. 1):

> "Until early 1985, certain topical headings in LCSH had provision for indirect local subdivision, but were not divided to the city level. Instead, in order to express these topics in conjunction with the name of a city, a subdivision was used under the heading for the city. ... The term 'city flip' was used informally to refer to this practice. Following the provisions of the 'city flip,' the heading for a general work about fountains in California would be 'Fountains--California,' whereas the heading for a work about fountains in Los Angeles would have been 'Los Angeles (Calif.)--Fountains.' The 'city flip' has now been discontinued." (Note that the correct form of LC's example is now "Fountains--California--Los Angeles.")

Although geographic subdivision practice has changed, our subject file has not been retrospectively updated. Thus, two different systems of geographic subdivision to the city level are present in Janus. The split files this causes are what SAC calls the "city flip problem." "City flip" seems a clear example of a change the UO Library might have expected BNA to make.

Rotation, a Janus feature (described in Section II.3, Features of Janus and Associated Subject Authority Problems) that provides access by subdivisions, would solve the "city flip" problem were it not that geographic subdivision is indirect. For example, a book about churches in Cairo would get one of the following headings depending on when it was cataloged:

Cairo (Egypt)--Churches ("city flip" cataloging)
Churches--Egypt--Cairo (current cataloging)

A user who searches by the subject "churches" will find the two headings above indexed as follows:

Churches Cairo Egypt
Churches Egypt Cairo

Unfortunately, these two headings file 10 entries and two screens apart. A persistent and observant user may find both entries, but the user who is sophisticated enough to enter a more specific heading, "Churches--Egypt," will not retrieve the relevant records that use the obsolete form of the heading. The "city flip" problem together with rotation defeat the purpose of indirect subdivision.

In Janus, the "city flip" problem makes 21% of the headings and 18% of the records retrieved under "churches" illegal. Cataloging Manual: Subject Headings, section H832 lists 99 topical headings affected by "city flip." The list is reproduced as Appendix 2 to this report. "Churches" is only one of these headings and it alone will require updates to 45 records in Janus to fix the problem and ongoing review of first-time headings to keep the problem from being reintroduced.

**Conclusion**

The discussion above does not definitively state the condition of our subject file, but it does indicate potentially extensive problems. SAC has not attempted to measure the degree of authority control now present in our subject file, but two exercises we completed do give us a kind of "snapshot" of the state of the file.

The first is a partial study of changes required by announcements in the Cataloging Service Bulletin. CSB number 43 (Winter 1989) provides notification of changes in over 350 subject headings. 12 of these headings (selected as likely to occur most frequently) require changes in 380 headings on 719 records--that's 380 global changes required by only 12 out of 350 changed subject headings, from only one of at least ten CSB's that have not been dealt with since subject authority was last run by BNA. Admittedly, these may be the 12 most influential changes for our database, but there are still at least another 340 headings to check. This "snapshot" shows that our subject file may need a fair bit of work.

The second "snapshot" of our database was taken as SAC members each processed a first-time subject heading list. This process is explained in detail in Section III.1.a, Processing first-time subject headings. Including headings generated by updates, SAC processed 606 first-time headings. In so doing, we determined how many existing headings in the database would need to be changed to achieve consistency with the headings added. For these lists, generated by only four days of downloading, SAC found that 1,002 headings on 2,066 records would need to be changed to accommodate the addition of these first-time headings--for every unique heading added, two records need updating.

These two "snapshots," the problems described above, and our experiences doing subject searching over the past year lead SAC to conclude that the subject file in Janus is far from ideal.

## II. Context of Subject Authority Control at the University of Oregon Library

### 3) Features of Janus and Associated Subject Authority Problems

Janus has a number of features which facilitate subject access. Among these are a few features which also provide the user with ambiguous or contradictory information. Some of these problems are inherent in the system and some are the result of decisions made when planning for Janus. This section is an overview of Janus features associated with subject headings together with those aspects that complicate authority work or are confusing to the user.

**Rotation**

One of Janus' most important subject searching features is known as subject heading rotation. Rotated headings provide access through subdivisions. For example, using rotation the heading "United States--History, Military--To 1900--Juvenile literature" would be indexed in four forms:

1) United States History Military To 1900 Juvenile Literature
2) History Military United States To 1900 Juvenile Literature
3) To 1900 United States History Military Juvenile Literature
4) Juvenile Literature United States History Military To 1900

The result of rotation is a file similar to a KWOC (key word out of context) index. The rotated subdivisions are key phrases rotated out of context. Using rotation, Janus provides access through all four parts of the heading. To the uninitiated, there often seems no logic behind the order of subdivisions in a heading. Rotation provides access without requiring that subdivision practice be known to the user.

**Rotation Problems**

SAC's opinion is that while rotation is certainly better than access by form (1) only, it would be better still if Janus had keyword access to headings. Pre-coordinated headings like "Garbage can models of decision making," "Liability for hazardous substances pollution damages," or "Space flight to the moon" are not influenced by rotation. Keyword indexing would provide access to such imbedded words and phrases as "moon," "decision making," "hazardous substances," "pollution," "pollution damages" or "liability" combined with "pollution." In the example above, rotation does not provide access by the word "military." Recent trends in practice indicate that LC is tending towards the introduction of pre-coordinated headings and changing inverted headings to direct order. Thus, there are an increasing number of multiple word subdivisions and headings for which Janus supplies no access by imbedded words.

Rotation is actually more complicated than the example shown above indicates. When performing rotation, Janus consults a list of stoplisted subject subdivisions. This list currently contains 98 subdivisions which are not rotated. In the above example, form (4) would not be indexed because "Juvenile literature" is stoplisted. The subdivisions stoplisted were probably chosen according to frequency of occurrence or lack of usefulness; the most common or least useful subdivisions are not rotated. Presumably this is done to save memory and ultimately money. While frequency may be a determining factor it seems unlikely that stoplisted subdivisions like "Adverse effects," "Audiovisual kits, "Examination questions," "Field work," and "Interviews" occur with great frequency.

**SAC has two concerns with the stoplist:**

First, it is not obvious that a frequently used subdivision is less useful and so a candidate for stoplisting. High frequency of use may be an argument for indexing. One reference librarian who recently tried to find out what UO has about "Social life and customs" could not do so because this subdivision is stoplisted. The only way to determine for which countries the Library has a significant collection about social life and customs is to perform separate searches by all countries. Second, whatever logic is used for stoplisting is not apparent to the user nor can the user be expected to know which subdivisions are not indexed. For example, "Juvenile literature" is stoplisted but "Juvenile drama," "Juvenile fiction," "Juvenile films," "Juvenile humor," "Juvenile poetry," and "Juvenile sound recordings" are not. "Study and teaching" as well as that subdivision qualified by "Higher" and "Secondary" are stoplisted but "Study and teaching" qualified by "Continuing," "Elementary," "Graduate," "Internship," "Kindergarten," "Preschool," "Primary," "Residency," or "Humanities" are not. Clearly useless subdivisions such as those of the form "To <date>" or frequently used subdivisions such as "Scores" are not stoplisted. Janus has over 3,000 headings on 7,500 records with "To <date>" indexed and over 1,200 headings on 4,300 records with "Scores" indexed.

**SAC has three general concerns with the display of rotated headings:**

First, Janus does not display the actual heading used in the bibliographic record but rather the rotated form of that heading. While this display can be useful, it often makes it difficult to interpret the meaning of a subject heading. For example,

Library Resources California Berkeley Europe Eastern

may be quite difficult to interpret. It was generated by the subject heading

Europe, Eastern--Library resources--California--Berkeley

Rotated headings are sometimes correctly understood but are often unintelligible gibberish or, even worse, they sometimes convey a meaning inappropriate to the work.

Rotation further obscures the ordered display LCSH provides by interfiling rotated headings with real headings. There is a syntax to LCSH which is violated by rotating subdivisions. Rotating a subdivision from a heading can be likened to extracting a word from a sentence; "Bell for whom the tolls" is hard to interpret and would be more so were it not a familiar phrase. This display of rotated headings may disturb only those who are used to interpreting the syntax of LCSH, but such headings clutter the screen and are frequently difficult to interpret.

Second, Janus displays headings in an index without punctuation and with the first letter of every word capitalized. Further, there is a 53 character limit to what can be displayed. The result of this is that a heading like

IIIE Communications Society. Optical Committee--Library resources--Oregon--Eugene

would be indexed as follows:

1) Iiie Communications Society Optical Committee Library
2) Library Resources Iiie Communications Society Optical
3) Oregon Iiie Communications Society Optical Committee
4) Eugene Iiie Communications Society Optical Committee

Third, the most serious problem caused by the display of rotated headings is the apparent conflicts such headings cause. It is often the case that a term which is illegal as a heading is legal as a subdivision. Thus, a legal subdivision is often rotated to the front of a heading where it appears as an illegal heading in conflict with an authority record. For example, "Economic conditions" is a legal subdivision and appears as a cross-reference in the authority record for "Economic history." The user who searches on "Economic conditions" will be told that this is not a legal heading and then Janus will display 2,500 rotated headings on 8,300 records in which "Economic conditions" appears to be legal. This apparent conflict seems likely to confuse users.

```
1   Economic Conditions --> See ECONOMIC HISTORY ..  1 entry
2   Economic Conditions Africa .....................  3 entries
3   Economic Conditions Africa 1918 ...............  6 entries
4   Economic Conditions Actors Great Britain ......  2 entries
5   Economic Conditions Afghanistan ...............  1 entry
```

Choosing number 1 will cause the system to respond: "Economic conditions is not used in this library's catalog; Economic history is used instead." This statement appears to conflict with the rest of the file.

There is little that can be done locally to avoid these apparent conflicts. One solution is to add such subdivisions to the stoplist, another is to not to download authority records which will appear to be in conflict with rotated subdivisions. Neither option is appealing.

In summary, SAC concludes that rotation is a valuable feature of Janus although keyword access would be preferred. The problem with rotation is not the use of rotation for indexing but rather the display of rotated headings. Such headings create conflicts, confuse syntax, and obscure the intended ordering of subject headings.

**"Same Subject" Searches**

One of the most powerful features Janus offers is the option to search for other materials on the same subject as a given retrieved record. The user who views a single bibliographic record (retrieved by any means) is given the option to do a subject search by any one of the subject headings appearing on that record. The problem with this feature is the way Janus treats unindexed subject headings.

Cataloging copy taken from OCLC frequently includes subject headings from a variety of thesauri. It is UO Library practice to allow such subject headings to remain in the bibliographic record but to index only LCSH and MeSH headings. Unfortunately, when Janus displays a bibliographic record all fields tagged as subjects are displayed whether indexed or not. Janus then offers these subject headings for "same subject" searching. If an unindexed heading is chosen, then Janus dumps the user to the main menu regardless of whether or not the heading is actually a legal heading. This problem is especially acute when the unindexed heading is a LC Juvenile heading. Juvenile headings are often identical to LCSH but not indexed at UO.

For example, a search on the title The Bee on the Comb retrieves a record (.b14192706) that includes the following subject headings:

1) Literary recreations
2) Picture puzzles
3) Treasure-trove
4) Allegories
5) Literary recreations

1-3 are LC subject headings, 4-5 are LC Juvenile headings; the distinction is only clear to someone familiar with MARC tags who is viewing the record in update mode. A "same subject" search on 4 or 5 dumps the user to the main menu even though UO has eight books using the heading "Literary recreations" and 22 using "Allegories."

The problem is that Janus displays headings we don't index and is unable to perform "same subject" searches on unindexed headings. A local solution may be to map non-LCSH/MeSH subject headings out of our records. This local measure would require finding and fixing thousands of records and would prevent our ever using these different but valid headings in the future.

**User Interface On Janus**

One of the great strengths of our system is the clarity of the user interface. In most cases, the screens are relatively self-explanatory and uncluttered. In technical mode, Janus utilizes a hierarchy of screens accessible through menus. Unfortunately, no such hierarchy of menus is available from the initial public searching screen. The initial screen shows every kind of search possible. In other words, you cannot choose a general type of search and then be offered a selection of more specific searches.

In order to keep this initial screen reasonably simple, UO had to make a number of indexing decisions. We could not separately index every field that needed to be indexed. Thus, some fields are mapped into the same index. For example, personal authors, corporate authors, and conferences are all searched as "author" on Janus. Most such mappings make the system easy to use with few negative side effects.

One mapping decision combined MeSH and LCSH in one index. In deference to Oregon Health Sciences University, the University of Oregon indexes medical subject headings (MeSH) that appear on cataloging copy (OHSU, in turn, keeps LC subject headings in deference to libraries using LCSH). SAC has identified a number of problems with the way we currently treat MeSH:

* MeSH is at least as dynamic as LCSH. Headings used by the National Library of Medicine are continually evolving to keep pace with new findings in medicine. We at the UO have no expertise in the maintenance of a MeSH file. Our MeSH headings are almost certainly grossly out of date and the file is probably split in many places.

* MeSH headings conflict with LCSH. Legal MeSH headings often occur as cross-references to LC subject headings. This leads to apparent conflicts similar to those caused by rotation.

For example, "Government agencies" is a legal MeSH heading but occurs as a cross-reference on the LC subject authority record for "Administrative agencies."

1 Government Agencies --> See ADMINISTRATIVE AGENCIES 1 entry
2 Government Agencies History ..... 1 entry
3 Government Agencies History United States ..... 1 entry
4 Government Agencies United States ..... 1 entry

As with conflicts caused by rotation the system informs the user that "Administrative agencies" is not used and then displays a number of headings using this phrase.

* Since we accept MeSH but do not assign MeSH to all materials on medical topics, a search on a MeSH heading will produce a misleadingly small retrieved set. For example, the user who searches on the subject "Environment," a legal MeSH heading, will find that UO apparently has only 30 books on this topic. This is incorrect; LC uses "Ecology" instead of "Environment" and a search on this heading yields 245 citations.

If Janus had the capability of offering a subject search, and then further offering more than one kind of subject search, then we could index MeSH separately and still avoid cluttering the display. Having selected a subject search, LCSH could be the default with MeSH searching available through another keystroke. Using such a scheme, the display would remain uncluttered, users would not need to strike even one more key when searching LC subject headings, MeSH searching would still be available (with one more keystroke), and conflicts caused by mixed thesauri would be eliminated.

Multiple thesauri and how they should be indexed and displayed are topics of much discussion in current literature. Without a means of relating terms from different thesauri SAC recommends that UO eventually index MeSH headings separately from LCSH. With sufficient resources we should also plan on a continuing commitment to some level of subject authority control of the MeSH file. Given Innovative Interface's interest in mounting multiple databases, perhaps more thought will be given to the user interface and multiple thesauri for similar fields in one database.

## First-Time Subject Heading Lists (FTSH Lists)

Janus has the important capability of generating a list of new headings with a posting of one (i.e., headings appearing for the first time in our catalog). Given a clean file, the FTSH list can be used to initiate authority work; if a heading already exists, one can assume it is legal, otherwise its legality should be verified.

Some aspects of Janus FTSH lists that mitigate their usefulness:

* **Display.** Headings printed on FTSH lists have a limit of 60 characters. This is a problem for subject headings because they are often quite large. SAC finds that, due to their length, approximately 20% of first-time subject headings cannot be verified from the list.

* **Updates.** A potentially large number of headings on FTSH lists are not first-time headings. Any time a bibliographic record is updated in any way, the record is reprocessed and its headings re-indexed. If one of those headings is unique to the file, then, when it is re-indexed, Janus treats the heading as if it were being added for the first time; it is added to the FTSH list. Such headings are not new and do not need to be reviewed as first-time headings. The number of false first-time headings on any given list depends on the amount of updating done since the list was printed and cleared.

## Global Changes

An important feature for maintaining a database is the ability to make global changes. A global change to a heading in a relational database can usually be made by changing the heading in its authority record. In databases employing unit records without links to authority records (e.g., Janus, OCLC), there is a great deal of redundancy; headings are repeated in every record for which they are appropriate. Thus, changing a heading requires changing it everywhere it appears.

Janus facilitates such changes by offering a global change feature that substitutes one indexed string of characters for another in each record where that string occurs. Unfortunately, an entire string must match before the exchange is made. Subject headings are typically formed from a root heading and a number of subdivisions. The possible subdivisions are so numerous that a root heading may appear in a very large number of unique strings. Each one of these strings must be separately changed in Janus.

For example, in the following file a change from "Sicily" to "Sicily (Italy)" requires four global changes; one for each unique string:

```
1 Sicily ..........................................  1 entry
2 Sicily History ..................................  1 entry
3 Sicily Politics And Government ..................  2 entries
4 Sicily Politics And Government Bibliography ..   1 entry
```

This is better than having to make five changes (one for each occurrence) but not as helpful as if only one change were needed.

Many subject headings are only unique in their subdivisions. Thus, the typical file for any root heading has a large number of headings made unique by their subdivisions. A particularly severe example is that of the geographic subject heading "Siberia." The topic of "Siberia" exists in three forms in Janus: "Siberia (R.S.F.S.R.)," "Siberia (R.S.F.S.R. and Kazakh S.S.R.)," and "Siberia." Only the first is the current legal form; the latter two forms need to be changed. The two illegal headings are used in a total of 314 headings on 596 records. Each of the 314 headings is a unique string. Thus, Janus requires 314 global changes to fix the authority problem. While 314 is certainly fewer than 596, it is far from the two changes that might be required with a more powerful global update capability.

In the course of subject authority work, it is sometimes the case that subdivision practice changes. When this occurs, one subdivision may need to be replaced by another in a number of different headings. Again, since Janus cannot replace a part of a string of characters, global changes are required for every heading in which the subdivision occurs.

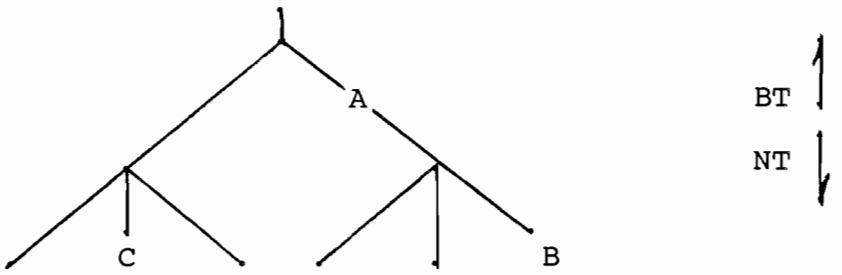
The limited global change capability of Janus has a greater influence on subject than name authority work. It is the nature of subject files to have a large number of headings with few postings. The Siberia example above illustrates this fact. 314 headings on 596 records implies an average of less than two postings per heading. Taken together, a relatively small number of bibliographic records (e.g., 596) contain a large number of unique subject headings (e.g., 314) with an identical component in each (e.g., "Siberia").

**Subject Cross-References**

Janus provides subject cross-references generated by downloaded subject authority records. As far as they go, these references appear to work quite well. But there are some important limitations to subject referencing on Janus compared to an automated authority search on OCLC or a manual search of Library of Congress Subject Headings (a.k.a. the "Red Books"):

* Janus provides guidance to narrower terms and related terms but not to broader terms. A searcher following cross-references between legal terms navigates a hierarchy of broader, narrower, and related (neither broader nor narrower) headings. In Janus, the searcher will be guided laterally (related terms) or down (narrower terms) a hierarchy but never up (broader terms). In the diagram below, a user who enters at A can be guided to B but not to C. Guidance to broader

terms is available through OCLC or the Red Books but not on Janus.




Once subject authority tapes are completely loaded, this limitation may influence how users are taught to perform subject searches. It might be better to advise that subject searches start with broad terms and follow cross-references to narrow or related terms. If you start too narrow, then Janus will not guide you to broader terms or to related hierarchies accessible only through broader terms.

* An important associated problem is Janus' inability to correctly process the subfield in subject authority records that differentiates related and broader terms (broader terms have a subfield "w" with value "g"). The problem is not just that Janus does not use this distinguishing tagging, but that the tagging is processed in such a way that the information identifying related and broader terms is obscured (the subfield is extracted to form a new field, resulting in broader terms which are tagged as related terms). If we do not regain this information, subject authority records downloaded into Janus could not be used in a future system that generates references identified as "broader" or "narrower;" all relationships would simply be "related." Such a loss would be a significant and continuing detriment to subject searching in the catalog. An example is given in Appendix 5, Subject Authority Records: Loss of Hierarchical Information.

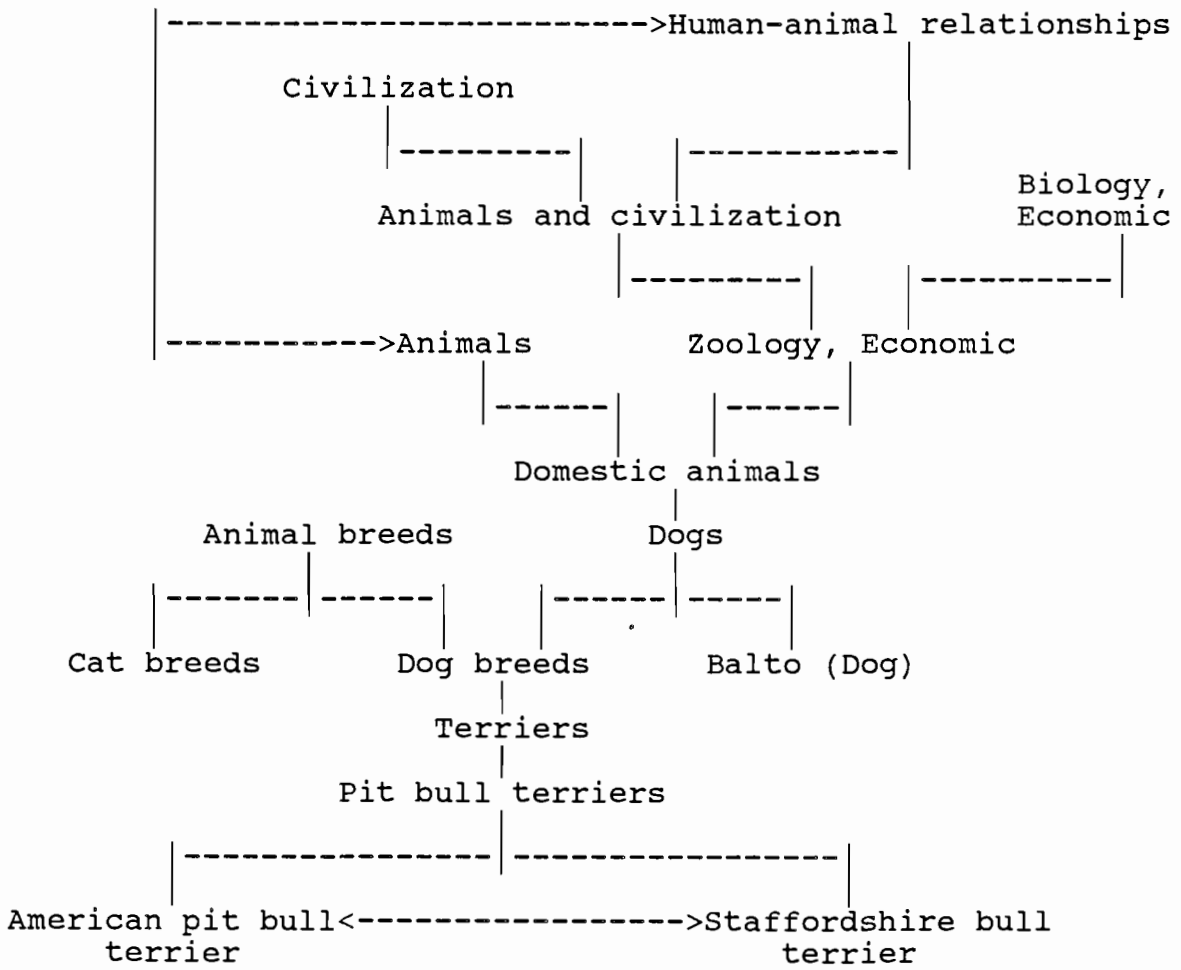
* Janus does not provide a means for the user to have scope notes displayed. Only the Red Books or OCLC explain the different sense in which LC uses such similar terms as "Housing" and "Dwellings."

* Janus does not provide guidance to LC class numbers. Again, the Red Books or OCLC must be used to find where books on a given topic may be shelved.

* Janus does not provide so-called "complex see-also's." These are often notes explaining how a concept may be represented through subdivision of other terms. Any reference that cannot be explained as broader, narrower, or related may be dealt with as a complex see-also. Such complex notes are only available on OCLC or in the Red Books.

To test Janus' ability to provide subject cross-references, SAC downloaded a cluster of related LC subject authority records. This cluster is centered around the heading "Dogs." "Dogs" was chosen because of the ease with which one understands the hierarchy for this cluster. The hierarchy is illustrated below. The authority records that generate this hierarchy, together with a brief guide to their interpretation, are provided as Appendices 3 and 4. Using this hierarchy, the reader can explore Janus' cross-reference capability.

**Staffordshire Bull Terriers**
**As A Narrower Term For Civilization**




Note: ↑ = BT ↓ = NT <---> = SA

**The Relationship Between Name and Subject Authority**

The structure of Library of Congress authority files is such that a single authority record may be used for more than one file. This structure is most evident in authority records for corporate bodies. For example, the authority record for the Hoover Institute consists, in part, of the following heading and references:

Hoover Institution on War, Revolution, and Peace

UF Hoover Institute
Hoover Library on War, Revolution, and Peace
Hoover War Library
Hoover War Collection

BT Libraries--California
Stanford (Calif.)--Libraries

This single record is used to authorize the use of the heading "Hoover Institution on War, Revolution, and Peace" as both an author and a subject. In the author file, this authority record should generate references from the four unused forms of the heading to the legal heading. In the subject file, references from the two broader topical terms should appear in addition to references from the unused forms. (Recall from the previous section that, in Janus, references to broader headings from narrower headings are not made.)

Janus does not have the capability of using one authority record to generate correct references in two files. As of this writing, it appears that name authority records that include broader topical cross-references must be significantly edited to function correctly in either the author or subject file. If the unedited authority record in our example were downloaded, it would generate the following references:

1) reference from unused forms to the legal heading in the author file (e.g., "Hoover Institute" **as an author** to "Hoover Institution on War, Revolution, and Peace" **as an author**).

2) reference from broader topical headings in the subject file to the name heading in the author file (e.g., "Libraries--California" **as a subject** to "Hoover Institution on War, Revolution, and Peace" **as an author**). Note that, in this case, Janus claims to be performing a subject search on the narrower name heading but is actually doing an author search.

The latter reference, from topical subject to author name, is not a useful reference and is likely to confuse users. Further, there are references one would expect to be made but which are **not made** when an unedited name authority record with

broader term references is downloaded. In our example, Janus would not make the following references:

3) reference from broader topical subject heading to narrower name heading as a subject (e.g., "Libraries--California" **as a subject** to "Hoover Institution on War, Revolution, and Peace" **as a subject**).

4) reference from unused forms to the legal heading in the subject file (e.g., "Hoover Institute" **as a subject** to "Hoover Institution on War, Revolution, and Peace" **as a subject**).

In summary, if we have some books "about" and some books "by" Hoover Institution on War, Revolution, and Peace then we want references (1), (3), and (4). Unfortunately, Janus gives us only reference (1) and the unwanted reference (2). [Note that as of this writing, tape loaded authority records for names used as subjects provide references (3) and (4). We expect that tape loading authority records for names used as authors will generate reference (1) and we hope that broader subject heading references will not also be indexed as authors.]

To generate the references normally expected, it appears that authority records for names with broader subject cross-references will need to be downloaded twice: once as a subject authority record, then again as a name authority record. Significant editing will probably be required before each downloading: the authority record for the author file will need to have subject cross-references deleted and the authority record for the subject file will need to have its MARC tags edited before it will be recognized as a subject authority record.

A similar problem exists for certain corporate bodies that are represented by jurisdictional geographic headings. For example, the heading "Eugene (Or.)" can be used to describe the city (a corporate body) or the geographic area encompassed by the city. The name authority record for "Eugene (Or.)" is tagged as a geographic, not a corporate, heading. Thus, Janus will only index an unedited authority record for "Eugene (Or.)" as a subject. It appears that the authority record MARC tags must be edited before Janus will recognize this heading as a corporate body as well. Note that a parallel problem exists with authority records for series that serve as titles as well as subjects (e.g., the subject heading for an index to a series).

It appears that significant authority record editing and the maintenance of "duplicate" authority records indexed in separate files will be necessary to get the kind of references we expect Janus to provide. At least two additional factors should be considered before embarking on such a course:

1) OCLC does not provide editing capabilities for authority records. Such editing can be done prior to downloading but is cumbersome at best.

2) If we edit MARC records in a non-standard way we run the risk of serious ramifications in the future. Edited authority records would probably need significant processing before they could be used in a MARC based system.

**Innovative Interfaces Authority Service**

One "feature" SAC would like to see Innovative Interfaces offer is an authority service or local ability to perform automated matching and flipping. Since Innopac users are wedded to the system's internal tags it may be relatively difficult to have authority control run by any other vendor. Since our database is truly our own now (BNA and OCLC do not have copies) it seems that such automated authority control may only be available through Innovative Interfaces.

**Summary**

This discussion has attempted to outline some of Janus' unique and powerful subject searching and authority features. Janus provides subject access never before possible but at the same time it introduces new problems and complexities. Janus is a good system that can be improved. Understanding how Janus works now should help the Library use the system effectively and identify enhancements for the future.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 1) Current/On-going Subject Authority Work

#### a) Processing first-time subject headings

One of the primary tools for on-going authority work is the identification and processing of first-time headings. This section explains what first-time subject headings are, their role in subject authority work, and what it means to "process" a first-time subject heading. In addition, this section summarizes SAC's statistical analysis of first-time subject headings and the implications of that analysis for the training of staff required to process those headings.

**First-Time Subject Headings**

First-time subject headings (FTSH's) are headings used in a catalog for the first time. More precisely stated, they are indexed subject headings from records downloaded over a given period of time that are unique to a particular database at the time of download. In other words, if a downloaded record has a subject heading that is different from those already in the database then it is a FTSH. FTSH's may be unique in their root heading but more often they are made unique by their subdivisions. For example, if the existing subject file consists of only one heading,

| Heading | Records |
|---|---|
| United States--History | 3 |

and the following headings are added through downloading,

1) United States
2) United States--History
3) United States--History--Military

then the first and third are first-time headings. After downloading, the file would appear as follows:

| Heading | Records |
|---|---|
| United States | 1 |
| United States--History | 4 |
| United States--History--Military | 1 |

Another way to think of FTSH's is that they are headings that have a posting of "1" when they are downloaded.

## FTSH's and Subject Authority Work

One way to understand authority work is to consider the implications of doing authority work before versus after downloading.

### Pre-downloading Authority Work

Pre-downloading authority work implies that all subject headings are validated and checked against the database before a record is downloaded. This is always done for original cataloging because the subject headings are composed for the first time (i.e., unlike copy cataloging, there are no existing headings to accept at face value) and because the cataloger wants to contribute correct headings to a shared database. This method of achieving authority control prevents conflicts and split files before they happen but is relatively expensive since it requires validating every heading on copy and checking every cross-reference in the subject file. Most libraries do not have sufficient staff trained in the use of subject headings to attempt all authority work before downloading.

### Post-downloading Authority Work

When authority work is done after downloading, there are a number of ways that automation can simplify or at least reduce the need for validating subject headings. One of these is automated matching and flipping such as BNA did when they maintained the UO Library COM catalog (for further details see Section II.1, Local History of Subject Authority Control). There are also a variety of ways that in-house automation can facilitate authority work. Those automated authority features currently offered by the Innopac system are detailed in Section II.3, Features of Janus and Associated Subject Authority Problems.

The most important of these automated features, the one which can be used to initiate manual authority work, is Janus' capability of generating first-time subject heading lists (FTSH lists). A FTSH list is simply a printout of a particular file assembled as Janus processes downloaded records. That file contains all the first-time headings added to the system since the file was last printed and cleared. Using such lists, the manual part of subject authority work takes the form of "processing" FTSH lists.

**The Logic Behind Processing FTSH Lists**

A possible rationale behind using FTSH lists to initiate manual subject authority work is as follows:

1) at any given time the local subject file consists of both legal headings (current, correctly composed forms) and illegal headings (old or incorrectly composed forms)

2) headings added are compared to the file and unique headings are printed on a FTSH list

3) FTSH's are manually checked and illegal forms changed to their legal form

4) the subject file is checked for consistency with the new heading (e.g., cross-references are searched), and changes made as appropriate.

This sounds fairly straightforward but it is not. We should ask ourselves the following questions: Why are we checking first-time headings? and What is the significance of a unique heading? An answer to these questions might proceed as follows:

If the local subject file is in "good shape" (i.e., a fairly high level of authority control has been achieved) then we can say, with some accuracy, that the headings in the file (and their associated authority records) are internally consistent. By internally consistent, we mean that any given heading agrees with other headings in the file; they can co-exist within the logical framework of the thesaurus from which they are drawn. The file being in "good shape" does not require that it be consistent with the most up-to-date version of the thesaurus (LCSH in our case) only that it be internally consistent.

If the subject file is in the "good shape" described above, then the fact that a newly downloaded heading matches an existing heading is a very good (but not perfect) indication that the newly downloaded heading is consistent with the rest of the file. But recall that such a match means that the incoming heading is not a FTSH. Thus, we can say with some confidence that headings **not on** the FTSH list are consistent with the rest of the file while headings **on** the FTSH list are suspect and should be checked for legality and consistency with our file.

If a given file were completely internally consistent, then you could be certain that any incoming heading that matches an existing heading would be consistent with the rest of the file. However, few subject files in library catalogs are completely internally consistent. The less consistent the file, the less certain one can be that in-

coming headings which match existing headings are consistent with the rest of the file.

The advantage of using FTSH lists to initiate manual authority work in a file that is reasonably internally consistent is that only some of the headings downloaded need to be checked. The automated system screens out those headings that are likely to be consistent with the rest of the file and leaves you with a list (the FTSH list) of headings which should be evaluated before being added.

**The Nature of First-Time Subject Headings**

There are a variety of reasons why a heading might appear on a FTSH list when the local subject file is reasonably internally consistent. These include, but are not limited to, the following:

1) the subject heading represents current practice and
   a) it has never before been used locally,
      or
   b) it represents a change in practice from existing subject headings in the local file

2) the heading is illegally constructed

3) the heading is in an old form that is no longer (or was never) used locally.

The situation is made more complicated if the local file is not internally consistent. Two of the most common causes of inconsistencies are incorrectly composed headings and headings from various time periods all present in the same file. When the local file is very inconsistent then the FTSH list cannot be relied on to screen headings for review. In this case, the fact that an incoming heading matches an existing heading does not mean that it is necessarily in a form one would want to add to the catalog.

For example, the geographic area Siberia is represented in Janus by headings in three forms:

1) Siberia
2) Siberia (R.S.F.S.R.)
3) Siberia (R.S.F.S.R. and Kazakh)

This is an inconsistent file: (1) and (3) are illegal forms while (2) is the current legal heading. If a record employing form (3) is downloaded the heading will not appear on a FTSH list because form (3) is already in the catalog. Thus an illegal heading is added, a bad file is made worse, and nobody is alerted to the problem because the heading does not appear on a FTSH list.

The only way existing authority problems will be identified through FTSH lists is if a unique heading/subdivision combination is added, appears on a FTSH list, and the person clearing the list searches cross-references on the authority record for that heading in the local file. Thus, we cannot rely on the processing of FTSH's to catch existing authority problems. However, in the case of an existing imperfect file the processing of FTSH's ensures that the inconsistency will get no worse and will get better as split files are discovered and fixed.

One of the most important reasons for considering FTSH's is that they are a key to identifying authority records that need to be downloaded. If a reasonably consistent subject file has a full complement of authority records then the existence of a FTSH is a good, but not perfect, indicator of the need to download a new authority record. In such a system all new headings that require accompanying authority records will appear on a FTSH list but not all FTSH's will need authority records. Some FTSH's don't require that an authority record be downloaded because they are just variations on an existing heading in the file. In other words, FTSH's that are unique only by their subdivisions may not require new authority records. Thus, in the course of processing FTSH's, we identify entirely new headings. Such headings require that an associated authority record be downloaded.

## Processing FTSH Lists

In brief, processing FTSH's involves two tasks:

1) checking the legality of FTSH's and changing headings as required

2) searching old forms of the legal heading in the database and making changes as required

### Checking the legality of FTSH's and changing headings as required

Verifying that a subject heading is correct requires finding a Library of Congress subject authority record for some portion of the heading (or creating a local authority record) and verifying that the subdivisions used are legal. (It may bear mentioning here that legality is not synonymous with appropriateness: we are not checking to see if a heading is appropriate to the work, only if it is legally constructed. Appropriateness should be evaluated by the cataloger who has the work in hand.)

For example, if the heading "Moving-pictures--Congresses" appeared on a FTSH list, the person clearing the list would check for an authority record for "Moving-

pictures--Congresses," finding none s/he would go on to check for an authority record for the heading without its subdivision (i.e., "Moving-pictures.") Here an authority record would be found which indicates that "Moving-pictures" is an unused term, and that "Motion pictures" is used instead.

So far it appears that the heading in our example should be "Motion pictures--Congresses." The next step is to check to see if there is an authority record for this full heading. If there is none then the use of the subdivision "Congresses" together with "Motion pictures" must be validated in some other way. This is usually done by consulting the appropriate list of free-floating subdivisions or by pattern (a similar heading used as a model for subdivision practice). Since "Congresses" is on the list of free-floating subdivisions used with topical headings (Subject Cataloging Manual, H1095) and does not violate any other subject cataloging rule we are finished checking the validity of this heading.

If no authority record or cross-reference for the root heading ("Motion-pictures" in our example) is found then additional searching may be required to find an appropriate legal heading established by LC or the heading may need to be established locally. Locally established subject headings are almost always names (personal, corporate, or geographic), although certain types of topical headings may also be established locally. Establishing a name used as a subject is often different from name authority work for authors. The rules for establishing geographic names and certain corporate bodies (e.g., buildings) require the inclusion of particular kinds of hierarchical cross-references. A subject authority specialist is required when creating authority records for subject headings since this task requires familiarity with LC's Subject Cataloging Manual.

The variations on checking FTSH's are numerous. What is shown above is but one example. Rather than try to present a narrative description of the workflow required for processing FTSH's, SAC found flowcharts to be a more succinct method. These flowcharts, one each for topical, name, and uniform titles, are reprinted in Appendix 6, Flowcharts for Processing First-Time Subject Headings.

**Searching cld forms of the legal heading in the database and making changes as required**

The most important part of subject authority work is making sure that the (now legal) FTSH is consistent with the rest of the database. This is done by searching old forms of the heading in the database. These old forms appear as specially coded cross-references in the authority record for

a heading. Not all cross-references from unused forms (UF's) are old forms; some are merely synonyms from which LC considers it useful to provide a cross-reference. In the example above, "Moving-pictures" is an old form of the heading "Motion pictures." The authority record for "Motion pictures" also contains a cross-reference from "Movies." This is a useful reference to make but not a reference from an old form. There is no point in checking such references since there is little chance that a heading that has never been legal is used in the database.

In our example, we would want to check for all occurrences of the heading "Moving-pictures" in our database and change them to "Motion pictures." Recall from Section II.2, State of the File, that identifying such occurrences can be complicated. In this example, the heading is also used in its singular form in other headings (e.g., "Motion picture industry") and in pattern headings of the form "[...] in motion pictures." It is important to remember that as headings are changed their associated authority records must be changed as well. If this is not done, you end up with new headings and old references; a confusing situation indeed.

Another issue that bears consideration is how far to go when checking for consistency in the database. The outline "Staffordshire Bull Terriers as a Narrower Term for Civilization" (see Section II.3, Features of Janus and Associated Subject Authority Problems) graphically illustrates the way subject headings are tied to one another through related, broader, and narrower term references. While it is not practical to check the entire hierarchy associated with each FTSH, at a minimum all references to an old heading should be purged from the file. Without updating such references we get the situation where the system says

"A" see also "B"
then "B" see "C"

and the user is left wondering why they were sent through a loop instead of being told

"A" see also "C"

The problem is that the authority record for "A" does not know that "B" has changed to "C."

One might envision the following steps being taken as a reaction to finding a "one-to-one" change in a subject heading:

1) an old authority record for the changed heading will need to be replaced by the new one

2) all immediately narrower terms will need new authority records referring to the new broader term

3) any immediately broader terms that have also changed will need new authority records (since a broader term appears as a "see also" cross-reference on the authority record for the FTSH)

4) all related terms will need new authority records referring to the new related term

5) if any of the related, immediately narrower, or immediately broader terms have themselves changed then the process repeats for each changed heading

(Note that 2 and 3 are different because of the structure of LCSH authority records: broader terms are included in the authority record for a narrower term, while references to narrower terms are generated by broader terms indexed as "see-also" cross-references in the authority records for those narrower terms.)

If this kind of extended authority record updating is not made, then the reference structure of the subject file will be wrong; old authority records will generate out-of-date references and new authority records will refer to unused terms. The only other way to handle the problem is to locally edit authority records to reflect the fact that a mixture of new and old hierarchically related terms are used. In a hierarchy significantly altered by LC, a tremendous amount of work could be generated.

## Statistical Analysis

It seems likely that authority work done in-house will take advantage of Janus' FTSH list capability. For this reason, SAC felt the need to process a significant number of FTSH's and look at the kind of problems encountered. We processed a total of 526 FTSH's from four days of cataloging. Since Janus did not include authority records at the time of our study, we made no attempt to quantify the number of authority records needing to be changed. SAC had several specific questions to address. The most important of these questions and their associated answers are below:

**1) How many FTSH's are generated for each record downloaded?**

SAC was interested in determining how much subject authority work is required for the average record downloaded. This information can be used to predict authority work given an expected level of cataloging

production. SAC determined that .876 FTSH's were generated for each record downloaded. Thus, a typical day of downloading (approximately 125 records) will generate approximately 110 FTSH's to be processed.

**2) What percentage of FTSH's are topical, name, or uniform title?**

The work required for each type of heading is somewhat different, so it is useful to know how many of each we can expect. SAC found that FTSH's broke down along the following lines:

74% of all FTSH's are topical
25% of all FTSH's are personal, corporate, conference, or geographic names
1% of all FTSH's are uniform titles

SAC also found that the majority of name subject headings are geographic.

**3) What percentage of FTSH's are legal?**

SAC was interested in finding out what portion of FTSH's need to be changed before being added to the catalog. We determined that 90.1% of FTSH's are legal. Using the binomial distribution we can say with 95% confidence that between 6.6 and 11.5 percent of the headings on a FTSH list can be expected to be illegal. Another way to say this is that 5% of FTSH lists will have fewer than 6.6% or more than 11.5% illegal headings.

It is important to note that Janus' subject file does not appear to be especially "clean" (see Section II.2, State of the File). Thus many illegal FTSH's may be matching on existing illegal headings in our file and so not appearing on FTSH lists. Were the state of local authority control better, more illegal FTSH's would likely appear (especially from retrospective conversion projects).

**4) How many changes to existing records are needed to achieve a consistent file when a FTSH is added?**

SAC found that adding 526 headings to the file created a need to fix the following headings and records:

| Headings | Records |
|---|---|
| 241 topical | 858 |
| 543 geographic | 802 |
| 0 uniform title | 0 |
| Total 784 headings on | 1,660 records |

SAC finds these to be remarkably large numbers. They are especially so when one considers that these are only changes required by the heading added and/or its geographic subdivision. Since no authority records were in the system at the time of our study, SAC did not attempt to determine how many authority records or broader/narrower/related terms would need to be changed to achieve consistency. If hierarchically related terms were taken into account, these numbers would no doubt grow larger still.

It is important to note that this result is probably not so much a prediction of how much work subject authority will generally require as it is an indicator of the state of the database. As the state of the file improves, one would expect to see the need for database changes to decrease. This result does indicate that if no clean-up projects are done first, then a tremendous amount of work will be generated when we start to process FTSH's.

**5) What percentage of FTSH's could a clerk with special training verify? What training is required? and How often would mistakes be made?**

These are important questions when planning for staff needed to process FTSH's. LCSH is not a true authority file. A true authority file consists of every legal heading along with its cross-references. In a true authority file, one need only look up the correct form of a heading. For example, LC's name authority file is a true authority file because every new name used by LC is added to this file. The ERIC thesaurus is another example of a true authority file; this thesaurus delineates every possible descriptor used in the ERIC database. In contrast, SAC found that only 5.4% of FTSH's were represented in full by LCSH authority records.

One might well question what LCSH is, if not an authority file. LCSH is a list of some, but not all, topical root headings that explicitly excludes most heading/subdivision combinations and many headings formed by pattern. Headings are composed by consulting LCSH in conjunction with lists of free-floating subdivisions and the Subject Cataloging Manual. Further, there are no subdivisions in LCSH that are truly "free-floating." No subdivision can be assigned to every heading; subdivisions must be added in a standardized order and each has associated rules for assignment.

The point here is that most subject headings cannot be verified through a look-up alone. The "thesaurus" from which LC subject headings are drawn is a list of all the headings that can be composed by following a particular set of rules (LC's Subject Cataloging Manual) and consulting

several lists of terms (Library of Congress Subject Headings and lists of free-floating subdivisions). This complicates subject authority work because one must understand all the ways that a subject heading can be legally composed before one can declare a heading illegal.

SAC feels that it is unreasonable to expect anyone but a librarian to master the Subject Cataloging Manual, but we can expect support staff to receive a certain amount of specialized training. We suggest that a clerk could be expected to have the following tools:

* Library of Congress Subject Headings
* Free floating lists for various types of headings

and possess the following skills:

* An understanding of LCSH tagging
* An understanding of free-floating subdivisions
* An understanding of geographic subdivision practice (probably the most difficult of these skills to learn)

Given this hypothetical clerk with only partial knowledge of subject cataloging practice (chiefly lacking an understanding of the Subject Cataloging Manual), SAC set out to determine:

1) what portion of headings our hypothetical clerk could verify, and
2) how many mistakes would be made

We assumed that all headings the clerk was unable to verify would be passed on to a subject authority specialist to make a final determination of legality. Thus the clerk never makes a final determination of illegality. The kind of mistake SAC is interested in is how often the clerk incorrectly defines an illegal heading as legal. A typical example of such a mistake is when a heading is declared legal because the root is legal and subdivision is "free-floating" but, unknown to the clerk, the Subject Cataloging Manual does not allow the combination.

For example, the subject heading "Pottery--Exhibitions--History" is illegal even though "Exhibitions" and "History" are on the list of free-floating subdivisions (Subject Cataloging Manual, H1095) and "Pottery" is a legal root heading. This heading/subdivision combination is illegal because the Subject Cataloging Manual does not allow the "History" subdivision to be used on certain inherently historical topics. Subject Cataloging Manual, H1647 specifically disallows further subdivision of "Exhibitions" by "History." Our hypothetical clerk does not know this and so incorrectly declares the heading legal. This is but one

of many rather obscure rules catalogers follow when composing subject headings. It is SAC's opinion that use of the Subject Cataloging Manual is an inherently professional skill and should not be expected of a subject authority clerk.

In the course of processing FTSH's, SAC made the following determinations:

* only 5.4% of FTSH's are represented in full in LCSH. Thus more than "look-up" training is required to process 95% of the headings

* 84% of FTSH's can be determined as legal by our specially trained clerk

* 7.7% of FTSH's require knowledge of the Subject Cataloging Manual to verify. Thus, these require a subject authority specialist's input

* only 1 out of 526 FTSH's (or .25%) are incorrectly declared legal by our clerk with specialized knowledge

These are very useful findings. They indicate that much of the processing of FTSH's can be done by a specially trained clerk and that very few mistakes are made. Over time, one might expect our hypothetical subject authority clerk to validate more than 84% of FTSH's by learning certain recurring rules from the Subject Cataloging Manual.

**Summary**

Processing first-time subject headings is one of the keys to doing subject authority work on Janus. The efficacy of this method of doing authority work is determined, to some extent, by the state of the subject file. In the absence of more sophisticated tools, the first-time subject heading list is of preeminent importance for authority work. SAC has determined that these lists cannot be processed by a clerk alone, but that the majority of the headings can be screened by a well-trained subject authority clerk before being forwarded to a subject authority specialist.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 1) Current/On-going Subject Authority Work

#### b) Downloading Library of Congress source authority records

A major component of subject authority work is the downloading of authority records that correspond to new subject headings entering the database. When a subject heading is reported on the first-time headings list and is identified as having one or more authority records with cross-references, those authority records need to be downloaded into Janus.

The Janus database includes Library of Congress source authority records from a tape created by BNA. To understand what authority records are included on the BNA tapes, it is important to understand how they were created.

**BNA-Created Authority Records**

In June of 1989, the UO Library requested that an authority record tape be created from the final version of the database maintained by BNA. The process BNA used to provide subject authority records is more complicated than that for names, because more than one authority record can be generated by a single subject heading. BNA refers to this process as "extracting records" while SAC calls this "chopping." The chopping process provides an authority record for a subject heading in its full form if one exists, and it also provides authority records for shortened versions of that same subject heading. These shortened forms of the subject heading are achieved by taking the full form of the heading and removing the last subdivision. This process is repeated until only the root subject remains.

Thus, the authority work needed for a single subject heading is multiplied by the chopping procedure because authority work will need to be done for each of the resulting headings. For example, the heading, "United States--Armed Forces--Medical personnel--Malpractice" would be chopped in the following way by BNA:

*United States--Armed Forces--Medical personnel--Malpractice

*United States--Armed Forces--Medical personnel

*United States--Armed Forces

*United States

BNA supplies authority records for three of the four headings above, because only the first, third, and fourth headings have authority records with cross-references in LCSH. The second heading has an authority record, but it is one without cross-references and only contains notes.

Janus accesses authority records by the cross-references those records contain. When a patron searches for a heading in Janus that is listed as an unused or related form (a 4xx or 5xx field) that patron will be directed to the correct heading (1xx) for access to the desired information. Therefore, authority records without cross- references that just list the correct form or contain notes, are useless records in Janus because they provide no direction to a correct form. Because of the way authority records are used by the Janus system, the Library requested that BNA give us only those authority records with cross-references. SAC expects that the UO Library will continue the practice of adding only those authority records with cross-references to the Janus database to avoid taking up valuable computer memory with records that generate no cross-references.

UO catalogers edit LC name authority records for both the subject and author files on a regular basis to reflect information found on a piece in hand or to add information that LC did not have at the time the authority record was created. This type of editing usually takes the form of the addition of "used for" cross-references. When this situation occurs, the authority record will need to be edited for the additional information before it is downloaded into Janus. This will allow authority records that occur in the online authority file without cross-references to be loaded into Janus with the addition of locally added cross-references.

**Downloading**

SAC feels that the BNA record extraction logic is sound and recommends emulating it in the local downloading of subject authority records. After an FTSH list has been processed, downloading of authority records for the new headings on that list will occur. The following example outlines this procedure by following one heading through the downloading process:

* United States--History--Revolution, 1775-1783--German mercenaries--Bibliography

**1.** Determine the fullest form of the heading represented by an authority record. For the heading listed above this form is:

* United States--History--Revolution, 1775-1783--German mercenaries

(No authority record exists for the heading when it contains the further subdivision, "Bibliography.")

**2.** The heading is chopped down into its component parts and all corresponding authority records are identified:

* United States--History--Revolution, 1775-1783

* United States--History

* United States

In this example, each chopped heading listed above is represented by an authority record in LCSH.

**3.** Determine if any of the authority records are already present in Janus. We would find that "United States--History--Revolution, 1775-1783," "United States--History," and "United States" are already represented by authority records in Janus (this assumes a full complement of authority records for existing headings is present in Janus). Thus, we would be left with one authority record that needs to be downloaded for complete subject authority record representation of our single subject heading example:

```
 ARN: 2058704
1 010     sh 85140160
2 040     DLC $c DLC
3 053     E268
4 151  0  United States $x History $y Revolution, 1775-1783
$x German mercenaries
5 450  0  Hessians in the American Revolution
6 550  0  German mercenaries $w g
7 550  0  Hessian mercenaries $w g
```

**4.** In the interest of avoiding conflicts between authority records and subject headings occurring in the bibliographic records, Janus will need to be searched for subject headings corresponding to any of the cross-references (cf. Section III.1.a, Processing first-time subject headings). Because of the hierarchical relationship represented in LCSH, all narrower, broader and related references will have to be checked for consistency.

**5.** New authority records generated by the first time heading are downloaded. In the example above the authority record for "United States--History--Revolution, 1775-1783--German mercenaries" is the single record that would need to be downloaded.

## Downloading Complexities

SAC has identified two complexities inherent in the downloading process that will need to be addressed.

### "Duplicate" Authority Records for Names in the Author and Subject Files

A complexity that arises when considering downloading subject authority records into Janus is that separate authority records are required for names used as subjects and names used as authors. For example, when a personal or corporate name occurs as a subject heading that needs an authority record, there is a chance that the same name may also be present in the author file. When this situation occurred as BNA generated our authority records they gave us two separate but identical authority records for downloading: one for the author file and another for the subject file. As a result, more computer memory is needed to maintain duplicate authority records and more staff time will be required if the decision is made to keep both files consistent. Although at present this is the only way that Janus is able to provide authority records for name headings used as both subjects and authors, it is a problem for both the Library, in terms of downloading, and for patrons, in terms of inconsistencies that may exist between the two files. This complexity is fully discussed in Section II.3, Features of Janus and Associated Subject Authority Problems.

### Authority Control of Geographic Subdivisions

Another question identified by SAC is whether the Library should consider providing authority records for geographic headings used to subdivide topical subject headings. For example, the subject heading, "Museums--Germany (West)--Regensburg," is composed of a topical subject heading subdivided by the German city Regensburg. Regensburg occurs in the database only as a geographic subdivision of a topical heading, not as an actual subject heading in its own right. Regensburg would be chopped from the root heading "Museums" in the downloading process described above and no authority record for the geographic name, "Regensburg (Germany)," would ever be downloaded into Janus. This situation is one that concerns SAC for a variety of reasons.

Modern online catalogs offer some very powerful searching features that allow access to information embedded within a subject string (e.g., subdivisions). The development of keyword access to subjects, although not present at this time can be anticipated. This type of access indicates that some authority control over

subdivisions might prove to be worthwhile. Using the example of the German city, Regensburg, the usefulness of an authority record can be clearly seen. The subject heading occurs on a bibliographic record in the database as:

Museums--Germany (West)--Regensburg

However, with rotation, the heading is also indexed and displayed as:

Regensburg Museums Germany West

What makes a geographic authority record for this subdivision worthwhile in this specific situation is that Regensburg is also known as Ratisbon, which if entered as a search term would miss the rotated heading above completely. With an authority record, a cross-reference from Ratisbon to Regensburg would be generated.

```
  ARN: 361084
1 010       $n 79129587
2 040       DLC $c DLC
3 151   0   Regensburg (Germany)
4 451   0   Ratisbonne (Germany)
5 451   0   Ratisbon. $w nnaa
6 451   0   Ratisbon (Germany)
```

If the authority record above was downloaded for the geographic subdivision of Regensburg, a patron searching under "Ratisbon" would be informed that Ratisbon is not used by the Library and that "Regensburg (Germany)" is used instead. The search "Regensburg (Germany)" would not produce an exact match but would result in the display of a browse screen that includes the rotated heading, "Regensburg Museums Germany West."

Although SAC feels that the idea of providing authority records for geographic headings that only occur as subdivisions is a good one, several complications arise from doing so. The rules for indirect subdivision make it impossible to provide an authority record that will exactly match the geographic name in its indirect form. For example, the authority record for the correct form of the geographic subject heading of Regensburg is "Regensburg (Germany)." However, when the city is used to subdivide a topical heading it is entered indirectly with the country as the first subdivision and the city as the second, "Museums--Germany (West)--Regensburg." Therefore, we will never be able to get an authority record for the heading exactly as it occurs in its indirect form.

When considering the complexities of downloading authority records for headings that only occur as geographic subdivisions, we must realize that not only will we be

unable to obtain an authority record that exactly matches a heading as it occurs in its indirect form, but we will also be getting an authority record that does not match an actual subject heading in our database. This becomes problematic when an authority record for a geographic heading in its **direct** form is downloaded to represent its use as a subdivision in its **indirect** form. The example of a patron searching for information on Regensburg with the unused form of the name, "Ratisbon," illustrates this point. When the subject heading "Ratisbon" is searched, the patron would be directed to search under "Regensburg (Germany)," however this heading does not exist in the database.

SAC has identified this as an area that will provide many complexities, but suggests that the downloading of authority records for geographic subdivisions be considered. Such authority records should prove to be very useful, especially in situations where a place is known by several names (e.g., Peking and Beijing; Saigon and Ho Chi Minh City, etc.). The Library should consider providing authority records for such embedded geographic subject headings so that patrons are directed to the correct form, even though that form only occurs through rotation.

**Summary**

The downloading of authority records should start as soon as the Library begins to process first-time subject heading lists. A basic downloading procedure will have to be worked out in detail. Complexities are expected to occur within the downloading process, most notably in terms of the Janus' inability to access one authority record for use in two (name and subject) files.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 1) Current/On-going Subject Authority Work

#### c) Establishing University of Oregon source authority records

When discussing the downloading of authority records in the previous section, we have been concerned with LC source authority records only. It is often the case, however, that a subject heading in the form of a personal, corporate, conference, or geographic name needs to be established and assigned in local cataloging practice because it is not represented by an LC authority record. Topical subject headings can also be established by pattern in conformance to LCSH (e.g., the heading, "Holothurians" with a cross-reference from "Sea cucumbers"), or as local, non-LC-type subject headings (690's). These subject headings are set up by catalogers in accordance with the specifications of AACR2R and LC's Subject Cataloging Manual. When establishing new headings, an authority record with cross-references may also need to be created. Establishing these local authority records is another important component of the authority record downloading process.

SAC has identified at least three situations in which a local authority record might be created:

1) Establishing local authority records in conformance with LC practice

2) Adding extra references to authority records otherwise in conformance with LC practice

3) Creating local authority records that LC would not establish

The UO library will need to decide whether to follow LC's authority record practice exactly or to deviate, and if to deviate, to what degree.

**1) Establishing local authority records in conformance with LC practice**

This first situation in which we might create an authority record does not present a problem in terms of conformance with LC practice. If a subject heading is set up at the local level and no authority record exists in the OCLC online authority file, we can establish the heading with cross references as LC would. For example, LC indicates in the Subject Cataloging Manual that "engineering constructions" are non-jurisdictional geographic names and

should have an authority record formulated according to the following model:

[distinctive name] [generic term] ([geographic qualifier])

UF [alternate name(s)] ([geographic qualifier])

BT [type of feature, structure, etc.]--[country or first order division]

Therefore, if a UO cataloger were to establish a subject heading for an "engineering construction," an authority record could be created using the above model. An example of this situation is the Indian Creek Dam used as a subject heading, and it would be set up in the following way:

Indian Creek Dam (Or.)

BT Dams--Oregon

If this authority record were downloaded into Janus, patrons looking for information with the subject heading, "Dams--Oregon," would be directed to "see-also" the subject heading, "Indian Creek Dam (Or.)," as well as any other headings which carry the broader term "Dams--Oregon." This locally established authority record is in complete conformance with LC practice and could be downloaded with the knowledge that if LC were to establish the heading it would be the same.

**2) Adding extra references to authority records otherwise in conformance with LC practice**

To strictly follow LC policy is relatively straightforward for anyone trained in subject cataloging practice. A more complex situation arises if the Library chooses to differ from LC subject practice by adding cross-references that might improve subject access but for which there are no provisions in the Subject Cataloging Manual. In such a situation, the UO library might add a cross-reference thought to be useful where LC would not. For example, the addition of a broader term for a geographic region is generally prohibited by the Subject Cataloging Manual, but the UO Library might decide to add a broader term cross-reference if it was felt that the result would enhance subject access. The authority record for the geographic region of Southern California illustrates the situation:

ARN: 2114565
1 010 sh 85018898
2 040 DLC $c DLC
3 151 0 California, Southern
4 451 0 Southern California

In the above authority record, LC has not added the broader term cross-reference, "California." The UO Library might find such an addition useful so that patrons looking for subject information with the heading of "California" would be directed to "see-also" the related (i.e., narrower) heading of "California, Southern." The option to add such broader term cross-references exists and could provide much improved access to certain headings. However, decisions on when to add such references would need to be made by a subject authority specialist.

**3) Creating local authority records that LC would not establish**

SAC believes that circumstances will arise where the UO Library will want to create authority records that LC would not. Some subject headings are formulated in accordance with the Subject Cataloging Manual for addition to bibliographic records, but no subject authority records are created. An example of this type of subject heading is the geographic area encompassed by the Willamette Valley. The Manual indicates that subject headings for river valleys should be formulated by adding "the word **Valley** to the name of the river;" therefore, the heading for the Willamette Valley is formulated as follows:

Willamette River Valley (Or.)

Although "Willamette River Valley (Or.)" is the authorized form of the heading, it differs from the common usage of the geographic name, Willamette Valley. The authorized form of the heading and the form in common use would file many entries apart on the Janus browse screen, making the authorized form even harder to find. Although LC would not create an authority record in such a situation, the UO Library might want to consider doing so to improve access to the authorized form of the heading. Such an authority record would identify the authorized form and provide a cross-reference from the common form of the name:

Willamette River Valley (Or.)

UF Willamette Valley (Or.)

If such an authority record were to be downloaded, patrons looking for information on the Willamette Valley would be directed to look under the subject heading, "Willamette River Valley (Or.)."

**Current status of establishing local subject headings**

In preparation for establishing local subject authority records, UO catalogers began to document new subject headings and edit LC source authority records in June of 1989. Catalogers have the option of creating minimal level authority records for locally established subject headings where no LC authority record exists. At this time, catalogers can optionally add cross references for unused, broader, narrower, or related terms. These subject authority records are being saved until downloading of local authority records into Janus begins. When downloading of such records does commence, the headings established by catalogers will need to be reviewed by a subject authority specialist. This person will need to verify that the headings created are correct, determine hierarchical subject relationships, and review the corresponding authority records. After verification and review, the locally established records can be downloaded in the same manner as LC source authority records.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 1) Current/On-going Subject Authority Work

#### d) Externally generated change requests

This aspect of current/on-going subject authority work includes change requests on headings that are identified through any channel other than what is determined to be the regular subject authority work routine. This includes problems identified by catalogers, when the heading involved will not be corrected through processing the first-time subject heading lists, and also patrons and Library staff. These requests fall into a variety of categories, requiring different levels of expertise to provide a response. From simple to complex these include: typographical errors and mistakes in punctuation; multiple forms of a single subject heading; requests to add additional subject headings to a bibliographic record; and matters of opinion on the appropriateness of the subject headings assigned. Once the solution to each request has been determined, those requiring fixes in the database will also range from simple to complex--those involving only a few headings to those involving large numbers of headings and multiple related headings.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 1) Current/On-going Subject Authority Work

#### e) LC generated changes: Weekly list/CSB

The Library of Congress distributes two publications that assist in keeping the cataloging community abreast of changes in subject headings and subject heading practice. If a library's catalog were up-to-date with these changes, and were able to remain so, maintenance of the subject heading portion of the database would be minimal. While the availability of these publications makes such currency theoretically possible, the reality is that few libraries have the resources to take full advantage of this opportunity. As these publications are described, however, it will become clear that if it were decided to routinely utilize even part of the information presented in them, the Library's subject headings would be more up-to-date and catalogers would have a better chance of keeping current with changes in subject cataloging practice at LC.

**Weekly list**

The L.C. Subject Headings Weekly List, as described in its preface, is "a by-product of the system in the Subject Cataloging Division of the Library of Congress for the submission, review, and approval of new, changed, and cancelled subject headings and references." Inclusion in one of these lists signifies the earliest published appearance of a subject heading which falls into one of these categories. The Weekly list comprises the most current official notification obtainable. Approximately 50 lists are produced each year, averaging 20-25 pages, generally with around 10 subject headings per page. The Library currently receives these lists on deposit; the latest issue we have received at any time is three to six months old.

At the end of each Weekly list, under a section entitled "Summary of decisions, editorial meeting #[ ]" one or two more lists may appear. The first is a list of subdivisions to be added to or deleted from LC's lists of free-floating sudivisions; while this information is available in subsequent updates to the LC Subject Heading Manual, these updates do not appear very frequently and the only way to identify what has changed is to compare the new and old lists entry by entry. The second is a list of "proposals for the name authority file," which indicates when a heading first established in the subject authority file is being considered for re-establishment in the name authority file. This change can result in the loss of subject cross-references in the heading's authority record,

a loss which would be significant if the name were ever subsequently used as a subject heading. Such information is of potential value to staff doing subject authority work.

**Cataloging Service Bulletin**

Subject headings in the Weekly list are cumulated in the Library of Congress Cataloging Service Bulletin (CSB), a quarterly publication currently received by the Library on deposit and through a Catalog Department subscription. In the CSB, new headings are printed in a section entitled "Subject headings of current interest" and cancelled and replacement headings appear in a section entitled "Revised LC subject headings." Whether this information were reviewed on its first appearance in the Weekly list or later in a CSB, it would prove valuable to circulate such information among both catalogers and reference librarians, as providers and users of subject information in the database. In terms of database maintenance, it would provide a means of preventing conflicts before they occur.

In addition to these lists, the CSB's regularly contain announcements, articles and questionnaires concerning LC subject heading practice and policy that are of significant value to catalogers assigning and reviewing subject headings and of potential value to reference staff and other users of the database. This is the only official avenue for keeping current with LC subject heading practice. Within the last year, topics addressed in this format have included: music subject headings; establishing subject headings for the Library of Congress; assigning subject headings at two hierarchical levels; tagging and subfield coding of subject headings for groups of countries and regions; direct versus indirect local subdivision; and the new microfiche format of LCSH. Questionnaires have been distributed and the results published on: name authority records versus subject authority records; revised LC subject headings; and the value of the Weekly list. The dialogue these topics and questionnaries could generate among catalogers and reference librarians is crucial for shaping future subject authority policy at the UO Library.

**Conclusion**

In general, the information on the status of subject headings and subject heading practice included in the Weekly list and the Cataloging Service Bulletin is essential to anyone working with subject headings or doing subject authority work. Within a system of total subject authority control in the Library, some means must be provided to utilize the contents of these publications.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 2) Retrospective Subject Authority Work

Retrospective subject authority work will to some extent be accomplished as a by-product of current/on-going subject authority work, in that new headings entering Janus will initiate "fixes" on older or incorrect forms of the same headings. When problems are identified, a decision will need to be made as to whether or not they will be dealt with in the course of current/on-going subject authority work or will be handled as part of a retrospective project.

SAC's intended targets in this section of the report are several large problem areas in the subject files of Janus that were identified by the Committee in the process of its investigation and that may best be dealt with on a project basis. Unlike current/on-going subject authority work, retrospective subject authority work is a one-time undertaking--once accomplished, this aspect of subject authority work melds into the routines for current/on-going subject authority control.

Four potential areas for projects in retrospective subject authority work have been identified by SAC:

a) Conflicts identified through the BNA match
b) Conflicts identified by SAC
c) Accumulated first-time subject heading lists
d) LC generated changes: Weekly list/CSB

The first three areas describe situations where the same subject heading may exist in Janus in multiple forms, one being the authorized heading, and the other(s) unauthorized. This is cause for concern since the user, having located materials on a certain subject, has no way of knowing that additional materials are also represented in the system under the same subject heading in a different form.

The last area describes the situation where the current form of a subject heading has been changed or updated by LC, but where the newly authorized heading has yet to enter Janus. In this case, all the entries in the Janus subject file, while not consistent with current LCSH, are at least internally consistent.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 2) Retrospective Subject Authority Work

#### a) Conflicts identified through the BNA match

In June of 1989, the UO Library had a subject authority tape produced from the database BNA maintained for the Library. (cf. Section II.1, Local History of Subject Authority Control).

In the matching process, subject headings on bibliographic records were run past the LC name and subject authority files. If an exact match on a subject heading was found, the appropriate authority record was downloaded in its entirety onto our authority tape. If the Library's form of a certain subject heading existed as a "used for" reference on an authority record, the record for the correct form of the subject heading was downloaded onto our tape, and the conflicts identified in this way were printed out on a 1,474 page list that BNA supplied with the tape. This list, known as the "Subject Authority Verification Edit List," identifies over 19,000 changes that need to be made to bibliographic records in Janus.

**"Subject Authority Verification Edit List"**

While an appearance on the "Subject Authority Verification Edit List" does not with certainty indicate that a discrepancy exists in our subject file between two forms of the same heading (i.e., all of our headings may have been in an "incorrect" form), it certainly does imply a great potential for that to be the case. The fact that the list has been provided to us as a by-product of the production of the authority tape affords the Library an excellent oppportunity to bring a great number of subject headings back into line with current practice, and undoubtedly to solve many conflicts in subject heading usage along the way.

It should be noted that this list does not tell the whole story about the state of the subject file even at the time the authority tape was run in June of 1989. Any subject headings in the Library's database that did not exactly match either an authorized heading or a "used for" reference on an authority record were simply passed over, with no list compiled for their identification and subsequent review. These headings which match neither authorized forms nor "used for" references occur for a variety of reasons ranging from simple typographical errors to errors in practice. So, even at the end of this project, we are still left with a potentially large number of legitimate subject headings that are not represented by authority records, and an unknown number of subject headings that are still incorrect.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 2) Retrospective Subject Authority Work

#### (b) Conflicts identified by SAC

Early in its investigation, the Committee began keeping a notebook of subject authority problems appearing in Janus that eventually will need to be addressed and corrected. Some of these have been described in detail in Section II.2, State of the File. To review, the problems that fit into this category fall into the following groups:

1. Those caused by the co-existence in the subject file of old and new forms of the same topical subject heading

2. Those caused by changes in geographic subject headings

3. Those caused by changes in treatment of names and uniform titles used as subject headings

4. Those caused by changes in subdivision practice

5. Those caused by eliminating the practice of the "city flip"

The problems in these groups, while they may seem enormous in magnitude, are finite. Given sufficient staff time, the conflicts identified so far by SAC could easily be fixed. It must be noted, however, that to date SAC has run across only a small number of the conflicts that exist within each group. Once the problems identified by SAC are eliminated, further problems of these types would fall into the genre of "Externally generated change requests," part of Current/on-going Subject Authority Work (Section III.1.d).

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 2) Retrospective Subject Authority Work

#### (c) Accumulated first-time subject heading lists

Since April 12, 1989, SAC has been accumulating the first-time subject heading lists produced each day by Janus as a system by-product of downloading bibliographic records into the database. During this time, there has been no subject authority control done on these headings. Analysis of these lists, using the same routines described in Section III.1.a, Processing first-time subject headings, would complete subject authority work for that portion of the database added since April 1989. As of March 1990, the cumulated lists represent over 25,000 subject headings which have yet to be reviewed and processed. While the number of these headings might make this project seem formidable, it is of finite dimensions and one that could be accomplished with good results over a period of time. It is important to note that the daily cumulation of these lists goes on even as a procedure for dealing with them is developed, so the sooner a routine for subject authority control of these headings is initiated the more manageable the project will be.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 2) Retrospective Subject Authority Work

#### (d) LC generated changes: Weekly list/CSB

Current/on-going subject authority work that could be facilitated and enhanced using the Weekly list and the Cataloging Service Bulletin has been described in Section III.1.e, Current/On-going Subject Authority Work, LC generated changes: Weekly list/CSB. In terms of retrospective work, perusal of the contents of these publications would fall into two categories:

1. That dealing with the subject heading lists appearing first in the Weekly list and then cumulated in the CSB as "Subject headings of current interest," "Revised LC subject headings," and "Subject headings replaced by name headings"

2. That dealing with LC subject heading policy as described in the articles and notifications found within the CSB

Generally, any information appearing in the CSB regarding LC's subject heading policy is discussed by the catalogers during their regular review of this quarterly publication. Retrospectively, it might be useful to compile and distribute the information included therein to staff outside the Catalog and Serials Departments.

The subject heading lists, however, present a larger problem. Depending on the extent and timing of other retropsective subject authority projects undertaken, the value of retrospectively reviewing the lists in the CSB and making all the required changes to our database will need to be determined. For instance, many of the changes reported in the Weekly list and CSB will duplicate corrections reported in the BNA produced "Subject Authority Verification Edit List." So, if the first retrospective subject authority project undertaken were to go back through the CSB to June 1987, reviewing the revised subject heading lists included and making the necessary changes in our database, many of the corrections identified as conflicts in the BNA list would already be made. On the other hand, if the BNA list were corrected first, fewer of the headings reported in the CSB would surface as problems in our database. Ideally, the database would reflect all the subject heading revisions ever reported by LC in the Weekly list and the CSB, whether the change caused a conflict in the database or not. This would be a worthwhile but time-consuming project, and its priority would need to be determined when considered along with a total plan for doing retrospective work in subject authority control.

## III. Components of Total Subject Authority Control at the University of Oregon Library

### 3) Informational Resource for Subject Authority

Planning for and taking the first steps toward the implementation of an ongoing subject authority control program is a significant breakthrough for the University of Oregon. It has been over a decade since local subject authority control has been a reality, and the prospect of reassuming responsibility for its administration has demanded a great deal of thought, study and preparation. Over the course of the Committee's work, it has become increasingly apparent that there are benefits to be derived from establishing subject authority control that lie beyond the confines of setting the direction for producing written routines and managing workflow in Technical Services.

The work of the Subject Authority Committee has unearthed a wealth of information about subject searching features in Janus; the characteristics of LC subject headings; the state of our local subject file; the structure of LC subject authority records; and the tools available for unraveling the complexities of subject analysis. Many of these areas are covered in SAC's final report. This information could be profitably and widely shared as a means of restoring the knowledge and rebuilding the expertise that has atrophied in the absence of maintaining local subject authority control.

The work of the Committee has already generated a great deal of interest on the part of people both within and outside of Technical Services--interest that reflects a steadily increasing amount of attention devoted to subject access in library literature, in OCLC research projects and within different groups at ALA. As a first response, SAC would like to see its report widely distributed and made available to any Library staff member interested in or concerned about subject access to materials in Janus. Ideally, the report will serve to raise the collective level of "subject consciousness" and provide a catalyst for discussions that will cut across all the organizational divisions of the Library.

Beyond fulfilling initial informational and educational needs, the investigations conducted, the statistical data collected and the materials gathered to produce the report also form a base upon which a new, on-going resource could be built--one that could provide a place for Library staff and patrons to turn when subject access questions arise. This resource, composed of both knowledgable staff and tools for subject work, could enhance the understanding and effectiveness of subject access in a variety of ways including:

**Investigating problems and inconsistencies in the subject database**

Problems with headings, references, displays or subject analysis encountered by Library staff and patrons could be passed along for consideration and resolution.

**Providing support to Library instruction**

Instructional aids could be developed to explain the nature and purpose of subject analysis, how subject headings are constructed, how they are manipulated in the online environment and what searching strategies may be most effective. In addition, guest lecture services could assist in providing up-to-date information about system functionality and subject cataloging practices, together with instruction in using subject access tools like LCSH and EPIC on OCLC.

**Creating opportunities for staff and patrons to extend their grasp of subject analysis and authority control**

Formal and informal public forums could be held to offer Library staff and patrons the opportunity to learn more about subject analysis and authority control. These meetings would offer a chance for catalog users to ask questions and offer suggestions for enhancing subject access.

**Monitoring and interpreting developments at regional and national levels**

At the national level, efforts could be made to attend, interpret and disseminate the proceedings of ALA groups like the ALCTS/CCS Subject Analysis Committee (and its subcommittees) and the ALCTS/LITA/RASD Committee on Representation in Machine-Readable Form of Bibliographic Information where subject cataloging and authority control issues are discussed. Regionally, efforts could be made to establish on-going dialogues with other institutions about subject issues, policies, shared databases and mutual concerns.

**Initiating new research**

Subject access is an extremely fertile area for investigation and research. Several ideas that have been suggested as possibilities for local research include developing computer-based tools for librarians and patrons and exploring the transaction logs that Janus provides (e.g., analyzing searches to better understand patterns of use and to discover new subject headings that may need to be

established or cross-references that may need to be added to authority records).

**Planning for technological change**

As both hardware and software continue to develop and online systems grow in sophistication, careful observation, study and planning will be needed to make decisions about implementing new ways of accessing subject data (e.g., providing alternatives to Boolean-based logic searching and handling multiple thesauri in the online environment).

Implementing local subject authority control means that policies will need to be settled upon and procedures written, and it is to that end that this document is primarily directed; however, it is also the opportunity to utilize a new resource--an opportunity that the Subject Authority Committee hopes will be taken in order to improve subject access at the University of Oregon.

## IV. Recommendations and Priorities

This section consists of three parts:

1) a justification for expending resources on subject authority work

2) SAC's recommendation for how authority work should ultimately be done at the University of Oregon

3) SAC's determination of priorities for subject authority work. This final part consists of a prioritized list of subject authority tasks that can be attempted with various levels of staffing

### 1) A Review and Justification of Subject Authority Work at the University of Oregon

The members of SAC hope that this report has conveyed not only the complexities of subject authority work, but the importance of that work as well. Authority work is a key to bibliographic control. It provides and maintains regularized access points that allow for the collocation and differentiation that are crucial to high precision and recall in a large file.

Subject authority work is a more complicated variation on the name and uniform title authority work we now do. A name or uniform title authority record normally consists of an authorized heading, together with its unused forms and occasionally references to a related authorized heading (e.g., earlier and later forms of a uniform title). Such headings are derivative in the sense that they are directly derived from text in the piece cataloged. What makes subject authority work more complicated than name and uniform title authority work is that:

* subject headings assigned to a work are based on the subjective determination of what a work is about.

* subject headings are less derivative; they frequently bear little or no resemblance to text in the work described

* subject authority records not only provide reference from previously used forms but they also provide reference from synonyms and reference to related, broader, and narrower terms

Further complications associated with Library of Congress subject headings in particular include:

* the logical structure of LC subject authority records

* the fact that not every subject heading is drawn from a single authorized list

Given the complexities and associated costs of subject authority work, it is essential that we understand the importance and fundamental need for authorized subject access in the catalog. At the turn of the century, Charles A. Cutter, in his landmark work Rules for a Dictionary Catalog, set forth eight basic functions or "objects" of the catalog. Subject authority work aids or is a prerequisite for at least half of these functions:

* "To enable a person to find a book of which ... the subject is known" (i.e., a known-item search by subject). This is Cutter's object "B."

* "To show what the library has on a given subject" (i.e., a subject search for unknown items). This is Cutter's object "E."

* "To show what the library has in a given kind of literature" (i.e., a subject/form/genre search for unknown items). This is Cutter's object "F."

* "To assist in the choice of a book as to its character (literary or topical)" (i.e., the evaluation of a retrieved set of records). This is Cutter's object "H."

Cutter's Rules for a Dictionary Catalog is cited here because it forms part of the foundation of modern cataloging. Many other works which discuss cataloging include authorized access by subject among the most basic functions of the catalog.

Here at the University of Oregon it is important to remember what Janus' own statistics on use tell us about this fundamental access point. Janus reports that the subject search is the most frequently used but least successful access point. This alone makes a strong case for subject authority work.

The University of Oregon has a tremendous investment in the subject file of the Library's catalog. A huge amount of professional labor has been spent and continues to be spent analyzing works to provide subject access and determining the correct form of subject headings. A large amount of paraprofessional labor has been spent checking the tagging of subject headings. Subject headings have imposed an

additional cost by further limiting the copy that can be used by copy catalogers (i.e., copy catalogers cannot use bibliographic records without LC subject headings to catalog nonfiction works). Still more resources have been devoted to in-house manual authority work in the card catalog, contracted subject authority work done by BNA for the COM catalog, and the purchase of a subject authority tape for Janus. The time SAC has spent should also be counted a cost incurred in support of subject authority.

Subject authority work is not a new concern for the University of Oregon Library; it is an on-going process to which we have always devoted resources. To protect the Library's investment and ensure that the catalog fulfills its basic functions, SAC feels that we must be prepared to continue to devote time and money to subject authority work. Maintenance of the subject file has been stalled since the initial implementation of Janus in January, 1989. BNA no longer maintains our subject file, and we have yet to establish a replacement. The longer the subject file lacks maintenance, the more it will degrade and the less useful it will be. Janus cannot be considered fully implemented until we have established the means for subject authority work.

## 2) Recommendations

SAC recommends that the Library establish an Authority Unit in the Catalog Department with responsibility for name, uniform title, subject, and genre authority control. The Authority Unit would fulfill all the subject authority functions detailed in this report as well as similar duties for name, uniform title, and genre headings. Such a unit might be responsible for series authority control, but this seems a task best subsumed by the Serials Department. Name authority work only occasionally requires a librarian's expertise, but subject authority work can be expected to require a large amount of professional time. Thus, SAC concludes that any unit responsible for complete subject authority control will need to be composed of both faculty and classified staff.

### Distributed Versus Centralized Authority Work

SAC finds that authority control in the online environment is sufficiently complex that it would be unreasonably cumbersome to try to distribute this task among all catalogers. Catalogers must be able to form legal headings and may initiate the creation of authority records (currently SDF cards and "Cross-Reference Typing Request" slips), but SAC believes it impractical to ask catalogers to maintain online authority files. We believe that it would be far more efficient to determine the approximate FTE

required for authority work and assign such tasks as the primary duties of persons in an Authority Unit.

**General Authority Unit Versus Subject Authority Unit**

Those responsible for subject authority work will, as a matter of course, have the skills needed for name authority work. Name authority work is but the most straightforward subset of subject authority work. There is an intimate relationship between name authority records and subject authority records (e.g., references to broader subject headings occur on name authority records for corporate bodies; some corporate bodies are represented by authority records for jurisdictional geographic headings). Because of the way Janus indexes authority records, routines will be required which will standardize treatment of duplicate authority records for names used as authors and names used as subjects (personal, corporate, geographic). For these reasons, SAC recommends that one unit be responsible for authority control.

**A Survey of the Association of Research Libraries (ARL)**

Automated Authority Control in ARL Libraries, a publication from the Systems and Procedures Exchange Center (SPEC) operated by the ARL Office of Management Services, reports the findings of a 1989 survey soliciting authority control planning documents, job descriptions, and procedures from automated ARL libraries. This survey indicates that many libraries are in a state of transition similar to that of the University of Oregon.

Of 30 libraries surveyed, 12 had authority control units before automation and an additional five have created such units since automating. Very large libraries like UCLA have librarians and staff specifically assigned to subject authority, series authority, retrocon authority, NACO, etc. Smaller libraries have organizational charts which might serve as models for the University of Oregon. These typically show one professional FTE largely devoted to name, subject, and uniform title authority control and supervision, two FTE staff, and students. As an example, the organizational chart of the ACORN Authority Unit at Vanderbilt University Library (comparable in size to the University of Oregon Library) is reprinted as Appendix 7 to this report.

**SAC's Recommendation as a Goal**

SAC's recommended Authority Unit is a goal toward which we believe the Library should strive. It is an attainable goal and one which we recommend achieving as soon as possible. If such a unit is not created, the cost of

authority work will not be avoided but will be hidden and distributed in ways that result in

* less effective use of existing FTE

* poor performance of the catalog for library patrons

We believe authority control to be important enough to warrant reassigning existing FTE if the creation of new positions does not prove feasible at this time. Subject authority control should not wait for new positions to be created.

**3) Priorities**

SAC realizes that an Authority Unit with personnel and routines in place cannot be created overnight even if a consensus of opinion agrees with our recommendation. For this reason, we feel it is important to suggest a priority of tasks that can begin at once. These tasks begin with projects that can be completed using staff with existing training, but inevitably some tasks will require specially trained classified and professional staff. Our priorities are as follows:

**Priority 1: Education**

SAC suggests as a first priority that some professional and classified FTE be devoted to subject authority work and the education of Technical Services staff, Public Services staff, and patrons. SAC believes that there are many specific subject searching problems and Janus features which could profitably be discussed with public services staff. These problems and features greatly influence the interpretation of the result of a subject search on Janus. Until database inconsistencies are fixed, for many subject headings it will impossible to do an exhaustive search on Janus without an understanding of the kind of problems likely to be encountered. Public services staff ultimately should not need to know much about the inner workings and problems of subject authority work, but until Technical Services can fix those problems we do them a disservice by not providing the insights necessary to search by subject on Janus.

In response to continuing subject authority questions from Knight Library reference faculty, SAC has already participated in individual and group presentations of Janus features and subject file problems. We believe that Knight Library reference staff would benefit from a more full discussion of these issues and that the branch libraries would also find our discoveries of great value.

**Priority 2: BNA Identified Problems**

A first step toward improving the subject file is to work through the "Subject Authority Verification Edit List" produced by BNA at the time the authority tape was produced. Fixing known problems will lessen the initial database work when we start processing first-time subject headings. The "Subject Authority Verification Edit List" could be worked on by existing staff with little additional training. Thus, there is very little overhead to fixing inconsistencies identified by BNA; we could start almost immediately.

**Priority 3: SAC Identified Problems**

In the course of our investigations SAC identified a large number of specific subject authority problems that should be fixed. 1,660 database changes were identified through the processing of headings from only four days of downloading. Other problems SAC identified are discussed in section II.2, State of the File. SAC members could identify specific subject heading changes for staff to make (e.g., fill out database change forms) and investigate areas where we suspect large problems exist (e.g., "city flip").

**Priority 4: Processing First-Time Subject Headings (FTSH's)**

Given Janus' present capabilities, the processing of FTSH's is undeniably the most important subject authority task we can attempt. First-time headings are an important tool for maintaining and improving the integrity of the subject file and for identifying authority records that need to be added to our local file.

A great deal of staff training will be required to process FTSH's. Recall that only a little over 5% of FTSH's are represented in full by LCSH. Thus, almost 95% of FTSH's will require knowledge of topical subdivision practice and/or geographic subdivision practice. Almost 8% will require advanced knowledge of the Subject Cataloging Manual.

Also recall that at our present rate of cataloging two or three thousand FTSH's are produced each month. The longer we wait to process FTSH's the larger the backlog will be. As of March 1990 this backlog is estimated at over 25,000 headings. In short, we need to begin processing first-time subject headings as soon as possible, but the processing of those headings will require a significant amount of staff training and time.

## Conclusion

Ideally, the Library would start all four priorities at once. Changes to problem headings that have already been identified and require little staff training should begin. A subject access presentation for Public Services staff should be sponsored. Finally, in preparation for processing first-time subject headings and downloading authority records, the Library should begin planning, arriving at policy decisions, writing routines, and training staff.

These are SAC's recommendations and priorities. The real work is yet to be done. The extent to which the catalog realizes its potential is dependent upon what priority the University of Oregon Library attaches to authority work.

## Appendix 1

## SAC's Charge

3/24/89

**MEMORANDUM**

TO: John Helmer
Britt Mueller
Howard Robertson
Chris Olson

FROM: Mark Watson
Acting Head, Catalog Dept.

SUBJECT: Subject Authorities Committee

In discussions with most of you and with many others, it has become increasingly apparent that the enormity and complexity of establishing subject authority control in this Library will require a great deal of study, thought, creativity and perseverance on the part of us all. To begin this process, Alice Allen has approved the formation of a Subject Authorities Committee that will begin to meet on a regular basis to accomplish the following: develop a theoretical basis on which to proceed by means of a literature search; brainstorm and compile questions that need to be addressed; develop, draft and bring to Catalogers' Meeting proposals on how subject authority control can be implemented at the University of Oregon. The Committee should feel at liberty to enlist the time and talents of other Dept. staff as necessary.

I am asking John Helmer to serve as chair and convener of the group (I will serve exofficio). At this point, there is no specific timeline for making recommendations; however, the necessity of responding to the demands of internal and external forces may themselves set up deadlines for the group.

Thanks for your willingness to serve in this important capacity.

cc: Alice Allen

# Appendix 2

## "City Flip"

rev. 03/28/88

INDIRECT LOCAL SUBDIVISION TO THE CITY LEVEL

HEADINGS AFFECTED: The following is a list of topical headings for which there had formerly been corresponding topical subdivisions used only under cities. The general see also references to these now-obsolete subdivisions have been cancelled from the SUBJECTS file; the topical headings are now to be divided indirectly to the city level:

Airports
Almshouses
Ambulance service
Amusements
Armories
Auditoriums
Avalanches
Bathing beaches
Bazaars, Oriental
Bombings
Bridges
Buildings
Canals
Carnival
Castles
Cemeteries
Charities
Charities, Medical
Churches
City planning
Civic improvement
Conservatories of music
Convention facilities
Convents and nunneries
Correctional institutions
Courtyards
Cries
Demonstrations
Discotheques
Docks
Dwellings
Election districts
Evening and continuation schools
Explosions
Ferries
Festivals
Fire prevention
Fires
Floods
Fortification
Fountains
Gates
Guilds
Harbors
Hospitals
Hotels, taverns, etc.
Laboratories
Landslides
Laundries, Public
Libraries
Lighting
Local transit
Lodging-houses
Marketplaces
Markets
Mayors
Military bases
Monasteries
Monuments
Morgues
Mosques
Museums
Music-halls
Music-halls (Variety-theaters, cabarets, etc.)
Office buildings
Orphanages

rev. 03/28/88

INDIRECT LOCAL SUBDIVISION TO THE CITY LEVEL

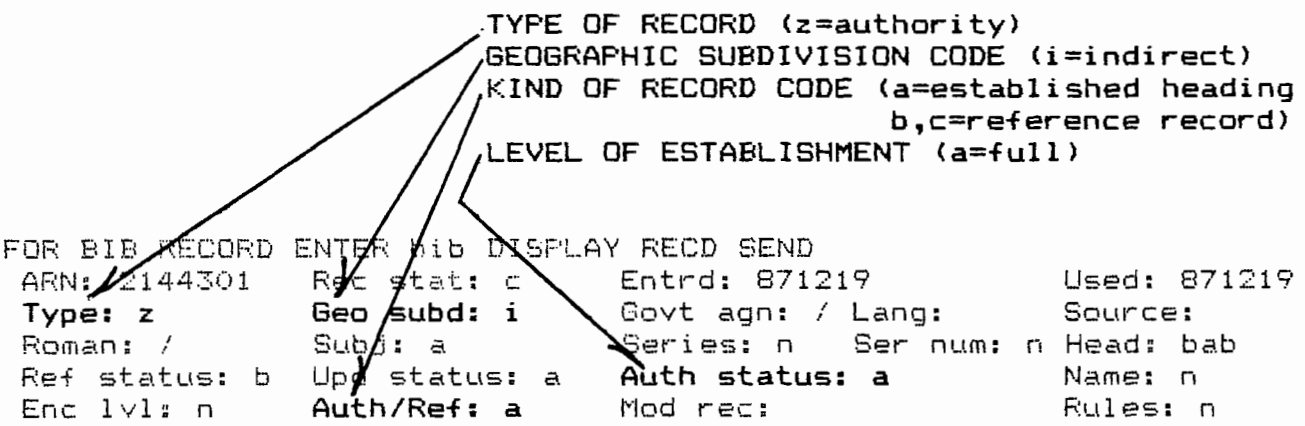
HEADINGS AFFECTED: (Continued)

Palaces
Parks
Playgrounds
Plazas
Public comfort stations
Recreation
Recreation areas
Restaurants, lunch rooms, etc.
Riots
Schools
Sepulchral monuments
Sewerage
Shopping centers
Shrines
Slaughtering and
slaughter-houses
Sports facilities
Stables
Statues
Stockyards
Stores, Retail
Storms
Street cleaning
Streets
Stūpas
Synagogues
Temples
Theaters
Tombs
Towers
Underground areas
Walls
Water consumption
Water-supply
Wharves

# Appendix 3

## A Guide to LC Subject Authority Records on OCLC

# A GUIDE TO LC SUBJECT AUTHORITY RECORDS ON OCLC

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  1 010      sh 85127580
  2 040      DLC c DLC d DLC

     CALL NUMBER RANGE
  3 053      HA

     ESTABLISHED HEADING
  4 150  0   Statistics

     COMPLEX SEE ALSO
  5 360      i subdivision a Statistics i under names of countries, cities,
etc., individual corporate bodies, classes of persons, ethnic groups, and
topics, and phrase headings for certain types of statistics, e.g. a Criminal
statistics

     USED FOR (see from)
  6 450  0   Statistical methods

     BROADER TERM (see also from)
  7 550  0   Economics w g

     RELATED TERMS (see also from)
  8 550  0   Econometrics
  9 550  0   Mathematical statistics

     SCOPE NOTE
 10 680      i Here are entered works consisting of general statistical data
not limited to a specific place or topic, and works on the discipline of
statistics. For the latter the heading may be subdivided by place. Works of
statistical data on a specific place or topic are entered under the place or
topic with the subdivision a Statistics.
```

```
ARN: 2003625   Rec stat: c     Entrd: 871218          Used: 881111
 Type: z        Geo subd: i    Govt agn: / Lang:      Source:
 Roman: /       Subj: a        Series: n   Ser num: n Head: bab
 Ref status: a  Upd status: a  Auth status: a         Name: n
 Enc lvl: n     Auth/Ref: a    Mod rec:               Rules: n

  1 010      sh 85002650
  2 040      DLC c DLC d DLC
  3 150  0   Airlines
  4 450  0   Air carriers

     EARLIER FORM OF HEADING (form no longer used)
  5 450  0   Air lines w nne
  6 450  0   Airline industry
  7 450  0   Aviation industry
  8 450  0   Scheduled airlines
  9 550  0   Aeronautics, Commercial w g
 10 550  0   Airways

     SOURCE OF DATA
 11 670      Work cat.: Davies, R.E.G. Pan American Airways, 1987.
 12 670      Web. 3 b (airline)
```

Notes:

* A subject authority record supplies UF's (4XX) and RT's (5XX) and BT's (5XX $w) but **not** NT's. You must use the red books or truncated display on OCLC to get NT's.

* Janus will supply RT's and NT's (although it does not distinguish between them) but **not** BT's.

* The OCLC subject authority search key is "[5,3".
  e.g., mathematical statistics ==> [mathe,sta

* The subfield "w" with "nne" in a 450 is your clue to the form(s) no longer used but still appearing in our catalog (until we do subject authority work). All other 450 (UF's) are cross references from forms we never used. See line 5 above.

# Appendix 4

## Staffordshire Bull Terriers

## as a Narrower Term For Civilization

```
ARN: 2013290   Rec stat: c      Entrd: 871218          Used: 871218
Type: z        Geo subd: _      Govt agn: _ Lang:      Source:
Roman: _       Subj: a          Series: n   Ser num: n Head: bab
Ref status: b  Upd status: a    Auth status: a         Name: n
Enc lvl: n     Auth/Ref: a      Mod rec:               Rules: n

  1 010      sh 85004381
  2 040      DLC !c DLC !d DLC
  3 053      SF429.A72
  4 150  0   American pit bull terrier
  5 450  0   American bull terrier
  6 450  0   Bull terrier, American
  7 550  0   Pit bull terriers !w g
  8 550  0   American Staffordshire terrier
```

```
FOR BIB RECORD ENTER bib DISPLAY RECD SEND
ARN: 2134182   Rec stat: c      Entrd: 871219          Used: 881107
Type: z        Geo subd: i      Govt agn: _ Lang:      Source:
Roman: _       Subj: a          Series: n   Ser num: n Head: bab
Ref status: a  Upd status: a    Auth status: a         Name: n
Enc lvl: n     Auth/Ref: a      Mod rec:               Rules: n

  1 010      sh 86002[illegible] 1
  2 040      DLC !c '    !d DLC
  3 150  0   Animal breeds
  4 450  0   Breeds, Animal
  5 450  0   Breeds of animals
  6 450  0   Breeds of domestic animals
  7 450  0   Domestic animal breeds
  8 670      Work cat.: Sasimowski, E. Animal breeding and production, 1986.
```

```
FOR BIB RECORD ENTER bib DISPLAY RECD SEND
ARN: 2018489   Rec stat: n      Entrd: 871218          Used: 871218
Type: z        Geo subd: _      Govt agn: _ Lang:      Source:
Roman: _       Subj: a          Series: n   Ser num: n Head: bab
Ref status: b  Upd status: a    Auth status: a         Name: n
Enc lvl: n     Auth/Ref: a      Mod rec:               Rules: n

  1 010      sh 85005249
  2 040      DLC !c DLC !d DLC
  3 150  0   Animals
  4 450  0   Fauna
  5 450  0   Wildlife
  6 550  0   Human-animal relationships
  7 550  0   Zoology
  8 680       !i Here are entered general works on animals. Works on animals of
specific places are entered under !a Zoology !i subdivided by place.
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2018722   Rec stat: n      Entrd: 871218          Used: 871218
ype: z        Geo subd: i      Govt agn: _ Lang:      Source:
oman: _       Subj: a          Series: n   Ser num: n Head: bab
ef status: b  Upd status: a    Auth status: a         Name: n
nc lvl: n     Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85005279
 2 040      DLC |c DLC
 3 053      QL85
 4 150  0   Animals and civilization
 5 450  0   Civilization and animals
 6 550  0   Civilization |w g
 7 550  0   Human-animal relationships |w g
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2063403   Rec stat: n      Entrd: 871218          Used: 871218
ype: z        Geo subd: _      Govt agn: _ Lang:      Source:
oman: _       Subj: a          Series: n   Ser num: n Head: bab
 f status: b  Upd status: a    Auth status: a         Name: n
.c lvl: n     Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85011383
 2 040      DLC |c DLC
 3 150  0   Balto (Dog)
 4 550  0   Dogs |w g
 5 550  0   Sled dogs |w g
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2085548   Rec stat: n      Entrd: 871218          Used: 871218
ype: z        Geo subd: i      Govt agn: _ Lang:      Source:
oman: _       Subj: a          Series: n   Ser num: n Head: bab
ef status: b  Upd status: a    Auth status: a         Name: n
nc lvl: n     Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85014224
 2 040      DLC |c DLC
 3 150  0   Biology, Economic
 4 450  0   Economic biology
 5 550  0   Pests
```

```
ARN: 2125347    Rec stat: n     Entrd: 871218          Used: 871218
Type: z         Geo subd: i     Govt agn: _ Lang:      Source:
Roman: _        Subj: a         Series: n   Ser num: n Head: bab
Ref status: b   Upd status: a   Auth status: a         Name: n
Enc lvl: n      Auth/Ref: a     Mod rec:               Rules: n

  1 010      sh 85020766
  2 040      DLC !c DLC !d DLC
  3 150   0  Cat breeds
  4 450   0  Cats !x Breeds
  5 550   0  Animal breeds !w g
  6 550   0  Cats !w g
```

```
Screen 1 of 2
FOR BIB RECORD ENTER bib DISPLAY RECD SEND
ARN: 2008136    Rec stat: n     Entrd: 871218          Used: 871218
Type: z         Geo subd: _     Govt agn: _ Lang:      Source:
Roman: _        Subj: a         Series: n   Ser num: n Head: bab
Ref status: a   Upd status: a   Auth status: a         Name: n
Enc lvl: n      Auth/Ref: a     Mod rec:               Rules: n

  1 010      sh 85026423
  2 040      DLC !c DLC !d DLC
  3 053      CB
  4 053      HM101
  5 150   0  Civilization
  6 360       !i subdivision !a Civilization !i under names of countries,
cities, etc.
  7 550   0  Auxiliary sciences of history !w g
  8 550   0  Culture
  9 550   0  Ethnology

Screen 2 of 2
 10 680       !i Here are entered works on civilization in general. Works on
the cultural influences of one civilization upon another are entered under the
affected civilization with appropriate subdivision, e.g. !a Japan--
Civilization--Occidental influences; Civilization, Medieval--Jewish influences;
Civilization, Slavic--French influences. !i Works on the culture of individual
ethnic groups are entered under the name of the group.
 11 680       !i Works on the civilization of an individual place are entered
under the name of the place with the subdivision !a Civilization, !i e.g. !a
United States--Civilization.
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2099606    Rec stat: n      Entrd: 871218          Used: 871218
ype: z         Geo subd: i      Govt agn: _ Lang:      Source:
oman: _        Subj: a          Series: n   Ser num: n Head: bab
ef status: b   Upd status: a    Auth status: a         Name: n
nc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85038765
 2 040      DLC !c DLC !d DLC
 3 150  0   Dog breeds
 4 360       !i names of specific breeds, e.g. !a Bloodhounds, Collies,
berian huskies
 5 450  0   Dogs !x Breeds
 6 550  0   Animal breeds !w g
 7 550  0   Dogs !w g
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2099795    Rec stat: n      Entrd: 871218          Used: 871218
ype: z         Geo subd: i      Govt agn: _ Lang:      Source:
oman: _        Subj: a          Series: n   Ser num: n Head: !
ef status: a   Upd status: a    Auth status: a         Name: n
nc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85038796
 2 040      DLC !c DLC !d DLC
 3 053      GR720 !c Folklore
 4 053      GT5890 !c Manners and customs
 5 053      QL737.C2 !c Zoology
 6 053      SF421 !b SF440.2 !c Domestic animals
 7 150  0   Dogs
 8 450  0   Dog
 9 550  0   Domestic animals !w g
10 681       !i Example under !a Pets
```

```
FOR BIB RECORD ENTER bib DISPLAY RECD SEND
ARN: 2100429    Rec stat: c      Entrd: 871218          Used: 871218
Type: z         Geo subd: i      Govt agn: _ Lang:      Source:
Roman: _        Subj: a          Series: n   Ser num: n Head: bab
Ref status: b   Upd status: a    Auth status: a         Name: n
Enc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

  1 010      sh 85038908
  2 040      DLC |c DLC |d DLC
  3 053      GN426 |c Ethnology
  4 053      GT5870 |b GT5895 |c Manners and customs
  5 053      SF |c Animal industry
  6 150  0   Domestic animals
  7 450  0   Animal husbandry
  8 450  0   Animals, Domestic
  9 450  0   Barnyard animals
 10 450  0   Beasts
 11 450  0   Farm animals
 12 550  0   Animals |w g
 13 550  0   Zoology, Economic |w g
 14 550  0   Domestication
 15 550  0   Feral animals
```

```
FOR BIB RECORD ENTER bib DISPLAY RECD SEND
ARN: 2087842    Rec stat: n      Entrd: 871218          Used: 871218
Type: z         Geo subd: i      Govt agn: _ Lang:      Source:
Roman: _        Subj: a          Series: n   Ser num: n Head: bab
Ref status: b   Upd status: a    Auth status: a         Name: n
Enc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

  1 010      sh 85062838
  2 040      DLC |c DLC
  3 053      QL85
  4 150  0   Human-animal relationships
  5 450  0   Animal-human relationships
  6 450  0   Animal-man relationships
  7 450  0   Animals and man
  8 450  0   Man and animals
  9 450  0   Man-animal relationships
 10 450  0   Relationships, Human-animal
 11 550  0   Animals
 12 550  0   Man
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2142798    Rec stat: c      Entrd: 871219          Used: 871219
ype: z         Geo subd: _      Govt agn: _ Lang:      Source:
oman: _        Subj: a          Series: n   Ser num: n Head: bab
ef status: b   Upd status: a    Auth status: a         Name: n
nc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85102479
 2 040      DLC |c DLC |d DLC
 3 053      SF429.P58
 4 150  0   Pit bull terriers
 5 450  0   Bull terriers, Pit
 6 450  0   Bullterriers, Pit
 7 450  0   Pit bullterriers
 8 450  0   Pitbull terriers
 9 550  0   Terriers |w g
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2141858    Rec stat: c      Entrd: 871219          Used: 871219
ype: z         Geo subd: _      Govt agn: _ Lang:      Source:
oman: _        Subj: a          Series: n   Ser num: n Head: bab
ef status: b   Upd status: a    Auth status: a         Name: n
nc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85127227
 2 040      DLC |c DLC |d DLC
 3 053      SF429.S85
 4 150  0   Staffordshire bull terrier
 5 450  0   Bull terrier, Staffordshire
 6 450  0   Staffordshire terrier
 7 550  0   Pit bull terriers |w g
 8 550  0   American Staffordshire terrier
```

```
OR BIB RECORD ENTER bib DISPLAY RECD SEND
RN: 2017644    Rec stat: c      Entrd: 871218          Used: 871218
ype: z         Geo subd: _      Govt agn: _ Lang:      Source:
oman: _        Subj: a          Series: n   Ser num: n Head: bab
ef status: a   Upd status: a    Auth status: a         Name: n
nc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

 1 010      sh 85134103
 2 040      DLC |c DLC |d DLC
 3 053      SF429.T3
 4 150  0   Terriers
 5 550  0   Dog breeds |w g
```

```
Screen 1 of 2
FOR BIB RECORD ENTER bib DISPLAY RECD SEND
ARN: 2120749    Rec stat: n      Entrd: 871218          Used: 871218
Type: z         Geo subd: i      Govt agn: _ Lang:      Source:
Roman: _        Subj: a          Series: n   Ser num: n Head: bab
Ref status: b   Upd status: a    Auth status: a         Name: n
Enc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

  1 010      sh 85149996
  2 040      DLC |c DLC |d DLC
  3 053      SB922 |b SB993.34 |c Crop zoology
  4 053      SF84 |b SF84.45 |c General
  5 150   0  Zoology, Economic
  6 450   0  Animals, Injurious and beneficial
  7 450   0  Animals, Useful and harmful
  8 450   0  Economic zoology
  9 450   0  Injurious and beneficial animals
 10 550   0  Animals and civilization |w g
 11 550   0  Biology, Economic |w g
 12 550   0  Pests
 13 550   0  Zoology, Medical

Screen 2 of 2
 14 680       |i Here are entered general and comprehensive works on animals
injurious and beneficial to man in agriculture, the industrial arts, etc., and
works on the extermination of wild animals, venomous snakes, etc.
```

# Appendix 5

## Subject Authority Records:

## Loss of Hierarchical Information

## A Subject Authority Record on OCLC:

```
FOR BIB RECORD ENTER bib DISPLAY RECD SEND
ARN: 2100429    Rec stat: c      Entrd: 871218          Used: 871218
Type: z         Geo subd: i      Govt agn: _ Lang:      Source:
Roman: _        Subj: a          Series: n   Ser num: n Head: bab
Ref status: b   Upd status: a    Auth status: a         Name: n
Enc lvl: n      Auth/Ref: a      Mod rec:               Rules: n

  1 010      sh 85038908
  2 040      DLC |c DLC |d DLC
  3 053      GN426 |c Ethnology
  4 053      GT5870 |b GT5895 |c Manners and customs
  5 053      SF |c Animal industry
  6 150  0   Domestic animals
  7 450  0   Animal husbandry
  8 450  0   Animals, Domestic
  9 450  0   Barnyard animals
 10 450  0   Beasts
 11 450  0   Farm animals
 12 550  0   Animals |w g
 13 550  0   Zoology, Economic |w g
 14 550  0   Domestication
 15 550  0   Feral animals
```

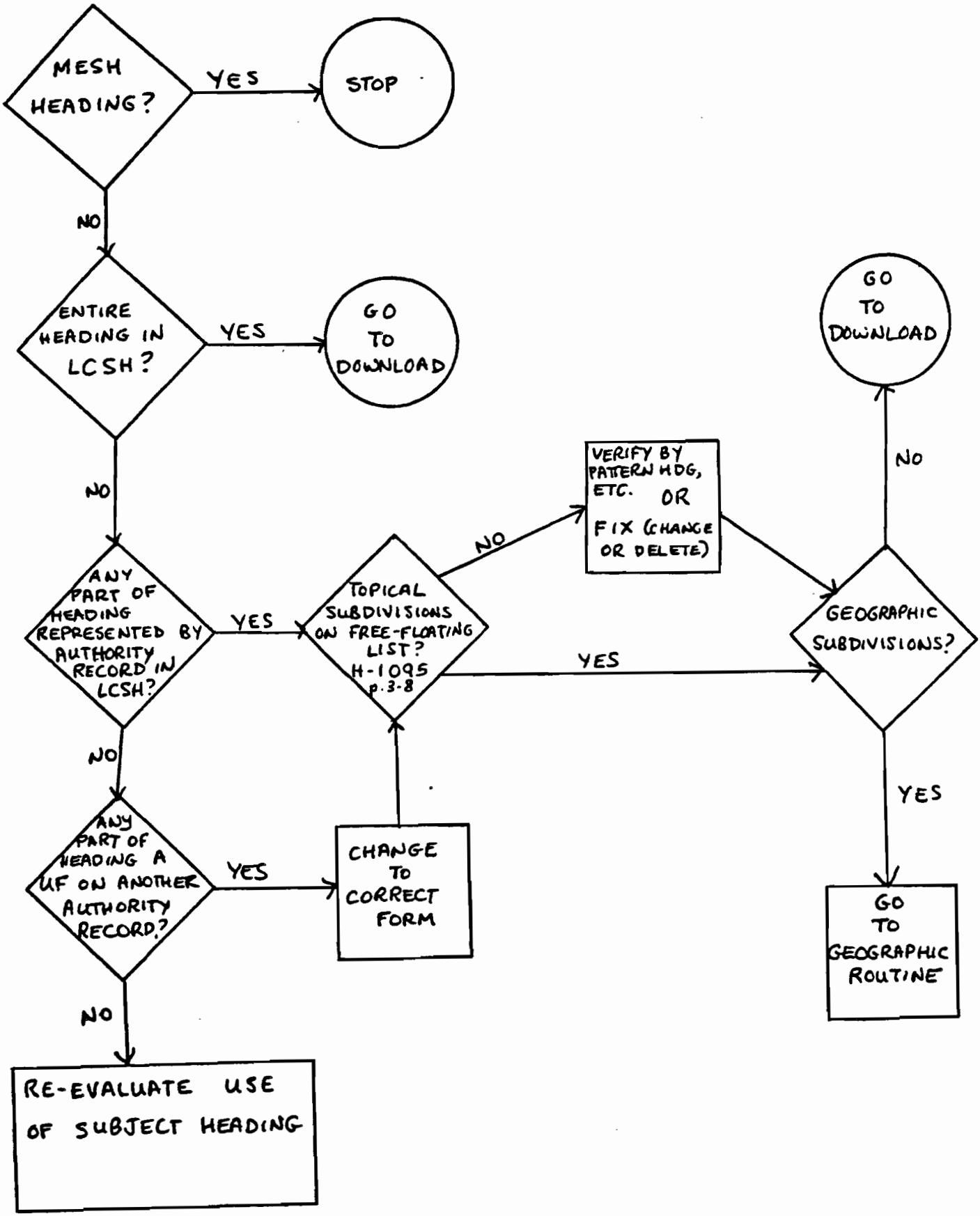
## After Downloading to Janus:

```
A10004269                Last updated: 06-16-89 Created: 06-16-89 Revision:
01 001      2100429
02 008      871218i  ananbab                    b ana
03 010      sh 85038908
04 040      DLC|cDLC|dDLC
05 053      GN426|cEthnology
06 053      GT5870|bGT5895|cManners and customs
07 053      SF|cAnimal industry
08 150   0  Domestic animals
09 450   0  Animal husbandry
10 450   0  Animals, Domestic
11 450   0  Barnyard animals
12 450   0  Beasts
13 450   0  Farm animals
14 550   0  |wg
15 550   0  |wg
16 550   0  Animals
17 550   0  Zoology, Economic
18 550   0  Domestication
19 550   0  Feral animals
```

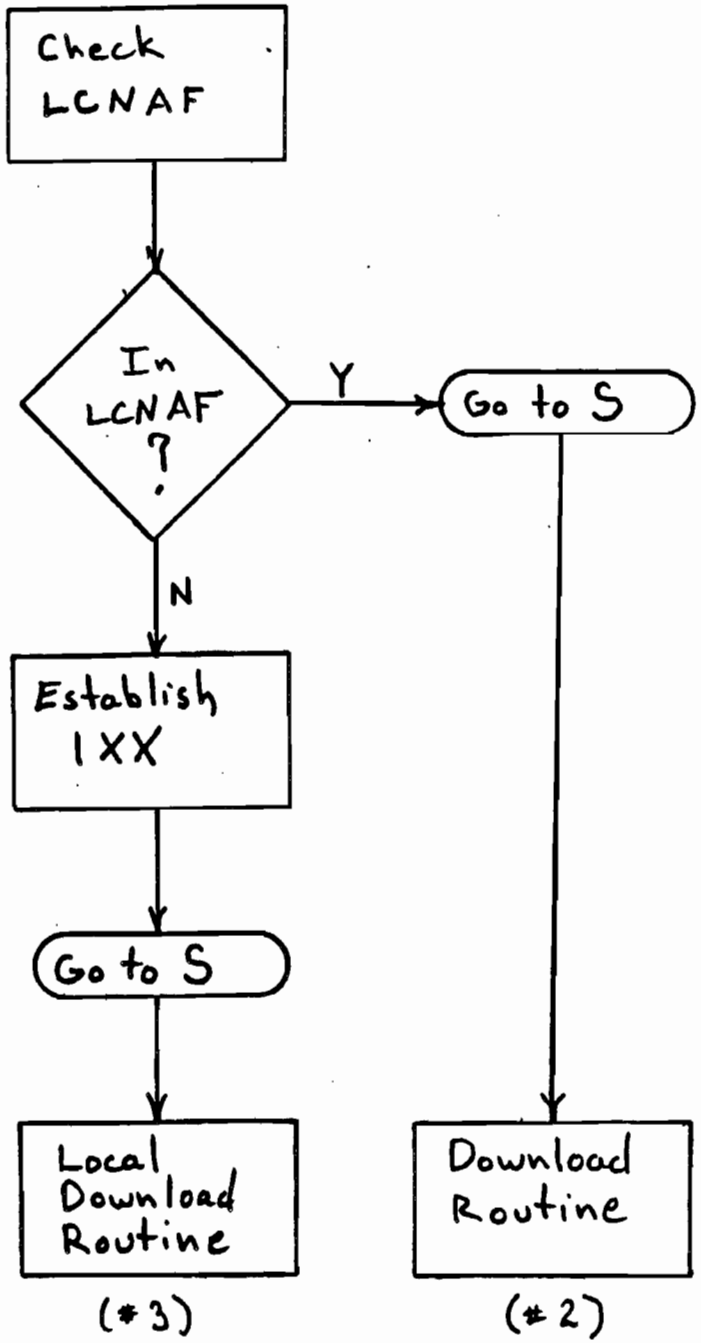
# Appendix 6

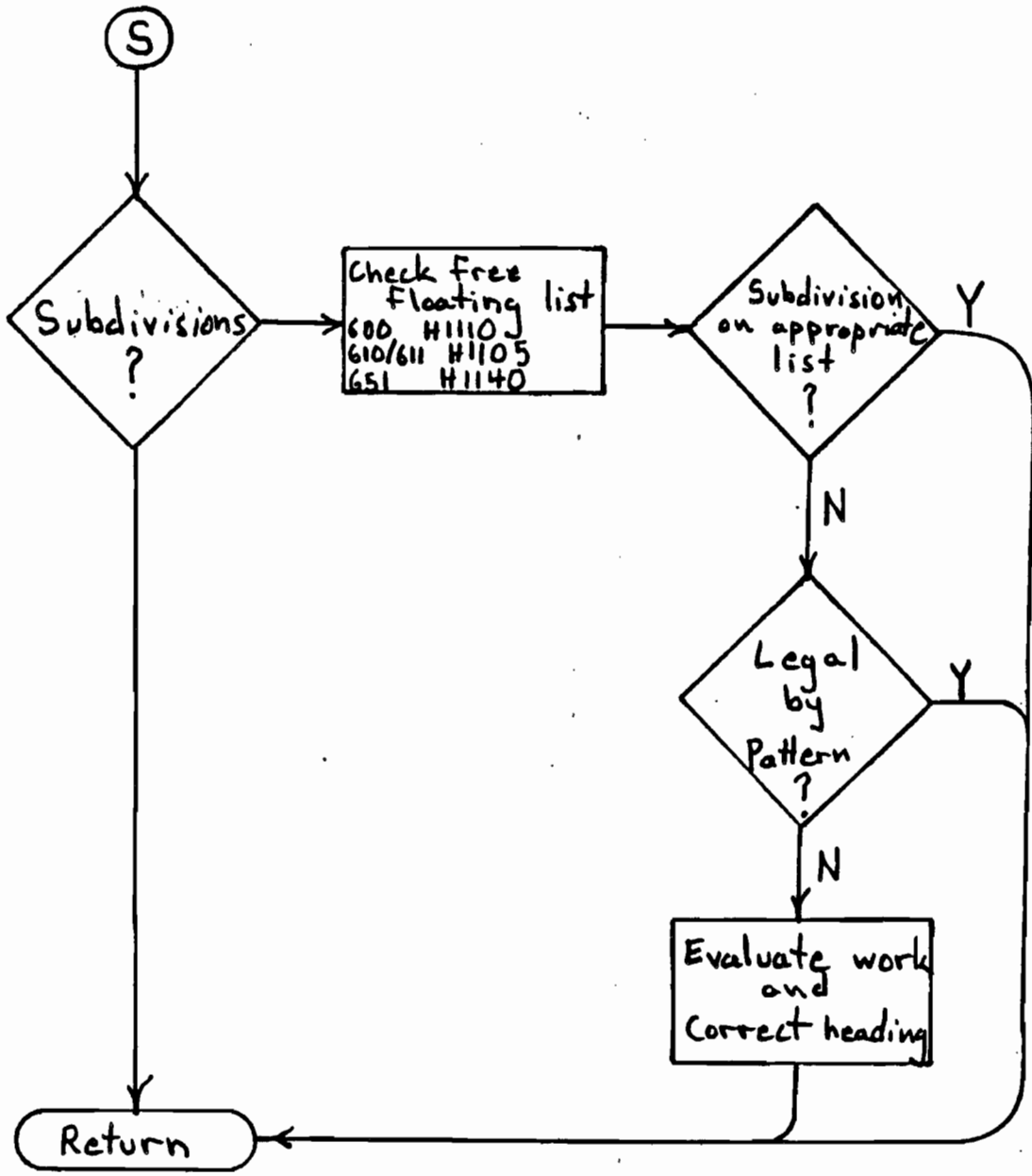
## Flowcharts for Processing First-Time Subject Headings

# FLOWCHART FOR CHECKING TOPICAL SUBJECT HEADINGS IN FTHLS

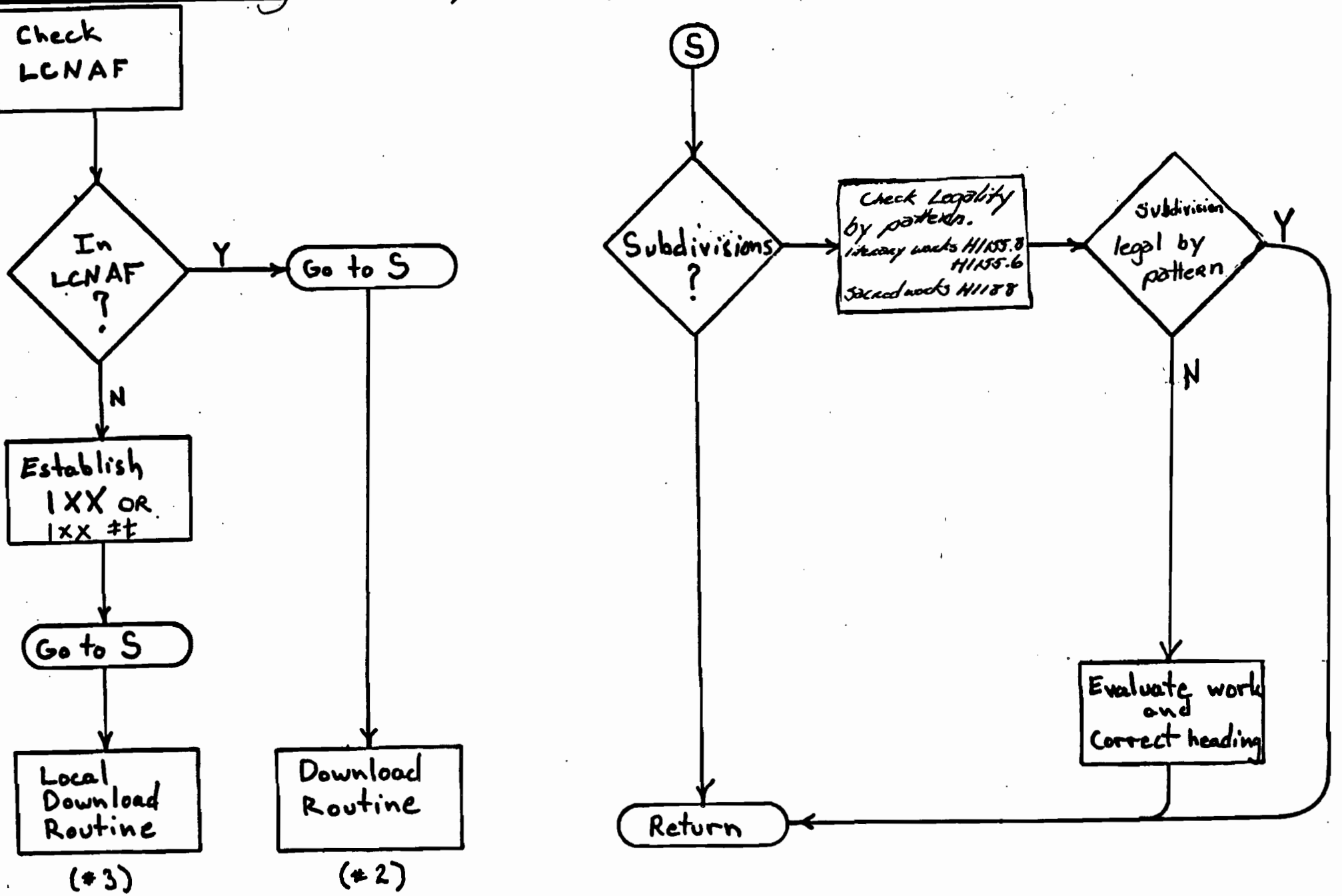


Flowchart for Checking 600, 610, 611, and 651 from FTHL.



# Flowchart for Checking 600 ≠ t's, 610 ≠ t's, and 630's from FTHL.



## Appendix 7

## Vanderbilt University Library:

## Organizational Chart for ACORN Authority Unit

**Figure 2:**

# The ACORN Authority Unit

**(as of July 1988)**

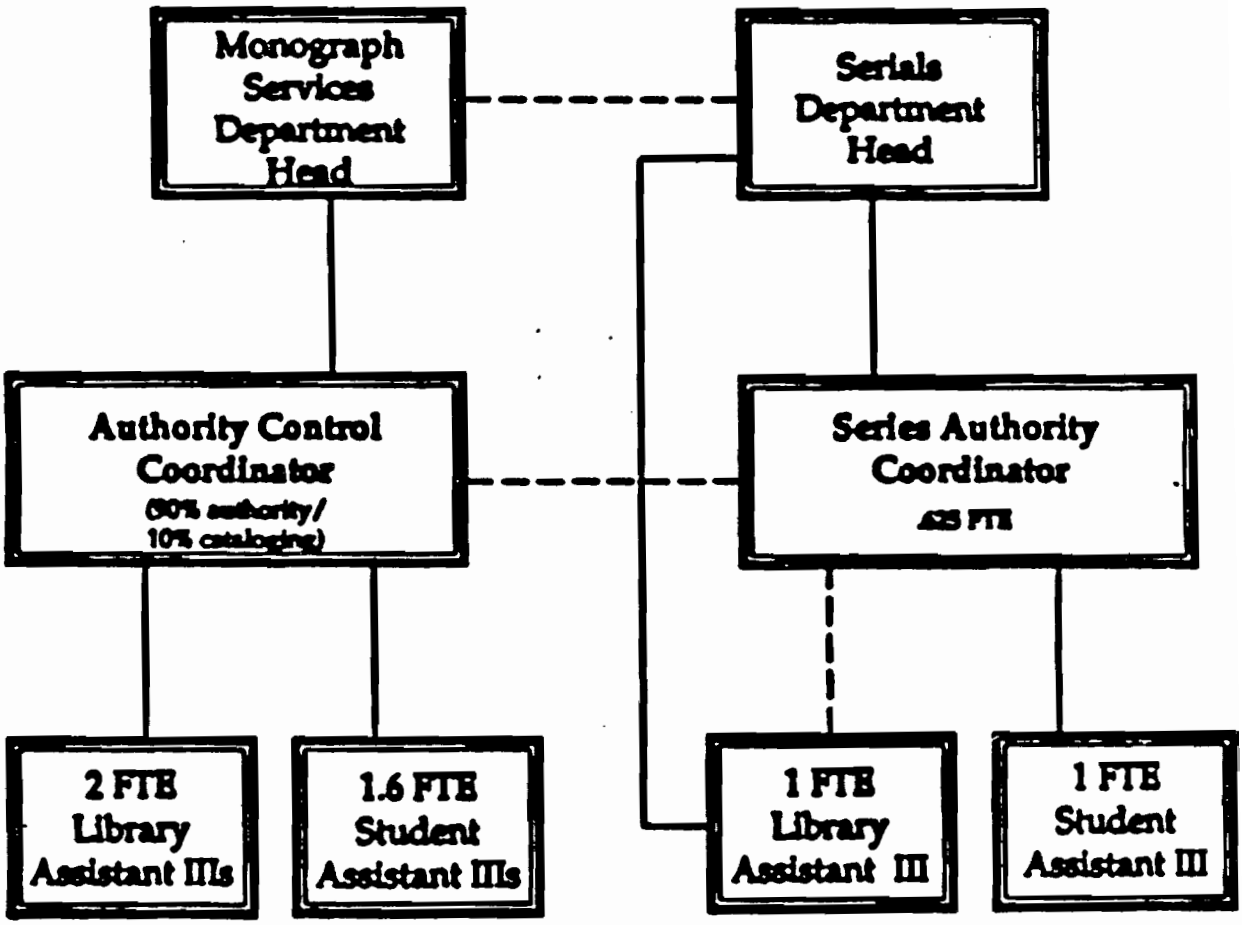


Figure 3:

# Responsibilities of Each Staff Member in the ACORN Authority Unit

## Authority Control Coordinator

- Coordinates workflow and training for unit and trains new librarians in on-line authorities.
- Responsible for policies and procedures for names, subjects, book-set and uniform-title headings.
- Disseminates information and memos about workflow and procedures to colleagues in Monographs and Serials Services.
- Liaison with Medical and Law Processing Units.
- Handles global changes.
- Coordinates series activities with Series Authority Coordinator.

## Series Authority Coordinator

- Responsible for series access on ACORN.
- Coordinates new developments in series with Authority Control Coordinator.
- Oversees conversion of manual Serial Record to ACORN.
- Series Authority liaison with Medical and Law Processing Units.

## Library Assistant IIIs

- Transfer and overlay names and subjects from OCLC-LC authority file to ACORN for work generated by original catalogers.
- Code and validate authority records properly.
- Work with new subject and name-heading lists.
- Input original headings into ACORN authority file.
- Perform manual bibliographic changes.
- Cross check 4XXs and 5XXs.
- Work with batch printouts generated by global techniques.

## Student Assistants

- Perform manual bibliographic changes.
- Check 4XXs on subject-heading authorities.
- Work with new subject heading lists.

## Selected Reading

Authority control : the key to tomorrow's catalog : proceedings of the 1979 Library and Information Technology Association Institutes. Edited by Mary W. Ghikas. Phoenix, AZ : Oryx Press, 1982. (KNIGHT Z693.A97)

Authority Control Symposium (1986 : New York, N.Y.). Authority Control Symposium : papers presented during the 14th Annual ARLIS/NA Conference, New York, N.Y., February 10, 1986. Edited by Karen Muller, sponsored by Cataloging and Indexing Systems Special Interest Group and the Cataloging Advisory Committee of the Art Libraries Society of North America. Tucson, AZ : The Society, 1987. (KNIGHT Z693.3.A88 A87 1986)

Automated authority control in ARL libraries. [SPEC kit]; prepared by Stefanie A. Wittenbach. Washington, D.C. : Office of Management Services, Association of Research Libraries, 1989. (KNIGHT Z693.3.A88 A98 1989)

Avram, Henriette D.
"Authority control and its place," Journal of Academic Librarianship, Jan. 1984, v. 9, no. 6, p. 331-335. (KNIGHT Z671.J58)

Burger, Robert H. (Robert Harold), 1947-
Authority work : the creation, use, maintenance, and evaluation of authority records and files. Littleton, Colo. : Libraries Unlimited, 1985. (KNIGHT Z693.B87 1985)

Cutter, Charles A.
Rules for a Dictionary Catalog. 4th ed., rewritten. Washington, D.C. : Government Printing Office, 1904.

"Objects" also in: Foundations of Cataloging. Edited by Michael Carpenter and Elaine Svenonius. Littleton, Colorado : Libraries Unlimited, 1985. (KNIGHT Z693.F68 1985)

Ludy, Lorene E.
"OSU Libraries' use of Library of Congress Subject Authorities File," Information Technology and Libraries, June 1985, p. 1555-160. (KNIGHT Z699.A1 J62)

Markey, Karen and Vizine-Goetz, Diane.
"Untraced references in the machine-readable Library of Congress Subject Headings," Library Resources & Technical Services, Jan. 1989, v. 33, no. 1, p. 37-53. (KNIGHT Z671.L7154)

McDonald, David R.
"Data dictionaries, authority control, and online catalogs: a new perspective," Journal of Academic Librarianship, Sept. 1985, v. 11, no. 4, p. 219-222. (KNIGHT Z671.J58)

Taylor, Arlene G.
"Authority files in online catalogs: an investigation of their value," Cataloging & Classification Quarterly, Spring 1984, v. 4(3), p. 1-16. (KNIGHT Z693.A15)

What's in a name? : control of catalogue records through automated authority files : proceedings of the workshop sponsored by National Library of Canada, Canadian Library Association, Office of Library Coordination [of the] Council of Ontario Universities, University of Toronto Library Automation Systems, Ottawa, December 8-9, 1977, Vancouver, May 25-26, 1978. Edited and compiled by Natsuko Y. Furuya. Toronto : Distributed by University of Toronto Library Automation Systems, 1978. (KNIGHT Z699.A1 W49)

## Subject Cataloging Tools

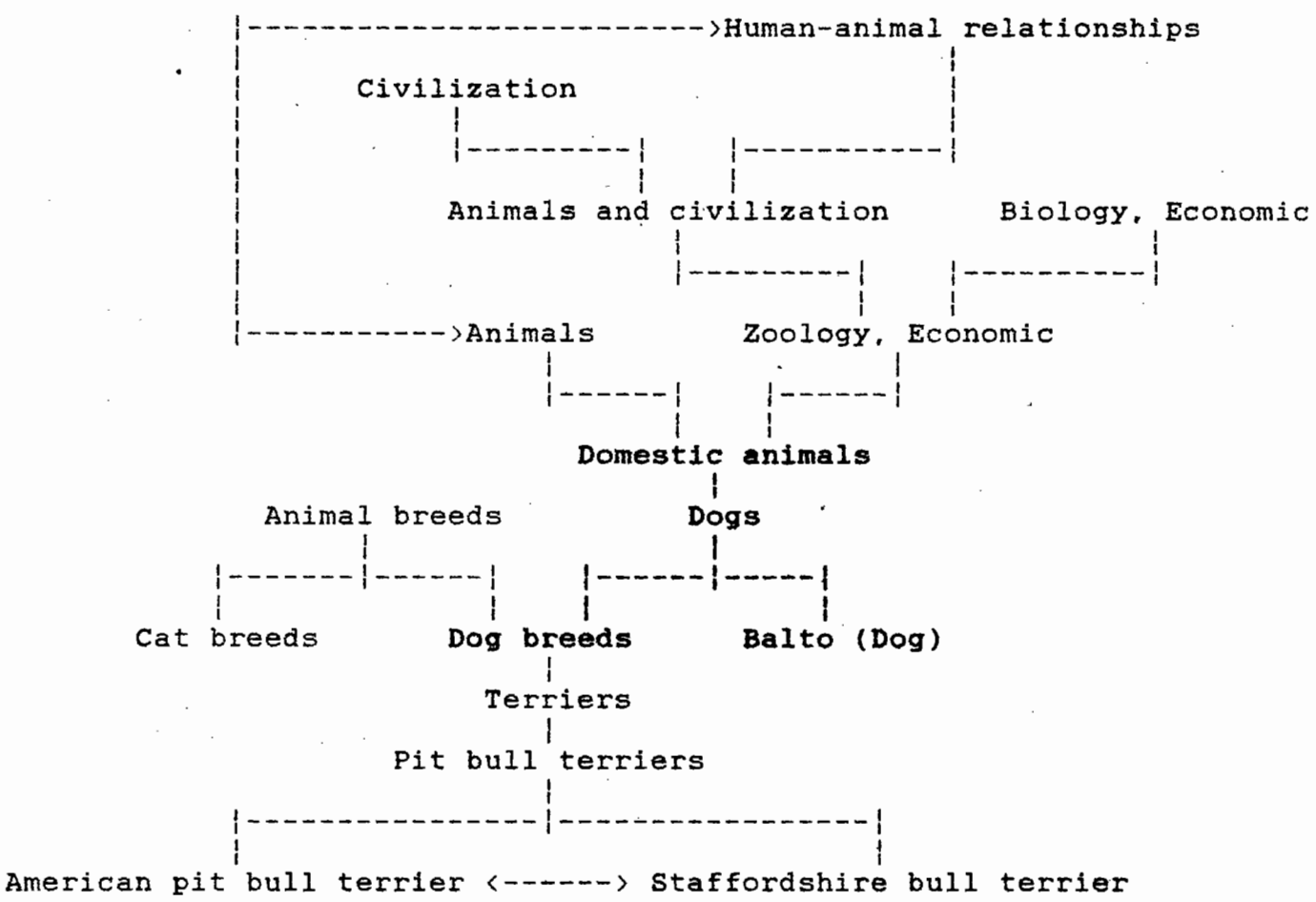
Cataloging service bulletin. Washington : Library of Congress, Processing Services, 1978-

Library of Congress. Subject Cataloging Division.
L.C. subject headings weekly list. Washington, D.C. : Library of Congress, 1985-

Library of Congress. Subject Cataloging Division.
Library of Congress subject headings. Washington, D.C. : Cataloging Distribution Service, Library of Congress, 1988.

Library of Congress. Subject Cataloging Division.
Subject cataloging manual : subject headings. Washington, D.C. : Library of Congress, 1984-

**Staffordshire Bull Terriers**
**As A Narrower Term For Civilization**




Note: | = BT  ¦ = NT  <---> = SA

dogs.doc  jfh 4-12-89

```
Leader    _____nz___22_____n__4500
001 __    sh 85038908
005 __    19910921134914.8
008 __    860211i|_anannbab|__________|b_ana_|||__
040 __    $a DLC $c DLC $d DLC
053 __    $a GN407.6 $b GN407.7 $c Ethnology
053 __    $a GT5870 $b GT5895 $c Manners and customs
053 __    $a SF $c Animal industry
150 _0    $a Domestic animals
360 __    $i subdivision $a Domestic animals $i under ethnic groups
          and groups of Indians, e.g. $a Indians of North
          America--Domestic animals
450 _0    $a Animal husbandry
450 _0    $a Animals, Domestic
450 _0    $a Barnyard animals
450 _0    $a Beasts
450 _0    $a Farm animals
550 _0    $w g $a Animals
550 _0    $w g $a Zoology, Economic
550 _0    $a Domestication
550 _0    $a Feral animals

Leader    _____cz___22_____n__4500
001 __    sh 85038796
005 __    19891011113111.7
008 __    860211i|_anannbab|__________|a_ana_|||__
040 __    $a DLC $c DLC $d DLC
053 __    $a GR720 $c Folklore
053 __    $a GT5890 $c Manners and customs
053 __    $a QL737.C2 $c Zoology
053 __    $a SF421 $b SF440.2 $c Domestic animals
150 _0    $a Dogs
360 __    $i subdivision $a Dogs $i under groups of Indians, e.g.
          $a Indians of North America--Dogs
450 _0    $a Dog
550 _0    $w g $a Domestic animals
681 __    $i Example under $a Pets

Leader    _____cz___22_____n__4500
001 __    sh 85038765
005 __    19900308114421.9
008 __    860211i|_anannbab|__________|b_ana_|||__
040 __    $a DLC $c DLC $d DLC
150 _0    $a Dog breeds
450 _0    $a Dogs $x Breeds
550 _0    $w g $a Animal breeds
550 _0    $w g $a Dogs

Leader    _____cz___22_____n__4500
001 __    sh 85011383
005 __    19910110160329.7
008 __    860211_|_anannbab|__________|a_ana_|||__
040 __    $a DLC $c DLC $d DLC
150 _0    $a Balto (Dog)
550 _0    $w g $a Dogs
```