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Guidelines for OPAC Displays

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I have been invited to serve as a consultant to the International Federation of Library Associations and Institutions (IFLA) Task Force on Guidelines for OPAC Displays. I would like to take this opportunity to describe the process of developing the guidelines, including the project's goals, the principles we developed, and the controversies that arose in the course of carrying out the project.

History of the Project

At the 1997 meeting in Copenhagen, the IFLA Task Force on Guidelines for OPAC Displays was constituted by the Division of Bibliographic Control. It was agreed that members of the task force would be drawn from the Section on Bibliography, the Section on Cataloguing and the Section on Classification and Indexing from the Division of Bibliographic Control, and from the Section on Information Technology. Commentators were invited to participate from a number of sections and round tables.

Drafts of the guidelines were prepared by the consultant and discussed and revised by the task force. Much of the editorial work was conducted via an electronic discussion list of the task force, at a meeting of the task force held during the 1998 IFLA meeting in Amsterdam, and at two meetings of the task force held during the 1999 IFLA meeting in Bangkok. In November 1998, a draft of the guidelines was sent out for worldwide review, and in July 1999, a new draft was prepared for discussion in Bangkok, based on the comments received from the people around the world who took the time to comment. A final draft was prepared in September 1999, based on discussions at the Bangkok meeting.

Goals

A number of OPAC use studies have been conducted since the early 1980s, yet OPAC development has been governed by system designers, bibliographic network librarians, public service librarians, and technical services librarians without much reference to the user needs revealed by these studies. Also, existing OPACs demonstrate significant differences in the range and

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complexity of their functional features, terminology, and help facilities. The lack of standardization across OPACs can make it difficult for catalogue users to apply their knowledge of one OPAC to searching another OPAC in a different library. Thus, the task force believed it was necessary to incorporate a corpus of good practice into the guidelines or recommendations in order to assist libraries in designing or redesigning their OPACs.

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Audience

The history of OPACs has been one of movement from centralized systems designed and controlled by system designers and programmers, to more and more distributed and customizable systems. These more customizable systems put more of the burden for effective OPAC design on the shoulders of librarians in the libraries that purchase these systems from vendors. Even so, there are still a number of areas in which poor system design prevents librarians from being able to achieve optimal customization. Thus, the audience for the guidelines should be both librarians charged with customizing OPAC software and vendors and producers of this software.

The guidelines are mainly designed for general libraries containing works in both the humanities and the sciences, not for highly specialized libraries with different needs. Since *OPAC* means *online **public** access catalogue*, recommendations are focused on displays for the public, not on displays to support specialized library tasks such as serials check-in and acquisitions. However, all of the displays recommended in the guidelines should be made available to library staff as well; they should not be regarded as useful to the public alone.

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Scope

The goal of the project was to recommend good practice in the display function of OPACs. The guidelines are intended to apply to all types of catalogues, including Web-based catalogues, catalogues with graphical user interfaces (GUIs), and catalogues with Z39.50 interfaces.

The guidelines focus on the display of cataloguing information (as opposed to circulation, serials check-in, fund accounting, acquisitions, or bindery information). However, some general statements are made concerning the value of displaying to users information drawn from these other types of records. The guidelines do not attempt to cover Help screens, searching methods, or command names and functions. Thus, the guidelines do not directly address the difference between menu-mode access (so common now in GUI and Web interfaces) and command-mode access (often completely unavailable in GUI and Web interfaces). However, in menu-mode access, the user often has to go through many more screens to attain results than in command-mode access, and each of these screens constitutes a display.

The guidelines recommend a standard set of display defaults, defined as

features that should be provided for users who have not selected other options, including users who want to begin searching right away without much instruction. It is not their intent to restrict the creativity of system designers who want to build in further options beyond the defaults for advanced users, those people willing to put some time into learning how to use the system in more sophisticated and complex ways. The goal for the display defaults recommended is ease of use, defined as the provision of as much power as possible with as little training as possible. If such defaults were widely implemented, users would benefit by being able to transfer catalogue use skills acquired in one library to many other libraries. Now that so many library catalogues are available over the Web, this benefit is particularly attractive.

The task force is aware that many existing systems are incapable of following all of the recommendations in this document. Although some commentators expressed concern over this during the course of world-wide review, we feel that the guidelines should be visionary, and should attempt to point out the many areas in which there is room for significant improvement in existing OPACs. We hope that existing systems will attempt to work toward implementing the guidelines as vendors develop new versions of their software in the future.

The content and structure of the records available for use in OPAC displays are determined by current cataloguing rules. The identification of the various types of data and records available is determined by the MARC formats.[1] We take current cataloguing rules and current MARC formats as a given in this document, and try to suggest better ways to use existing records in OPAC displays. We do not try to suggest ways that actual changes in cataloguing practice might help to improve OPAC displays, although we recognize that many potential solutions to OPAC display problems lie in changes in cataloguing practice.

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Organization

The guidelines are divided into principles and recommendations. The principles are general statements of the goals of the guidelines, and are intended for use whenever situations arise that are not covered by the more specific recommendations. The principles are intended to provide a context and a rationale for the recommendations. The recommendations are meant to be a more detailed expansion of the principles into actual practice. In a sense, one could say that the principles provide the *why* and the recommendations provide the *how*.

The order of the principles is based roughly on generality, with the more general principles first, and the more specific ones last; the principles concerning display of headings tend to precede those that concern display of bibliographic records. The principles could have been organized in a number of different ways. When we attempted to classify them, we found it was very difficult to design a set of categories that was not riddled with cross-classification. However, we recognized that under various circumstances it might be useful for users to group several together in different ways, depending on the nature of their immediate information needs.

The recommendations are organized based on the four main search objectives

with which users approach library catalogues:

1. The works of a particular author, composer, choreographer or other creator, or of a particular corporate body
2. A particular work
3. Works on a particular subject or in a particular form or genre
4. Works that take a particular disciplinary approach (identified by means of classification)

We believed that different displays are needed for each of these types of search objectives. Beginning with some general recommendations that apply to all searching objectives, the guidelines proceed to give more specific ones that apply only to each particular objective.

Within each of these four objectives, the guidelines are organized based on the types of searching that might be available. We have identified at least four types of searching in existing online public access catalogues:

- **Keyword-within-heading searching**, in which the user types in keywords that the system matches against the words in a single heading in a headings index in which headings are linked to bibliographic records. Keywords are matched to words in the heading without regard to order. The result of the search is a display of headings.
- **Exact-beginning searching**, in which the user types in a string of characters that the system matches against headings in a headings index in which headings are linked to bibliographic records. The user's string is matched in the exact order in which the user typed them, with the first word of the search being matched against the first word of the heading. The result of the search is a display of headings.
- **Phrase searching**, in which the user types in a string of characters that the system matches against headings or other fields in bibliographic records. The user's string is matched in the exact order in which the user typed them, but without regard for the first words of fields or headings. If only headings are searched this way, the result should be a display of headings from the headings index linked to bibliographic records. If nonheading fields are searched this way, the only possible result would be a direct display of bibliographic records matched.
- **Keyword-within-record searching**, in which the user types in keywords that the system matches without regard to order against all words in a single bibliographic record, or all words in a group of fields within a single bibliographic record, such as all fields containing subject terms or all title fields. The only possible result of such a search would be a direct display of bibliographic records matched, since the search can easily match words that are not in a heading field, or words that are in more than one heading field. Heretofore, systems have not applied this kind of searching to authority records, so generally cross-references are not matched on or retrieved from this kind of search.

Most systems that offer combined index searches will do only a keyword-within-record search for a combined index search, effectively ruling out any search of authority records.

Most systems that allow users to limit searches by date, language, format, etc., will do only either a keyword-within-record or a phrase search in

bibliographic records for any search that has a limit, effectively ruling out any search of authority records.

The guidelines are not intended to address the question of the ideal types of searching that should be provided in OPACs. These types of searching are defined here only because the displays that are available to the user often depend on the type of searching that resulted in the displays. For example, any type of keyword-within-record searching cannot result in headings displays, since the search could easily match a field which is not a heading at all, or it could match several different heading fields.

Note also that even though the guidelines do not address searching directly, we do advise that searching decisions be made in conjunction with display decisions and vice versa. We want to avoid the situation in which a piece of data that has been made searchable cannot be seen in any of the resultant displays.

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Principles

Principle 20	Display works about a work, or related to a particular work with the work
Principle 21	Display works about a particular genre or form with examples of the genre or form
Principle 22	Create clear displays of serial works that have changed title
Principle 23	Display the hierarchical relationship between headings and their subject subdivisions
Principle 24	Display the hierarchical relationship between a corporate body and its subordinate bodies
Principle 25	Display the hierarchical relationship between a work and its parts
Principle 26	Display the hierarchical relationship between a classification number and the entire classification
Principle 27	Avoid repetition of the same heading or bibliographic record in a single display
Principle 28	Create a zero-results display that can help a user reformulate a search if necessary
Principle 29	Use the International Standard Bibliographic Descriptions (ISBDs) as international display standards
Principle 30	Supply other punctuation or text when necessary
Principle 31	Preserve punctuation and case as set by cataloguers in all displays
Principle 32	Make the default single-record display the full display
Principle 33	Design the graphics, help icons, home pages or introductory screens of the OPAC for its primary audience
Principle 34	Do not duplicate records for display purposes
Principle 35	Display bibliographic data with maximum fidelity to conventions for the written forms of languages
Principle 36	Create displays in the language(s) of the catalogue
Principle 37	Bear in mind the needs of visually impaired users

International Standards Followed

Paris Principles[2]
ISBDs[3]
AACR2R [4]
RAK[5]
Functional Requirements for Bibliographic Records[6]
MARC 21[7]
UNIMARC[8]
Guidelines for Authority and Reference Entries[9]
Guidelines for Subject Authority and Reference Entries [10]
LCSH [11]
RSWK [12]

Standards Lacking

Display of 856 (universal resource locator information)

As yet, there are no display standards in place for the display of the fairly complex information to be found in MARC21 856 fields (universal resource locator information). MARC21 itself does not call for particular display constants in this field, and AACR2R does not address the need for adequate display of this information.

Display of LCSH subdivision authority records

The Library of Congress has only recently begun to distribute authority records for free-floating subdivisions (in February 1999; see: http://web.archive.org/web/20010503155251/http://lcweb.loc.gov/catdir/cpso/subdauth.html). As yet, standards for display of these records have not been developed.

Display of examples of and works about a particular form or genre (Principle 20)

Over time, a number of different LCSH practices have grown up for creating pairs of headings to represent examples of a particular form or genre as opposed to works about a particular form or genre.

Patterns in use:

- genre/form heading singular (about)/plural (examples of) (Example: **Opera/Operas**); headings linked by means of scope notes, as well as see reference from **Operas—History and criticism** to **Opera**.
- genre/form heading singular process term (about)/plural (examples of); headings not linked (Example: **Photography/Photographs**)
- genre/form heading (examples of) with subdivision (works about) (Example: **Gangster films—History and criticism**); no explicit link made; users expected to notice free-floating subdivision under the heading itself
- genre/form heading used for both examples of and works about (Example: **Computer war games**)

Without standardization in practice, it is difficult to recommend effective displays for these heading pairs.

Controversies

Should the default subarrangement under subject be by main entry or date? (Recommendation D.2)

Most users are likely to be interested in only the latest editions of works in science and technology libraries, so some may think that default subarrangement under date would be preferable. This subarrangement works against the objects of the catalog, however, and should not be followed in general or humanities libraries. We continue to recommend default subarrangement by main entry, but recognize that if designers are sure that

some other default subarrangement is better for the vast majority of collected works and the vast majority of users in a certain library, they may still decide to choose a different subarrangement. In any case, the subarrangement not chosen as the default should always be available as an option for users to apply to the results of their search.

Should the default single-record display be abbreviated to certain fields only? (Principle 32)

The guidelines recommend using the full single-record display as the default even for children's libraries (where it is common practice to let computers shorten displays arbitrarily). The problem is that MARC formats do not let the cataloguer label notes as either "IMPORTANT—always display, even to children," or "Need not display to children." Therefore, it is strongly recommended that children's libraries and other types of libraries that desire a record that is not as full as those used in large research libraries (from which most shared cataloguing is derived) utilize human catalogue editors to edit their records to meet their specifications, rather than relying on the arbitrary dumping of fields by a computer algorithm. We continue to recommend a default full single-record display, but recognize that if designers are sure that some other default single-record display is better for the vast majority of collected works and the vast majority of users in a certain library, they may still decide to choose a different default single-record display. Certainly, a short display should be an option in any such library (to be selected by the user for either individual record display, or for setting for the entire OPAC session), but it is dangerous to impose it on users as a default, as much important information (important even to children and their parents!) is found in fields often left out of short displays.

Should the principle of sorting elements be followed? (Principle 10)

We recommend that when headings are segmented into sorting elements, headings displays should be sorted first on the first element of the heading; the second element of the heading should be used only to subarrange headings that begin with the same first element. Examples of segmented headings include: a) a name or subject heading with subdivisions; b) a subordinate corporate body entered under a parent body; c) a uniform title for a serial with a qualifier; or d) a part of a work entered under the name of the work as a whole.

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Examples:

Below displays following the principle of sorting elements are contrasted with those that do not; note that in each of these examples, in any library catalog, there would be many more headings than depicted in the example separating headings that users need to view together.

Example 1, Display of serial titles.

1B: *Bad* (Display that does not follow the principle of sorting elements):

1. Health advocate.

2. Health alert.
3. Health (Canberra, Australia)
4. Health care costs.
5. Health care management review.
6. Health (Chicago, Ill.)
7. Health cost review.
8. Health (New York, N.Y. : 1981)
9. Health news.
10. Health reports.
11. Health (San Francisco, Calif.)

1B: *Better* (Display following the principle of sorting elements):

1. Health (Canberra, A.C.T.)
2. Health (Chicago, Ill.)
3. Health (New York, N.Y. : 1981)
4. Health (San Francisco, Calif.)
5. Health advocate.
6. Health alert.
7. Health care costs.
8. Health care management review.
9. Health cost review.
10. Health news.
11. Health reports.

Example 2, Display of subject headings

2B: *Bad* (Display not using sorting elements):

Line no. (available for searching)	Term:	No. of records
1.	Power lawn mowers	1
2.	Power (Mechanics)	102
3.	Power (Mechanics)—Congresses	108
4.	Power (Mechanies)—Dictionaries	8
5.	Power of attorney	15
6.	Power (Philosophy)	300
7.	Power presses	9
8.	Power (Social sciences)	226

2B: *Better* (Display using sorting elements):

Line no. (available for searching)	Term:	No. of records
1.	Power (Mechanics)	102
2.	--Congresses	108

3.	--Dictionaries	8
4.	Power (Philosophy)	300
5.	Power (Social sciences)	226
6.	Power lawn mowers	1
7.	Power of attorney	15
8.	Power presses	9

Should we try to provide catalog users with serendipity by displaying works about an author's works or about an author when their search is for a particular work or for works by a particular author? (Principles 19-20)

The guidelines do recommend this, on the assumption that it is better to show people as many pathways into the catalogue as possible. However, if this is done, it is imperative that the two categories be differentiated, so that users can easily choose between them, depending on their needs and interests at the time.

Should we try to provide location and format information on initial summary displays of bibliographic records in an environment in which more and more different locations and formats are being represented by one bibliographic record? (Recommendation A.12)

When it is possible to provide location and format information on summary displays, it can be helpful to do so for users who have a fairly good idea of what they want and just want to jot down some call numbers quickly. This approach saves them having to request quite so many different displays. However, the more complex the locations and formats that can be represented by one bibliographic record, the more difficult it becomes to summarize all of this information concisely and clearly in a summary display that may summarize thousands of retrieved records. If, for example, some of the holdings on a particular record are in the stacks, located using call numbers, some are in remote storage, located using barcodes, and some are electronic resources available over the Internet, located using URLs, how do you convey all of that in a line or two in a summary display that also must identify the particular manifestation of the particular expression of the particular work that the display line represents?

Large retrievals (Principle 3)

Another major issue concerned the degree to which systems should be designed to deal with large retrievals, as we recommend in the guidelines. Evidence indicates that some system designers assume that the ideal search is one that retrieves only one record. However, this assumption ignores the usefulness of a catalogue that leads users from a particular author, corporate body, work, or subject sought to other authors, corporate bodies, works, or subjects that might be of equal or even superior interest. In other words, the best catalogues help the user to survey what is available in order to make the best possible selection. The best catalogues also are designed not to assume that users can specify exactly what they are looking for; instead, those catalogues take whatever users can specify and allow users to explore all that is available in them.

Considerable research indicates users frequently have problems due to large

retrievals. Average retrievals of 91 to 247 bibliographic records and of 350 headings are reported in the published research.[13] Problems presented by poorly displayed large retrievals are likely to get worse, as software is designed to let users retrieve records from multiple OPACs over the Internet. Research also would seem to support our observation that popular authors publish many books and popular subjects have many works written about them.[14] When one heading can have over 5,000 bibliographic records posted to it, it is not very friendly of an OPAC to refuse to sort those 5,000 records, for example.

The value of work headings (Principle 1)

In countries and libraries that employ work headings (sometimes known as main entries), it is possible to carry out the second function of the catalog by means of OPAC displays that list in one group the manifestations of expressions of a particular work, that list in a second group the works related to that work, and that list in a third group the works about the work in question. It also enables elegant compressed displays of all of the records representing that work in various ways. Therefore, multiple-edition works can be quickly and concisely displayed to users interested in them. Moreover, users can navigate the display efficiently, quickly making their own decisions about which of the above categories of items interest them, and which do not. These kinds of displays of the work can be made available to users who have arrived at that work through any kind of search, whether it be an author search, a work search, a subject search, or a classification search.

Unfortunately, even in countries and libraries that employ work headings, many catalogues are in disarray because inadequate authority control has been applied to works. The option of employing uniform titles to create work headings has not been exercised on all kinds of works that exist in multiple manifestations of multiple expressions. For example, application may have been limited to music and law materials. It is highly possible that a chicken-and-egg situation exists here. System design heretofore has not supported the use of work headings to make searching easier for OPAC users, so cataloguing librarians and administrators have lost sight of the value of work headings, and do not devote resources to maintaining them. If systems were to support the superior work displays recommended in this document, flaws in existing catalogues would be easier to spot and fix over time.

How much can be generalized internationally?

Many countries and libraries do not formally designate work headings. Many countries and libraries do not use subject headings; among those that do, many do not use systems that employ subdivisions or that have a syndetic structure of see and see also references. Many countries and libraries do not assign uniform titles with qualifiers. The approach we have taken is to describe the ideal displays for countries and libraries that do designate work headings, etc., but to footnote with warnings in cases in which it is known that a practice is not universal.

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References and Notes

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