FAST
A Faceted LCSH-Based Subject Vocabulary

Faceted Application of Subject Terminology

Need for New Approach to Subject Vocabulary for Electronic Resources
- Phenomenal growth of electronic resources,
- Emergence of numerous metadata schemes,
- Need for a new approach to subject access,
- OCLC’s search for a subject access system for Dublin Core metadata records
- Lack of skilled subject catalogers

Schema Requirements
- Simple in structure and syntax,
- Usable by non-catalogers and in non-library environments,
- Optimal access points,
- Semantic interoperability to enable users to search across discipline boundaries,
- Compatible with MARC, Dublin Core, and other popular metadata schemas,
- Easy to maintain and amenable to automatic authority control and computer manipulation.

Options
Three basic choices in selecting an indexing/subject heading schema for Internet resources:
- Develop a new schema,
- Use an existing schema(s),
- Adapt or modify an existing schema

Subject Representation in Metadata
- Vocabulary (Semantics): Terminology and term relationships
- Application (Syntax): How words are put together to form subject terms

Advantages of LCSH
Rich vocabulary covering all subject areas
- Synonym and homograph control
- Extensive hierarchical and associative references among terms
- De facto standard controlled vocabulary, extensively used by libraries, contained in millions of bibliographic records.
- Long and well-documented history,
- Strong institutional support of the Library of Congress.
<table>
<thead>
<tr>
<th>Card Format</th>
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<tbody>
<tr>
<td>• Cards required pre-coordinated vocabulary,</td>
</tr>
<tr>
<td>• LCSH was originally created for card catalogs—a 3x5 card environment,</td>
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<tr>
<td>• Cards restrict the limits number of entries.</td>
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<table>
<thead>
<tr>
<th>LCSH Application Rules</th>
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<tbody>
<tr>
<td>The full-string approach to complex subjects is designed:</td>
</tr>
<tr>
<td>☑ To ensure precision in retrieval</td>
</tr>
<tr>
<td>☑ To facilitate browsing of multiple-concept or multi-faceted subjects in the online catalog</td>
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<table>
<thead>
<tr>
<th>LCSH in the Electronic Environment</th>
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<tbody>
<tr>
<td>• LCSH is not compatible in syntax with most other controlled vocabularies</td>
</tr>
<tr>
<td>• LCSH is not amenable to search engines outside of the OPAC environment</td>
</tr>
<tr>
<td>• Few LCSH headings are established</td>
</tr>
<tr>
<td>• Complex subject heading strings in bibliographic or metadata records are costly to maintain</td>
</tr>
<tr>
<td>• LCSH does not lend itself to automatic indexing or authority control</td>
</tr>
<tr>
<td>• The use of LCSH requires highly trained personnel</td>
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<table>
<thead>
<tr>
<th>FAST schema</th>
</tr>
</thead>
<tbody>
<tr>
<td>• LCSH vocabulary</td>
</tr>
<tr>
<td>• Simplified syntax</td>
</tr>
<tr>
<td>– Designed for an online environment</td>
</tr>
<tr>
<td>– A post-coordinated faceted vocabulary</td>
</tr>
<tr>
<td>– Hierarchy is retained within facets</td>
</tr>
<tr>
<td>• Retains the advantages of a controlled vocabulary</td>
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</table>

<table>
<thead>
<tr>
<th>Objective of FAST Project</th>
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<tbody>
<tr>
<td>• Develop a new subject heading schema by faceting LCSH that:</td>
</tr>
<tr>
<td>• Is easy to use, understand, and maintain</td>
</tr>
<tr>
<td>• Is suitable for metadata,</td>
</tr>
<tr>
<td>• Minimizes the construction of headings,</td>
</tr>
<tr>
<td>• Simplifies the syntax,</td>
</tr>
<tr>
<td>• Retains the richness of the vocabulary,</td>
</tr>
<tr>
<td>• Is upwardly compatible with LCSH.</td>
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<table>
<thead>
<tr>
<th>Characteristics of FAST</th>
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<tbody>
<tr>
<td>• Vocabulary: Enumerative vs. Faceting</td>
</tr>
<tr>
<td>– Terms in same facet – enumerated</td>
</tr>
<tr>
<td>– Terms in different facets – listed separately</td>
</tr>
<tr>
<td>• Retrieval: Precoordination and Postcoordination</td>
</tr>
<tr>
<td>– Terms in same facet – precoordinated</td>
</tr>
<tr>
<td>– Terms in different facets - postcoordinated</td>
</tr>
</tbody>
</table>
Vocabulary: Enumeration and Faceting

- Headings in the FAST database include single-concept as well as multiple-concept headings.
- Each FAST heading or heading-string belongs to a single facet.

Sources of FAST Headings

- Library of Congress Subject Headings
- Headings Assigned to Bibliographic Records in the WorldCat
- Created Headings

Faceting

- Reduces the number of possible headings and heading strings
- Permits independent use of headings
- Headings are less volatile
  - ~9,000,000 different LCSH topical headings in bibliographic records
  - ~400,000 FAST topical headings
- Fewer infrequently assigned headings
- Supports faceted searches

Eight Facets

- Topical
  - Sailing—Safety
  - —measures
  - Geographic
    - Florida—Orlando
  - Form (Genre)
    - Bibliography
  - Chronological
    - 1939 - 1945
- Personal Names
  - Dewey, Melvil, 1851 -1931
- Corporate Names
- American Library Association
- Conference/Meetings
- Uniform Titles

Main Headings

A FAST main heading contains a word or phrase representing a concept or entity that falls into one—and only one—of the eight FAST facets.

- Banks and banking
- Bibliography
- California
- Catalogs
- 1914 - 1918
- Chemistry, Organic
- Emigration and immigration
- Self-esteem
- Spain
**Subdivisions**

A heading string may contain one or more subdivisions belonging to the same facet as the main heading:
- Abortion—Law and legislation—Criminal provisions
- Alcoholics—Services for—Planning
- Americans—Travel—Historiography
- Asians—Legal status, laws, etc.
- Bibliography—Union lists
- Brain—Cancer—Patients—Family relationships
- California—San Francisco—Chinatown
- Michigan—Lake Charlevoix
- Ohio—Columbus

**Modular Approach**

- Each facet forms a distinct and discrete list of headings in a separate file.
- These lists may be used together or separately. In a particular application, not all facets are required. For example, in indexing a collection of naturally occurring objects, the chronological and personal name headings may not be applicable.
- One or more of the facets may be used with other standard lists, for instance, using topical headings from FAST and geographic headings from the Getty Thesaurus of Geographic Names (TGN)

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**All Headings Are Established**

- FAST uses the MARC 21 authority format
- The MARC 21 bibliographic and authority formats were revised to accommodate FAST by authorizing the x48 (Chronological) fields
- Assigning FAST headings doesn’t require an understanding of the rules for constructing headings
- Authorities can serve as indexes
- Automatic and/or machine assisted assignment possible

**FACET: Topical**

- LCSH main headings from topical headings (650),
- All associated general ($x$) subdivisions from any type of LCSH heading,
- Period subdivisions containing topical aspects from any type of LCSH heading,

**Topical Headings**

- Secret service
- Urbanization
- Hospitals—Administration—Data processing
- Cataloging—Analytical entry
- Photoconductivity—Measurement
- Woodwind trios (English horn, oboes (2))
- Sailing—Safety measures

**Topical Authority Record**

<table>
<thead>
<tr>
<th>001</th>
<th>fast01022140</th>
</tr>
</thead>
<tbody>
<tr>
<td>003</td>
<td>OCoLC</td>
</tr>
<tr>
<td>005</td>
<td>200410241903313.0</td>
</tr>
<tr>
<td>008</td>
<td>041024000193940n d</td>
</tr>
<tr>
<td>040</td>
<td>OCoLC $b eng $c OCoLC $f fast</td>
</tr>
<tr>
<td>150</td>
<td>Mine safety</td>
</tr>
<tr>
<td>450</td>
<td>Mine accidents $x Prevention</td>
</tr>
<tr>
<td>450</td>
<td>Mining engineering $x Safety measures 450 Mining safety</td>
</tr>
<tr>
<td>550</td>
<td>Industrial safety</td>
</tr>
<tr>
<td>550</td>
<td>Mineral industries $x Safety measures</td>
</tr>
<tr>
<td>688</td>
<td>LC subject usage: 203 (2005)</td>
</tr>
<tr>
<td>688</td>
<td>WC subject usage: 2,094 (2005)</td>
</tr>
<tr>
<td>750</td>
<td>0 Mine safety $0 (DLC)sh 85080532</td>
</tr>
</tbody>
</table>
FACET: Geographic

- Geographic names will be established and applied in indirect order, [Louisiana—New Orleans not New Orleans—Louisiana]
- First level geographic names will be limited to names from the Geographic Area Codes table (e.g., Ohio, Victoria, Great Lakes, etc.) Other names will be entered as subdivisions under the smallest first level name in which it is fully contained [Europe—Curzon Line]
- Bodies of water (Bays, Gulfs, etc.) that are part of oceans are established under the larger body of water [Atlantic Ocean—Chesapeake Bay not Chesapeake Bay (Md. and Va.)]
- Geographic Area Codes are included in all authority records for geographic names

Geographic Heads

- Great Lakes [nl]
- Germany [e-gx]
- Mars [zma]
- Japan—Tokyo Metropolitan Area [a-ja]
- Maryland—Worcester County [n-us-md]
- Slovenia—Maribor [e-xv]
- England—Chilton (Oxfordshire) [e-uk-en]
- India—Limbdi (Princely State) [a-ii]
- California—San Francisco—Chinatown [n-us-ca]
- Alaska—Rowan Bay (Bay) [n-us-ak]

Geographic Authority Record

| 001 | fst01340110 |
| 003 | OCoLC |
| 005 | 200604121342229.0 |
| 008 | 060412nneanz|babnana and |
| 040 | OCoLC $b eng $c OCoLC $f fast |
| 043 | p |
| 151 | Pacific Ocean $z Rowan Bay |
| 670 | GNIS, Feb. 10, 2004 $b (Rowan Bay; bay; 7 mi. N of Tebenkof Bay, on W coast of Kuki I., Alex. Arch.; Wrangell-Petersburg Census Area, Alaska; 56°40'02"N, 134°14'34"W; another Rowan Bay, pop. place in Wrangell-Petersburg Census Area) |
| 751 | 0 Rowan Bay (Alaska : Bay) $0 (DLC)sh2004005090 |

Example of Faceting

LCSH Topical Heading: Architecture, Modern $y20th century $z Illinois $z Chicago $v Guidebooks.
Derived FAST Headings:
Architecture, Modern (Topical)
Illinois $z Chicago (Geographic)
1900-1999 (Chronological)
Guidebooks (Form)

Form (Genre)

- Case studies
- Abstracts
- Census
- Rules
- Dictionaries
- Folklore
- Bibliography—Union lists
- Periodicals
- Guidebooks

Form Authority Record

| 001 | [unassigned] |
| 003 | OCoLC |
| 005 | 20040609141603.0 008 040609nmeanz|babnana and d 040 | OCoLC $b eng $c OCoLC $f fast |
| 155 | Guidebooks |
| 455 | Guides |
| 455 | Identification |
| 455 | Outdoor books |
| 688 | LC usage 69,842 (2004) |
| 688 | WC usage 335,129 (2004) |
| 785 | 0 Guidebooks $0 (DLC) sh 99001297 |
Personal and Corporate Names

• **Headings for persons:**
  – Woodward, Bob
  – Dewey, Melvil, 1851-1931
  – Kennedy family
  – Edward II, King of England, 1284-1327

• **Headings for corporate bodies:**
  – OCLC
  – Bayerische Motoren Werke
  – United States, Coast Guard
  – Bodleian Library

Chronological (Period)

• FAST chronological headings consist of only a single date or a date range
• Limited to a single chronological heading per bibliographic record
• Authority records will only be established when needed for references or linkages
• Headings consist of a starting and ending date but will be formatted for display:
  – 1945
  – 1942 – 1945
  – Since 1987
  – 221 B.C. – 220 A.D.

Chronological Events Subdivisions

In LCSH, it is common to include topical information in chronological ($y$) subdivisions:

Buffalo (N.Y.) $x$ History $y$ Civil War, 1861-1865

Grenada $x$ History $y$ American Invasion, 1983

For these subdivisions, a FAST topical heading is also created:

• American Invasion (Grenada, 1983)
• Civil War (United States, 1861-1865)

LCSH to FAST Conversion

• LCSH
  • 650 Lincoln, Abraham, $d$ 1809-1865
  • 650 Political leadership $z$ United States $v$ Case studies
  • 655 Genius $z$ England
  • 655 Biographies
  • 651 United States $x$ History $y$ Revolution, 1775-1865 $v$ Biography.
  • 655 Politics and government $y$ 1861-1865
  • 655 Political science
  • 655 United States $x$ History $y$ Revolution, 1775-1863

Faceting of LCSH

• 650 American loyalists $z$ England.
• 651 United States $x$ History $y$ Revolution, 1775-1783 $v$ Biography.
• 655 Secret service $z$ Great Britain.
• 655 Painters $z$ United States.
• 648 1775 - 1783
• 650 American loyalists
• 650 Revolution (United States, 1775-1783)
• 650 Secret service
• 650 Painters
• 651 England
• 651 United States
• 651 Great Britain
• 655 Biography
• 655 History

Databases

• The FAST database is available as an OCLC SiteSearch database at http://fast.oclc.org
• The database may be unavailable for extended periods
• This version of FAST is being applied and evaluated in a few applications
Authority Control: FAST vs. LCSH

- In LCSH, while many headings are established; most assigned headings are synthesized by catalogers based on rules.
- For FAST, all headings (except chronological) are established and only established headings can be assigned.

Current FAST Database
http://fast.oclc.org

- Personal name headings 510,095
- Corporate name headings 283,581
- Topical headings 412,709
- Geographic name headings 148,960
- Form headings 694
- Total FAST authorities 1,356,039

Valid But Not Established LCSH

- Established Main heading/free-floating subdivision(s):
  - Burns and scalds—Patients—Family relationships
  - Travel—Early works to 1800
- Free-floating phrase headings
  - Woodwind trios (English horn, oboes (2))
- Geographic subdivisions
  - Banks and banking—United States
- Multiples
  - United States. Navy—History—War of 1812

LCSH Pattern Subdivisions

Free-floating subdivisions controlled by pattern headings are one example of how an established heading can be expanded. The scope of patterns is limited to particular types (patterns) of headings.

Burns and scalds $x$ Patients $x$ Family relationships

By establishing the complete heading in FAST, the complexity of rules under which they were originally established is effectively hidden.
Future Development Plans

- Update and resynchronize all FAST headings with LCSH
- Develop the conference/meetings facet
- Develop the uniform titles facet
- Expand the geographic names based on usage data and add information from the Geographic Names Information System (GNIS)
- Revise and expand the form (genre) facet
- Complete the FAST manual

Advantages of FAST

- Simple syntax
- A tiered approach to allow different levels of subject representation
- Accommodate different retrieval models
- Able to accommodate both precoordinate and postcoordinate indexing and retrieval
- More amenable to computer-assisted indexing
- Facilitate computer-assisted authority control
- Easier and more economical to maintain than a highly enumerated vocabulary
- Facilitate mapping of subject data and cross-domain searching