The Policy and Standards Division's Progress on the Recommendations made in "Library of Congress Subject Headings Pre- vs. Post-Coordination and Related Issues"

Executive Summary

Report for Beacher Wiggins, ABA Director
Prepared by the Policy and Standards Division
May 2, 2010

In 2006 the Library of Congress' Director of Acquisitions and Bibliographic Access (ABA) requested a review of the pros and cons of pre- versus post-coordination of *Library of Congress Subject Headings*. The Cataloging Policy and Support Office (now the Policy and Standards Division) responded in 2007 with the report entitled, "Library of Congress Subject Headings: Pre- vs. Post-Coordination and Related Issues" (http://www.loc.gov/catdir/cpso/pre_vs_post.pdf).

Pre-coordination is the combining of elements into one heading in anticipation of a search on that heading. Post-coordination is the assignment of elements to separate headings, in anticipation of a user combining them at the time he or she looks for materials in a catalog, usually through keyword searching.

The 2006 report concluded that it is desirable to continue to assign pre-coordinated heading strings because they provide context, disambiguate between terms, suggest other searches, provide precision in searching, and allow for browse displays. The sophisticated syntax can express concepts better than single words can, but systems can also break them into facets for post-coordinated displays if desired. On the other hand, post-coordinated terms are single terms or phrases and are seriously limited in terms of recall, precision, understanding, and relevance ranking.

With that conclusion as its foundation, the report recommended several actions to reduce the costs of pre-coordination. These methods can be summed up into two general categories. They are: 1. make better use of technology, including developing a new search engine; and 2. simplify the rules for creation and application of pre-coordinated strings.

The following document is an accounting of PSD's progress for each of the action items and recommendations presented in the 2007 report.

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Report for Beacher Wiggins, Director, Acquisitions & Bibliographic Access Directorate,
Library Services, Library of Congress
Prepared by the Policy and Standards Division
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In 2006 the Library of Congress' Director of Acquisitions and Bibliographic Access (ABA) requested a review of the pros and cons of pre- versus post-coordination of *Library of Congress Subject Headings*. The Cataloging Policy and Support Office (CPSO, now the Policy and Standards Division, or PSD) responded in 2007 with the report entitled, "Library of Congress Subject Headings: Pre- vs. Post-Coordination and Related Issues."

Pre-coordination is the combining of elements into one heading in anticipation of a search on that heading. Post-coordination is the assignment of elements to separate headings, in anticipation of a user combining them at the time he or she looks for materials in a catalog, usually through keyword searching. In the *LCSH* system, untold numbers of headings can be constructed from individual elements that represent facets, such as topic, place, time, form, language, and various other aspects of topics. Although *LCSH* is primarily a pre-coordinate system, many complex or multi-element topics require post-coordination in order to achieve coverage. There are numerous cases in which elements cannot be combined into single headings, even with subdivisions. In those situations, an array of headings may be assigned that, taken together, are coextensive with the topic of an item. *LCSH* therefore requires some degree of post-coordination of the pre-coordinated strings to bring out specific topics of works.

The 2006 report concluded that it is desirable to continue to assign pre-coordinated heading strings because they provide context, disambiguate between terms, suggest other searches, provide precision in searching, and allow for browse displays. The sophisticated syntax can express concepts better than single words can, but systems can also break them into facets for post-coordinated displays if desired. On the other hand, post-coordinated terms are single terms or phrases and are seriously limited in terms of recall, precision, understanding, and relevance ranking.

With that conclusion as its foundation, the report also recommended several ways that the cost of pre-coordination can be reduced. These methods can be summed up into two general categories. They are: 1. make better use of technology, including developing a new search engine; and 2. simplify the rules for creation and application of pre-coordinated strings.

This document is an accounting of PSD's progress for each of the action items and recommendations presented in the 2007 report. The recommendations are presented in italics and generally appear in alphabetically enumerated lists; the updates are indicated by arrow bullets.

1. *Continuation of pre-coordinated strings*. *In order to benefit from the context provided by pre-coordination as well as to maximize the potential for post-coordinated access, continue to assign pre-coordinated subject strings. However, we also recommend incorporating more automated assistance and simplified application rules as described below in further recommendations.*

<u>*Action items*</u>
Continue to develop and maintain LCSH *for pre-coordinated assignment; continue to recommend automated ways to facilitate clustering, guided searching, faceting on the fly, and machine validation.*

    a. *Provide the Subject Cataloging Manual: Subject Headings to give guidance to catalogers.*
- LC published a new edition of the *Subject Cataloging Manual: Subject Headings*, renamed the *Subject Headings Manual* (*SHM*), in 2008. PSD will continue to issue updates semiannually.

    b. *Review those guidelines for increased consistency and ease of application.*
- Subject specialists constantly review *SHM* instruction sheets for consistency and revise them as necessary.

    c. *Continue the weekly editorial meetings for an open forum to discuss decisions on proposals for new and changed subject headings and related classification numbers.*
- The open editorial meeting is held every Wednesday morning. From August 1-December 31, 2009 there were 3,569 new and changed headings approved, an average of 169 per weekly list.

    d. *Assure editorial oversight of the controlled vocabulary for consistency and maintenance of the syndetic structure.*
- PSD relies heavily on LC and SACO catalogers to propose revisions to inconsistent and outdated headings and cross-references. Proposals are usually scheduled for a *Tentative Weekly List* within a week of their receipt by PSD, and decisions are usually made within six weeks.
- The subject specialists in PSD continue to provide editorial oversight of *LCSH*. The three specialists who rotate responsibility for the *Tentative Weekly Lists* depend on timely comments from LC and SACO catalogers and their fellow policy specialists about proposals that appear on those lists. Controversial, sensitive, or technically difficult issues are discussed in the subject specialists' technical meetings on Friday mornings, where consensus on each issue is reached.

    e. *Encourage more users of* LCSH *to submit suggestions for updates and corrections to existing terms and additional lead-in terms as references using the Web form.*
- A description of the SACO proposal workflow, which gives information on how to check the status of proposals, is now included on LC's web site at http://www.loc.gov/catdir/pcc/saco/SACOWorkflow.html.
- More recruitment of SACO members is being done at PCC "at large" meetings at ALA conferences, and there are sessions on SACO in the ALCTS/PCC workshops "Basic Cataloging Using LCSH," and "Fundamentals of LC Classification."
- At the beginning of Fiscal Year 2009 (October 2008) there were 395 members of the SACO program. Of those, 345 belong to the program by virtue of being full (i.e., not funnel) members of NACO and BIBCO, and 50 are SACO-only members. Of that number, approximately 126 have submitted proposals within the past two fiscal years and are thereby considered active.
- In Fiscal Year 2009, there were 3,739 SACO proposals for new headings and 469 SACO proposals to revise existing records.

    f. *Maintain the authority and bibliographic records that change as a result of approved proposals.*

- Revised subject authority records are distributed on a weekly basis.
- Bibliographic record revisions are accomplished in a timely fashion, usually within a week of a heading revision being approved. In Fiscal Year 2009, the Database Integrity section modified 325,762 bibliographic records.

g. *Continue to develop automated authority record generation and validation to simplify the cataloger's effort and to improve accuracy for new subject headings assigned.*
- PSD has created approximately 50,000 validation records to date. Most of them are created programmatically, when a heading string is used on twenty or more bibliographic records. Five hundred new validation records are created each week, and it is expected that the first pass through the subject headings currently existing in the bibliographic database will be completed by the end of 2010.
- Validation records are also created by searching individual free-floating subdivisions to find every heading in which a subdivision is used, verifying that the heading string is properly constructed, and then creating a validation record. This is a time-intensive process; staff have been doing it for a year, and are still in the "A" section of the free-floating list of subdivisions.
- Validation records can be viewed in *Classification Web* if an individual user chooses to do so.
- The addition of 072 fields to subject authority records (see section 3(f)) may also be utilized to aid in the validation of headings assigned to bibliographic records, because the computer could be programmed to recognize whether an individual subdivision is appropriate for use with an individual heading. Currently, "heading control" functions such as OCLC's can determine only whether a particular subdivision exists, not whether it is applied appropriately.

h. *Continue to apply the agreed recommendations from the 1991 Airlie House conference on new and corrected subject heading strings.*
Airlie House Recommendation #1: Under topical headings (as opposed to name or place headings), place, chronological, and form subdivisions shall be applied as needed and on an individual basis.… If the cataloger chooses to apply subdivisions, the subdivisions should always appear in the following order: topical, geographic, chronological, form.…
- New headings and subdivisions that can logically include an element of place are authorized for geographic subdivision. Policy specialists continue to add authorization for geographic subdivision to existing headings and subdivisions on a case-by-case basis. For instance, in September 2009 the authorization for geographic subdivision was added to the free-floating subdivision –**Political activity**, which may be used under names of individual persons, families, corporate bodies, and military services, and under classes of persons, individual Christian denominations, and types of corporate bodies for works on the political participation of those persons or organizations.
- Some heavily used topical subdivisions have not been authorized for geographic subdivision because the volume of bibliographic file maintenance is too large. However, David Williamson, Cataloging Automation Specialist at LC, is developing a wildcard mechanism for the BatchCat program that will permit subdivisions to be moved from one place to another within a heading string. PSD anticipates that more adjustments to subdivision order will be forthcoming after the mechanism is approved for use.
- In August 2008 the chronological subdivision practice was revised for headings in the field of architecture. Whereas previously those headings that were subdivided geographically could be further subdivided chronologically through the addition of a time period only (e.g., **Architecture—United States—20th century**), now the subdivision –**History** must first be interposed (e.g., **Architecture—United States—**

History—20th century). This revision removes a large exception to standard subdivision practice and thereby brings the headings for architecture into alignment with those for most other disciplines represented in *LCSH*.

Airlie House Recommendation #2: The developing "national authority file" should contain authority records for topical headings and for topical heading-topical subdivision(s) combinations.… Authority records for heading containing subdivisions governed by pattern and free-floating lists will not require formal editorial review. Topical subdivision records and coding showing relationships between headings and topical subdivisions would be desirable features to help create the file and to assist validation. The conference encourages the Library of Congress to continue to expand its programs by which other libraries contribute to the national subject authority file.

- ▶ See section 1(g) for information on validation records; section 3(f) for the progress on adding 072 fields to subject authority records; and section 1(e) for information on the SACO program.

Airlie House Recommendation #3: Chronological subdivisions under topical headings should relate to the coverage of the content of the item and not to its date of issue. The Library of Congress should investigate using numerals as dates or date ranges in chronological subdivisions. The Library of Congress should consider the pros and cons of the use of free-form chronological subdivisions.…

- ▶ LC's response to this recommendation is unchanged from 2007. The Library of Congress has no plans to use numerals for dates or date ranges in chronological subdivisions in all cases, nor to change chronological subdivisions following the subdivision **–History** where alphabetic characters appear as the initial elements. Additionally, LC has decided not to pursue the use of free-form date subdivisions, which would exactly correlate to the chronological focus of a work, instead of using general century subdivisions, which are generally much broader. Using free-form date subdivisions would inhibit collocation of like works since works on the same historical period may differ in the beginning and ending dates of coverage. In addition, free-form date subdivisions would be much more time consuming and difficult to apply since catalogers would have to closely examine each work to determine its exact chronological coverage, which might in fact be vague (e.g., the United States during the Progressive Era).

Airlie House Recommendation #4: The question of whether subdivisions should be coded specifically to improve online displays for end users should be considered.… In particular, the Library of Congress should investigate implementing a separate subfield code for form subdivisions.

- ▶ LC implemented form subdivisions ($v) in 1999.

Airlie House Recommendation #5: The current policy of indirect geographic subdivision should be continued. The Library of Congress should investigate including the direct form of geographic headings in authority records for geographic names.

- ▶ NACO and LC catalogers may add 781 and 667 fields to geographic name authority records. The 781 field shows the form of the geographic subdivision, and the 667 is used when the heading may not be used as a geographic subdivision.
- ▶ In 2006 OCLC programmatically enhanced over 83,000 name authority records for jurisdictions by adding either a 781 or a 667 field. OCLC has since taken another pass at the name authority file, adding 781 and 667 fields where necessary.
- ▶ Gary Strawn from Northwestern University assisted LC in adding 781 and 667 fields to existing geographic subject authority records in 1998.
- ▶ All new geographic subject authority records include either a 667 or a 781 field when they are approved and distributed.

Airlie House Recommendation #6: The Conference strongly recommends that the Library of Congress simplify subdivisions in the Library of Congress subject heading system. Target areas for simplification include the reduction of overly fine distinctions, the consolidation of lists, and increased consistency in syntax....

- ▶ LC's response to this recommendation is unchanged since 2007, namely to continue to examine subdivisions to assure consistency in syntax, to reduce overly fine distinctions, and to consolidate lists. Revisions are made to subdivisions to more closely align with the Airlie House recommendations, regardless of their impact on existing databases. The negative impact is ameliorated at LC by the customized software that allows PSD's Data Integrity Section to quickly make one-to-one changes in corresponding bibliographic records. The *SHM* provides instructions on the consistent application of subdivisions and is updated twice yearly.

i. *Continue to support OCLC's development of FAST for the potential benefit of libraries.*
- ▶ Barbara Tillett, chief of the Policy and Standards Division, is LC's advisor to the FAST project.

2. A new search engine front end to the ILS. *Explore and implement a new search engine front end that offers "guided search" or "clustered searching" capabilities to mine existing terminology to augment and lead users to the controlled vocabulary of* LCSH *and* LCC. *Also enable users to add their own access terms or "folksonomies" to bibliographic records to augment the uncontrolled access. Reference librarians especially should be encouraged, if not required, to contribute to this effort.*

Action items

a. *Compare front-end search engines by conducting a Request for Information (RFI). The Acquisitions and Bibliographic Access Directorate (ABA) requested approval to use CDS FY08 funds to conduct a Request for Information (RFI) to compare front-end search engines and will continue to pursue this test.*
- ▶ The funds to conduct the RFI from CDS were not made available and are no longer accessible. During 2010, a Statement of Work (SOW) will be developed to seek assistance from Library Services Technology Policy Directorate for support.

b. *Collaborate with the Office of Strategic Initiatives (OSI) and continue to support academic research into visualization methods for subject access.*
- ▶ A joint OSI/Library Services task force is experimenting with remediating existing metadata by adding standardized fields where they don't exist (e.g., adding headings based on the name authority file, adding geographic coordinates, and geographic area codes). LC plans to create a prototype public interface to experiment with various search and display options, such as allowing a user to view a map of the United States, click on Alabama, and retrieve all works about Alabama or the Southern States.
- ▶ Under LC's aegis, students from Stanford University are developing methods to create metadata where none currently exists. For example, using texts that LC has scanned, they are developing algorithms to find names, geographic places, and chronologies in the works and converting that information into usable metadata. Another project is the development of short summaries of moving image clips for use on LC's YouTube channel. PSD proposed to OSI and the Stanford students that they assist in developing a system using their visualization tools for *LCSH* and possibly connections to LC Classification to enable access to LC's Civil War materials in time for the Civil War Sesquicentennial in 2011-2015.

- LC continues to develop the XML datastore, which will be a seamless and integrated interface for searching all of LC's collections, the records for most of which are currently in separate "silos" (systems and databases). The XML datastore will take advantage of MARC 21 fixed field coding after it is converted to XML, make use of the hierarchical structure in authority records, employ faceted navigation, and make use of the "did you mean" feature to assist searchers. A test planned for 2010 will include ILS, encoded archival description (EAD), and electronic resource management system (ERMS) records.

c. *Continue to explore social tagging capabilities with OSI and the ILS Program Office.*
- The LC bibliographic database is housed behind the firewall so significant security issues prevent social tagging directly in the catalog.
- PSD is investigating other options for social tagging that will be outside the firewall. The most promising method is to use the *LCSH* SKOS interface, id.loc.gov. PSD is working with the Network Development and MARC Standards Office (NDMSO) to add such a mechanism to the interface, perhaps by modifying the "comments" box or by adding a separate box specifically for the inputting of social tags.
- PSD is investigating the possibility of adding social tagging to *Cataloger's Desktop* and *Classification Web*, both of which may be particularly useful for catalogers. With the implementation of expected new enhancements for *Classification Web* in mid- to late-2010, there should be a mechanism to allow more direct user input into the product. This is on temporary hold as the *Class Web* project manager works on a high-priority work detail.
- LC is using social tagging, notes, and comments to enhance its cataloging by posting photograph collections on Flickr, whose users provide information about them. The community-generated content is then used to enhance the bibliographic data. Two of the major hurdles to beginning this project were coming to agreement with Flickr over rights statements associated with historical photographs held by cultural heritage institutions, and modifications to the terms of service agreements required by federal institutions. To date, links from LC's prints and photographs catalog to Flickr have been added to all photographs that are part of the project, and over one thousand catalog records have been enhanced or corrected from community input.

d. *Encourage reference librarians and SACO partners to contribute terminology to use as references to existing LCSH terms to expand front-end, entry-vocabulary to controlled terms.*
- PSD will do more to encourage reference librarians to submit terminology, and will explore such services as a Web form or template for reference librarians to easily submit suggestions. For SACO efforts, see section 1(e).

3. *Simplification of cataloger's work.* *Continue to explore ways to simplify the cataloger's work in devising subject heading strings.*

Action items
Automate LCSH *term assignment and increase the use of* Class Web *to suggest previously used subject headings and class numbers for a topic.*
a. *Hire a* Classification Web *coordinator, who will work on reminders to LC staff, training (such as the Instructional Development and Training Division's 'Skill Builders' on* Class Web*), and additional promotion of* Classification Web *both within and outside LC.*
- Patricia Hayward was hired as the *Classification Web* coordinator, and after spending a year to familiarize herself with the system, is now ready to promote and work on improvements to it and to train staff. For the latter, the particular emphasis

will be on delivery of training through webinars/webcasts and other online, interactive modes to facilitate users' access.

b. *Continue to include instruction on using the automated* LCSH *proposal forms as part of* LCSH *training classes offered through LC's Instructional Design and Training Division (IDTD).*

- ▶ PSD will offer classes in collaboration with COIN to LC staff as needed to familiarize them with proposing new and revised LC subject headings. [Note: IDTD was reorganized to COIN, Cooperative & Instructional Programs Division.]
- ▶ The ALCTS/PCC workshop "Basic Subject Cataloging Using LCSH" includes a session on the SACO proposal process and gives instruction on the use of the web form. LC staff led this workshop eight times in fiscal years 2008 and 2009, and each session included fifteen to twenty students. In addition, LC staff presented a workshop entitled "Using LCSH for E-CIP Members" to ten attendees in July 2008.

c. *Continue a project to add class numbers to subdivision authority records and other subject authority records as appropriate to enhance the* Class Web *capabilities. Expand and systematize projects to add class numbers to subject headings that have corresponding class numbers to enable a first step towards machine-assisted assignment of subject strings.*

- ▶ 053 fields may be added to subject authority records if the caption for the number is identical or nearly identical in scope, meaning, and language to the subject heading; if the topic is explicitly mentioned in an "Including" note under the caption for the number; or if the topic belongs to a category for which it is standard LC classification policy to classify works at a level that is broader than the subject headings assigned. PSD recently decided to also allow 053 fields to be added if the number is built from a table or from a cutter list located elsewhere in the schedules.
- ▶ Existing subject authority records are enhanced with 053 fields as appropriate when they are edited for another reason or when catalogers request PSD to add them. 053 fields are included in subject authority records when the classification number and subject heading have been proposed and approved at the same time.
- ▶ PSD is planning a project to add 053 fields to authority records for Civil War battles, in recognition of the 150th anniversary of the war. The classification schedules will also be updated as necessary, to ensure that all established Civil War battles are specifically listed there.
- ▶ Using the existing correlation capabilities in *Classification Web*, PSD is working to develop and expand the relationships between the classification numbers of a variety of systems (e.g., NLM classification numbers) and subject headings, as well as to exploit more fully the connections between bibliographic records, classification numbers, and subject headings. In addition, new enhancement capabilities will also be added in 2010, which will provide the ability to link to name authority information.

d. *Work with David Williamson, senior automation specialist for ABA, to explore metadata generation software such as used by the World Bank and experimental systems being studied through the University of North Carolina, School of Information and Library Science's Metadata Research Center; to test and hopefully implement such a capability during FY08.*

- ▶ Following significant explorations into existing systems and parameters for such capabilities, PSD determined this is not yet worth our effort to pursue.
- ▶ One of the major preconditions of such a project is the availability of a large body of high-quality textual digital content. LC currently has very little of it, the largest body being the electronic galleys submitted for the Electronic Cataloging in Publication (ECIP) program. Even those texts are problematic, since many of them

are incomplete. Most of the Library's other digital and digitized works are pictorial, cartographic, or moving images, for which textual analysis is considerably more challenging with existing tools and resources. PSD recommends LC continue to monitor automatic generation of subject headings, but that we not take such a project on until it seems more likely worth our efforts.

- ▶ Two other preconditions inhibit progress.

    First, the software used must be advanced and sophisticated enough to determine context. Because computerized language analysis has advanced far enough in terms of looking at the frequency and importance of words, their relevancy, and parts-of-speech analysis, it is a relatively simple matter to determine, for example, which war for independence an author may be discussing. The situation becomes murkier in cases of metaphorical language. For example, Andrew Carnegie was often called a saint because of his philanthropic giving to libraries. A software program automatically indexing the Carnegie Corporation of New York's web site (http://www.carnegie.org), would have to be sophisticated enough to not to assign to it the subject heading "Saints," despite the fact that it says, "…he is often referred to as the 'Patron Saint of Libraries.'" In a collection as diverse as LC's it is difficult to train software to recognize the difference between metaphorical and specific language.

    Second, the software must be highly trainable, and there must be highly trained people available to perform the training. An off-the-shelf product would not work well. LC does not currently have the staff to devote to such a labor-intensive and time-consuming process.

- ▶ Explorations conducted to date include ongoing participation in the HIVE project for automatic metadata generation; follow-up with the World Bank's accomplishments; collaborations with summer interns from Stanford University students (see section 2(b)); and testing the National Library of Australia's subject suggester software and the National Library of Medicine's software to suggest *MeSH* (*Medical Subject Headings*) for digital articles. The Library of Congress does not have an indexing mandate for journal articles (as the World Bank and NLM do), and does not have a large body of digital resources to be cataloged that would make the development effort worthwhile at this time.

- ▶ On September 29, 2009 LC staff met with Denise Bedford, who "trained"/helped develop the World Bank's metadata generation system, Teragram. The training of such a knowledge-based system is extremely time-consuming for even the specialized focus of the World Bank. To generalize that to all subject areas covered by the Library of Congress collections is not feasible.

e. *Automate the verification and validation of strings further.*

- ▶ See section 1(g).

f. *Build more coded structures within* LCSH *to enhance the ability for systems to suggest terms. Code many subject authority records so that headings can be matched with an appropriate free-floating subdivision list to simplify the construction of subject heading strings and allow for automatic or computer-assisted assignment of subject strings and machine validation. The* Class Web *Coordinator will work with David Williamson to explore how to automate this. Use detailees to target new categories that are needed and to experiment with "Plants" as a start.*

- ▶ All of the subdivision authority records (MARC 21 tags 180, 185) include 073 fields, which contain the *Subject Headings Manual* instruction sheet number(s) to which a subdivision applies. Matching the subdivision to the headings requires that 072 fields, the other half of the 072/073 pair, be added to each subject heading record.

- PSD is beginning an experiment to determine the best way to approach the addition of 072s. One roadblock to the experiment is the number of exceptions to the general rules, even within an instruction sheet for one pattern heading. PSD has decided to approach the problem from two angles. In the first approach, a specialist will work with an existing pattern that contains a relatively small number of headings (Materials, H 1158) to determine whether the applicable authority records can be found easily, and whether the addition of the 072 to any of the records could be misleading (i.e., are there any exceptions to which any or all of the free-floating subdivisions for materials would not apply). The second approach consists of another specialist writing an instruction sheet for a new pattern (topical works on moving images) with computer processing in mind (i.e., with few or no exceptions included). The headings will then be extracted from *LCSH* and any unforeseen exceptions will be accounted for.

  PSD plans to use the results of this experiment to determine whether a project to add 072 fields to subject authority records can move forward at this time; and if so, what the procedures should be. If the experiment is successful, David Williamson, LC's Cataloging Automation Specialist, will be consulted to programmatically add the 072 fields to the selected subject authority records.

g. *Remove subdivision by language for subject headings except **Dictionaries** (e.g., **Catholic Church—Catechisms—French**), thereby removing instances of "topical" subdivisions after forms. Check for any categories other than "dictionaries" where the language subdivision should remain. Depend instead on the language coding in the bibliographic record (041 field and the 008, positions 35-37) rather than on the subject heading subdivision. Coordinate a test with LC's reference librarians to check the impact of this recommendation. Prepare notices to users and seek comments and suggestions during FY08.*

- LC's OPAC can limit by language based on field 008/25-37 and the 041 field. However, a project to revise the 041 data in records created before its subfields became repeatable is on hold. Therefore, the language limit in the OPAC is of only limited utility, and removing the language subdivision may hinder discovery of library materials.

h. *Explore giving some form subdivisions in a separate 655 field as a form heading rather than redundantly with each subject heading.*

- Removing the form subdivisions from headings would weaken the usefulness of subject heading browse displays, so PSD does not intend to implement this action item at this time. However, it is modifying select groups of existing form subdivisions so as to limit redundancy with the genre/form headings it is developing.
- PSD is actively pursuing the development of a genre/form thesaurus. The first project, for moving images (films, television programs, and video recordings) began in the spring of 2007. A project for radio programs was soon added. PSD continues to investigate ways to enhance user access to the headings (e.g., heading format, hierarchies).
- In late 2007 LC's Acquisitions and Bibliographic Access (ABA) managers approved the development of five more categories of genre/form headings: cartography, law, literature, music, and religion. To date, the cartography, law, and music projects have begun. PSD is collaborating with the Music Library Association (MLA), the American Association of Law Libraries (AALL), and the American Theological Library Association (ATLA) for the music, law, and religion projects, respectively.
- As part of the cartography project, in June 2009 PSD posted a discussion paper explaining a proposal to simplify the form subdivisions used for many cartographic materials. In brief, the paper suggested the removal of the adjective where it existed

(e.g., **–Maps, Comparative** would become **–Maps**). The new genre/form headings would then do the "heavy lifting" of identifying a particular form of material. The responses to the proposal were generally favorable, so PSD has decided to implement the changes. The end result will be less redundancy between the form subdivisions and the genre/form headings. The change will most benefit libraries with small collections, since all maps of a particular geographic feature or jurisdiction will be collocated, and should also benefit all libraries that have advanced search and display capabilities such as faceting.

   The subdivisions will not be changed until the genre/form headings are in place. Authority records are being made, and PSD anticipates approving the first group of headings in late spring or early summer 2010.

- As part of the moving image project, PSD decided to cancel the topical headings (MARC 21 tag 150) for genres of video recordings (e.g., **Animated videos**); the cancelled headings are now UFs to the correlated film headings (e.g., **Animated films**). The form subdivisions **–Video catalogs**, **--Video recordings for foreign speakers**, and **–Video recordings for French, [Spanish, etc.] speakers** will also be cancelled in favor of the **–Film…** equivalent, and the subdivision **–Film and video adaptations** will be revised to **–Film adaptations**.

- MLA and PSD have been collaborating on the deconstruction of existing music subject headings (MARC 21 tag 150) into their components: genres and forms of music, and mediums of performance. Doing so will allow them to be coded and searched separately.

- In November 2009 AALL presented PSD with its report, "Genre/Form Terms for Law Materials." PSD is collaborating with AALL on some issues to be resolved, after which authority records will be created. PSD hopes to approve the first law genre/form headings in 2010.

- Janis Young, LC's genre/form coordinator, will attend ATLA's annual conference in June to kick off the religion project.

   i.   *Test the feasibility of offering the* LCSH *vocabulary in a format usable on the Web to encourage development of applications that we hope would help both catalogers and end users.*

- The LC SKOS web site, id.loc.gov, was launched in May 2009. This free service allows the downloading of all authorized *LCSH* headings, in multiple formats. There is also a search interface for human end-users, which provides record details and record visualization. Since its launch there have been several improvements: a scope statement was added to clarify the contents; there are now weekly updates; deleted headings are now accessible; and there is an improved search function.

- Six near-term enhancements are considered to be high priority: the ability to search alternate terms (UFs) in the search box; the addition of subdivision rules that will allow for machine application of free-floating subdivisions (this is dependent on the 072 field being added to the records, see section 3(f) for details); enhanced statistical information, including information about who is using the service and how; on-screen visualizations; social tagging (see section 2(c)); and a list of "bucket terms" on the screen.

- Several independent projects to utilize *LCSH* headings are underway and can be searched online, including one at the Universitätsbibliothek Braunschweig (http://www.biblio.tu-bs.de/db/lcsh/index.htm). Another, located at http://lcsubjects.org, states on its opening page, "The inspiration, as well as the seed data, for this project was entirely from http://lcsh.info [i.e., http://id.loc.gov]." The HIVE project, which is an automatic metadata generation approach that integrates discipline-specific controlled vocabularies encoded with SKOS, is also using *LCSH*

as one of its three vocabularies. The HIVE project's web page can be viewed at http://karya.nescent.org:9090/home.html.

- Future plans include adding more vocabularies including the *Thesaurus for Graphic Materials* (*TGM*), MARC geographic area codes, language codes, and relator codes; and linking to other terminologies available on the Internet (such as has been done for *RAMEAU*) as well as other language versions of *LCSH*.