

# Better Living through Linking

Daniel Chudnov - 2009-05-27 - dchud at umich edu  
Texas Conference on Digital Libraries 2009

An extract of the full presentation  
which is available here:

<http://onebiglibrary.net/story/tcdl-2009-talk-better-living-through-linking>

“Linked Data”  
is  
worth a close look

so what is it?

a way to  
link  
better

a way to  
make  
concepts explicit

a way to  
connect  
our stuff


http://memory.loc.gov - got99000822

AMERICAN MEMORY PREVIOUS NEXT ITEM LIST NEW SEARCH

William P. Gottlieb - Photographs from the Golden Age of Jazz

Photograph 2 of 3

Click on picture for larger image, full item, or more versions. [Rights and Reproductions]



[Portrait of Billy Strayhorn, New York, N.Y.]

Gottlieb, William P. 1917- photographer.

**NOTES**  
Gottlieb Collection Assignment No. 477  
Original negative not served.  
Purchase William P. Gottlieb

**SUBJECTS**  
Strayhorn, Billy  
Rhea, Jerome  
Jazz musicians--1940-1950.  
Composers--1940-1950.  
Pianists--1940-1950.  
Portrait photographs--1940-1950.  
Group portraits--1940-1950.  
Film negatives--1940-1950.

Done Proxy: None zotero

item record

http://authorities.loc.gov - MARC Display (Library of Congress Authorities)

The Library of Congress >> Go to Library of Congress Online Catalog

LIBRARY OF CONGRESS AUTHORITIES

Help New Search Search History Headings List Start Over

Previous Next

MARC Display Labelled Display

transcriptions, c1944.  
ys the music of Billy Strayhorn [SR] p1987:  
Thomas Strayhorn; known as "Sweet Pea")  
, Billy (William; Swee' Pea); b. 11-19-15,  
oser, arranger, and pianist)  
ican and African musicians lb (Strayhorn,  
ayton, Ohio, d. 5-31-67, New York; jazz

arranger)  
952 \_\_ la RETRO  
953 \_\_ la xx00

Done Proxy: None zotero

authority record

a way to  
connect  
these together

draw our stuff  
deeper  
into the web



not just  
files to download  
but part of the web

how?

use URIs as names for things  
use HTTP URIs  
provide useful information  
include links to other URIs

<http://www.w3.org/DesignIssues/LinkedData.html>

break down concepts  
make them “pages”

http://catalog.loc.gov - Full Record (Library of Congress Online Catalog) - Session timeout in 4:39

The Library of Congress >> Go to Library of Congress Authorities

# LIBRARY OF CONGRESS ONLINE CATALOG

Help | New Search | Search History | Headings List | Titles List | Request an Item | Account Status | Start Over

DATABASE: Library of Congress Online Catalog  
 YOU SEARCHED: Keyword (match all words) = billy strayhorn  
 SEARCH RESULTS: Displaying 5 of 246.

◀ Previous Next ▶

Brief Record | Subjects/Content | **Full Record** | MARC

*Eximious the Joe Pass Trio.*

**Relevance:** ●●●●●

**LC Control No.:** 84759993  
**LCCN Permalink:** <http://lccn.loc.gov/84759993>  
**Type of Material:** Music Sound Recording  
**Corporate Name:** Joe Pass Trio. prf  
**Main Title:** Eximious [sound recording] / the Joe Pass Trio.  
**Published/Created:** Beverly Hills, CA : Pablo, p1982.  
**Description:** 1 sound disc : analog, 33 1/3 rpm ; 12 in.  
**Publisher No.:** 2310-877 Pablo  
**Contents:** A foxy chick and a cool cat / Joe Pass (5:29) -- Robbins nest / Illinois Charles Thompson / (3:55) -- Lush life / Billy Strayhorn (2:55) -- Serenata / Leroy Anderson, Mitchell Parish (3:53) -- Love for sale / Cole Porter (7:29) -- Night and day / Cole Porter (5:53) -- We'll be together again / Carl Fischer, Frankie Laine (5:44) -- You are to me everything / Cole Porter (4:54) -- Everything I've got belongs to you / Lorenz Hart, Richard Rodgers (2:56) -- Speak low / Kurt Weill, Ogden Nash (4:55).  
**Notes:** Jazz; guitar, double bass, and drums.  
 Recorded in Group IV Studios, Hollywood, Calif., May 25 and July 8, 1982.  
**Subjects:** Jazz --1981-1990.  
**LC Classification:** M1366

Done

the new

http://lccn.loc.gov - Library of Congress LCCN Permalink for 84759993

The Library of Congress > LCCN Permalink

# LIBRARY OF CONGRESS CATALOG RECORD

View LC holdings for this title in the: LC Online Catalog View this record in: MARCXML | MODS | Dublin Core

*Eximious*

**LC Control No.:** 84759993  
**Type of Material:** Music Sound Recording  
**Corporate Name:** Joe Pass Trio. prf » More like this  
**Main Title:** Eximious [sound recording] / the Joe Pass Trio.  
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**Subjects:** Jazz--1981-1990. » More like this  
**LC Classification:** M1366  
 Pablo 2310-877

Done Proxy: None zotero

the old

http://catalog.loc.gov - Full Record (Library of Congress Online Catalog) - Session timeout in 4:39

The Library of Congress >> Go to Library of Congress Authorities

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YOU SEARCHED: Keyword (match all words) = billy strayhom  
SEARCH RESULTS: Displaying 5 of 246.

◀ Previous Next ▶

Brief Record | Subjects/Content | **Full Record** | MARC Tags

*Eximious the Joe Pass Trio.*

Relevance: ●●●●●

LC Control No.: 84759993  
LCCN Permalink: <http://lccn.loc.gov/84759993>  
Type of Material: Music Sound Recording  
Corporate Name: [Joe Pass Trio. prf](#)  
Main Title: *Eximious* [sound recording] / the Joe Pass Trio.  
Published/Created: Beverly Hills, CA : Pablo, p1982.  
Description: 1 sound disc : analog, 33 1/3 rpm ; 12 in.  
Publisher No.: 2310-877 Pablo

Contents: A foxy chick and a cool cat / Joe Pass (5:29) -- Robbins nest / Illinois Jacquet, Charles Thompson / (3:55) -- Lush life / Billy Strayhorn (2:55) -- Serenata / Leroy Anderson, Mitchell Parish (3:53) -- Love for sale / Cole Porter (7:29) -- Night and day / Cole Porter (5:53) -- We'll be together again / Carl Fischer, Frankie Laine (5:44) -- You are to me everything / Cole Porter (4:54) -- Everything I've got belongs to you / Lorenz Hart, Richard Rodgers (2:56) -- Speak low / Kurt Weill, Ogden Nash (4:55).

Notes: Jazz; guitar, double bass, and drums.  
Recorded in Group IV Studios, Hollywood, Calif., May 25 and July 8, 1982.

Subjects: [Jazz --1981-1990.](#)

LC Classification: M1366

Done Proxy: None zotero

bad URL

screenscraping  
required

few links out

no links in

the old



the new

good URL

alternate  
formats

some links out

more links in

The screenshot shows a web browser window with the address bar displaying "http://lccn.loc.gov - Library of Congress LCCN Permalink for 84759993". The page title is "The Library of Congress > LCCN Permalink". The main heading is "LIBRARY OF CONGRESS CATALOG RECORD" with a decorative border. Below the heading, there are links: "View LC holdings for this title in the: LC Online Catalog View this record in: MARCXML | MODS | Dublin Core". The title "Eximious" is centered. The main content area contains the following information:

- LC Control No.:** 84759993
- Type of Material:** Music Sound Recording
- Corporate Name:** Joe Pass Trio. prf » More like this
- Main Title:** Eximious [sound recording] / the Joe Pass Trio.
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- Notes:** Jazz; guitar, double bass, and drums.  
Recorded in Group IV Studios, Hollywood, Calif., May 25 and July 8, 1982.
- Subjects:** Jazz--1981-1990. » More like this
- LC Classification:** M1366  
Pablo 2310-877

The browser status bar at the bottom shows "Done" and "Proxy: None zotero".

# LCCN Permalink

http://lccn.loc.gov - Library of Congress LCCN Permalink for 84759993

The Library of Congress > LCCN Permalink

**LIBRARY OF CONGRESS CATALOG RECORD**

View LC holdings for this title in the: LC Online Catalog View this record in: MARCXML | MODS | Dublin Core

*Eximious*

**LC Control No.:** 84759993

**Type of Material:** Music Sound Recording

**Corporate Name:** Joe Pass Trio. prf » More like this

**Main Title:** Eximious [sound recording] / the Joe Pass Trio.

**Published/Created:** Beverly Hills, CA : Pablo, p1982.

**Description:** 1 sound disc : analog, 33 1/3 rpm ; 12 in.

**Publisher No.:** 2310-877 Pablo

**Contents:** A foxy chick and a cool cat / Joe Pass (5:29) -- Robb  
Charles Thompson / (3:55) -- Lush life / Billy Strayhorn  
Leroy Anderson, Mitchell Parish (3:53) -- Love for sale  
Night and day / Cole Porter (5:53) -- We'll be together again / Carl Fischer,  
Frankie Laine (5:44) -- You are to me everything / Cole Porter (4:54) --  
Everything I've got belongs to you / Lorenz Hart and Rodgers (2:56) --  
Speak low / Kurt Weill, Ogden Nash (4:55)

**Notes:** Jazz; guitar, double bass, and drums  
Recorded in Group IV Studios, Hollywood, Calif., May 25 and July 8, 1982.

**Subjects:** Jazz--1981-1990. » More like this

**LC Classification:** M1366  
Pablo 2310-877

Done Proxy: None zotero

clean URI



<http://lccn.loc.gov/84759993>

alternate  
formats

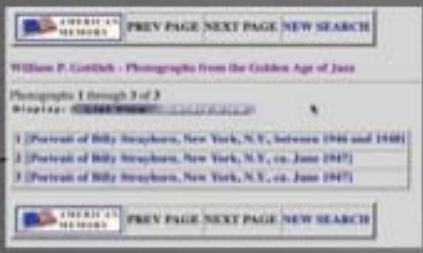
more links out

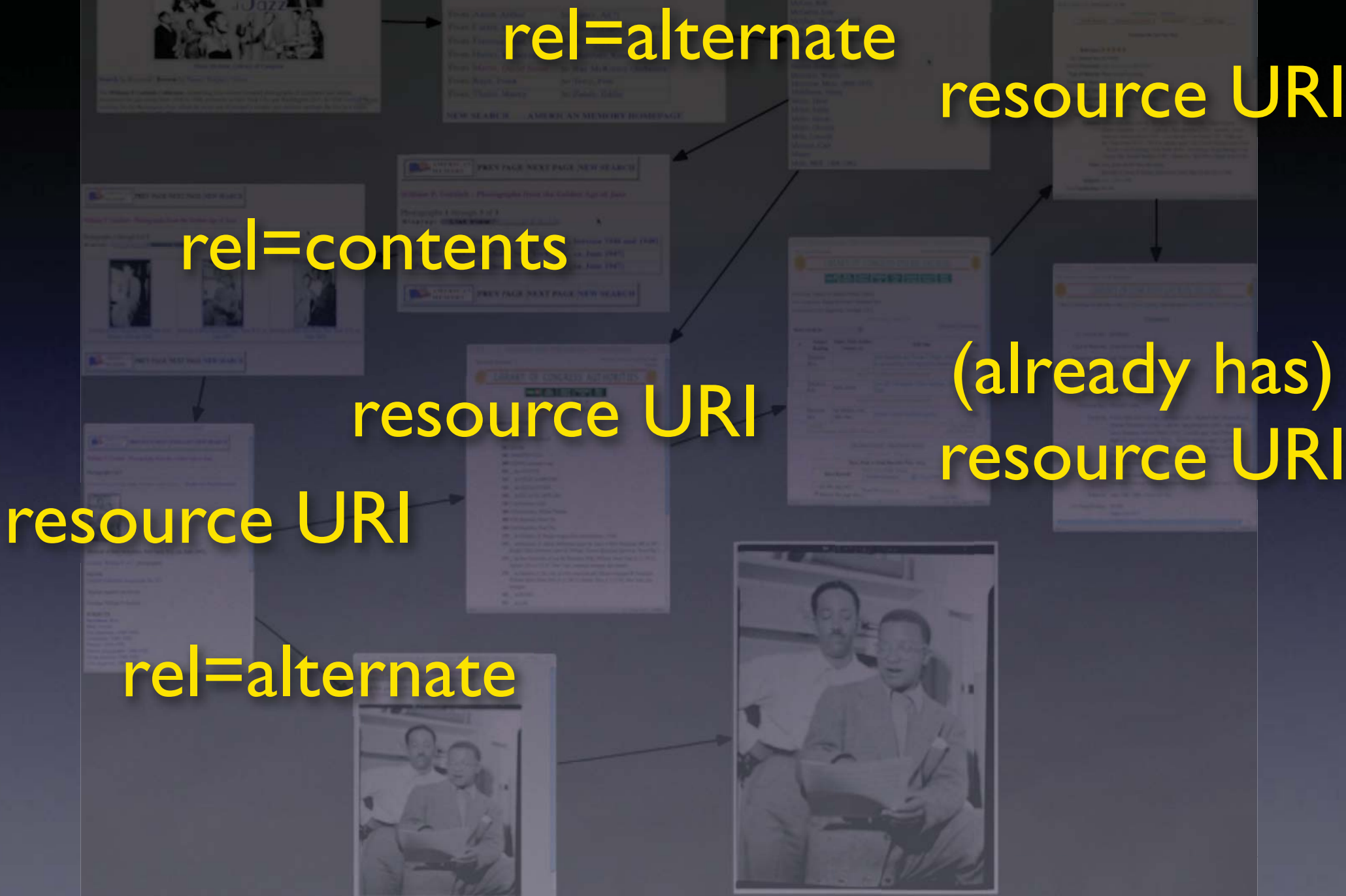


```
<link rel="alternate" type="application/mods+xml" href="http://lcn.loc.gov/84759993/mods">  
<link rel="alternate" type="application/marc+xml" href="http://lcn.loc.gov/84759993/marcxml">  
<link rel="alternate" type="application/dc+xml" href="http://lcn.loc.gov/84759993/dc">  
<link rel="alternate" type="application/oai_dc+xml" href="http://lcn.loc.gov/84759993/oai_dc">
```

discoverable, parseable  
alternate formats

apply these rules  
everywhere





arrows  
become  
cross-references

why?

it becomes  
crawl-able  
mine-able

integrated access  
through  
smart crawl / index



precision improves  
with  
rich metadata  
explicitly linked

recall improves  
with  
explicit links  
through authority recs

bring  
precision / recall  
of clunky OPACs  
to open web

this is  
doing web stuff  
better

just by doing  
HTML / HTTP

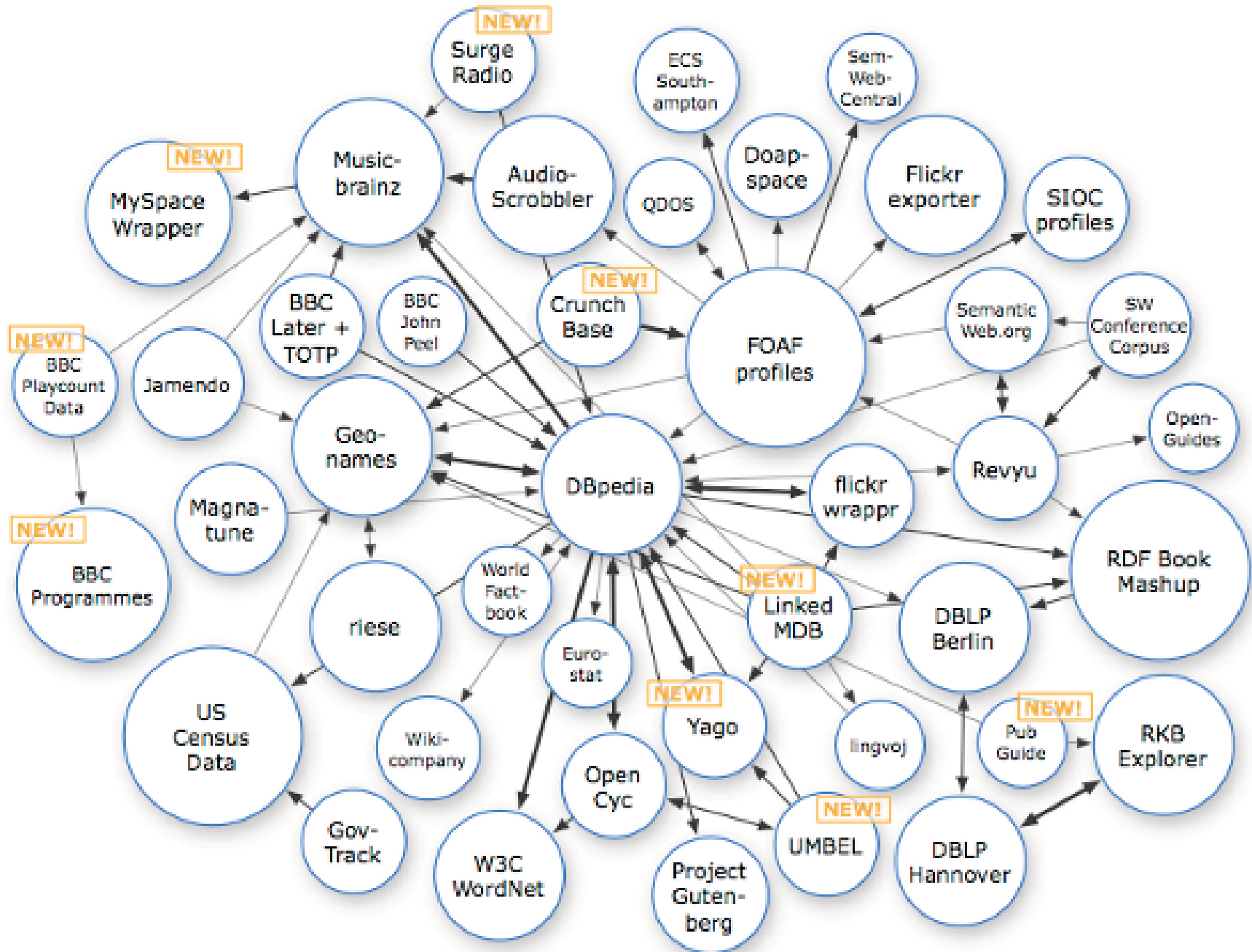
use URIs as names for things  
use HTTP URIs  
provide useful information  
include links to other URIs

<http://www.w3.org/DesignIssues/LinkedData.html>

doesn't *fit* the web,  
it *is* the web

many examples already





As of September 2008

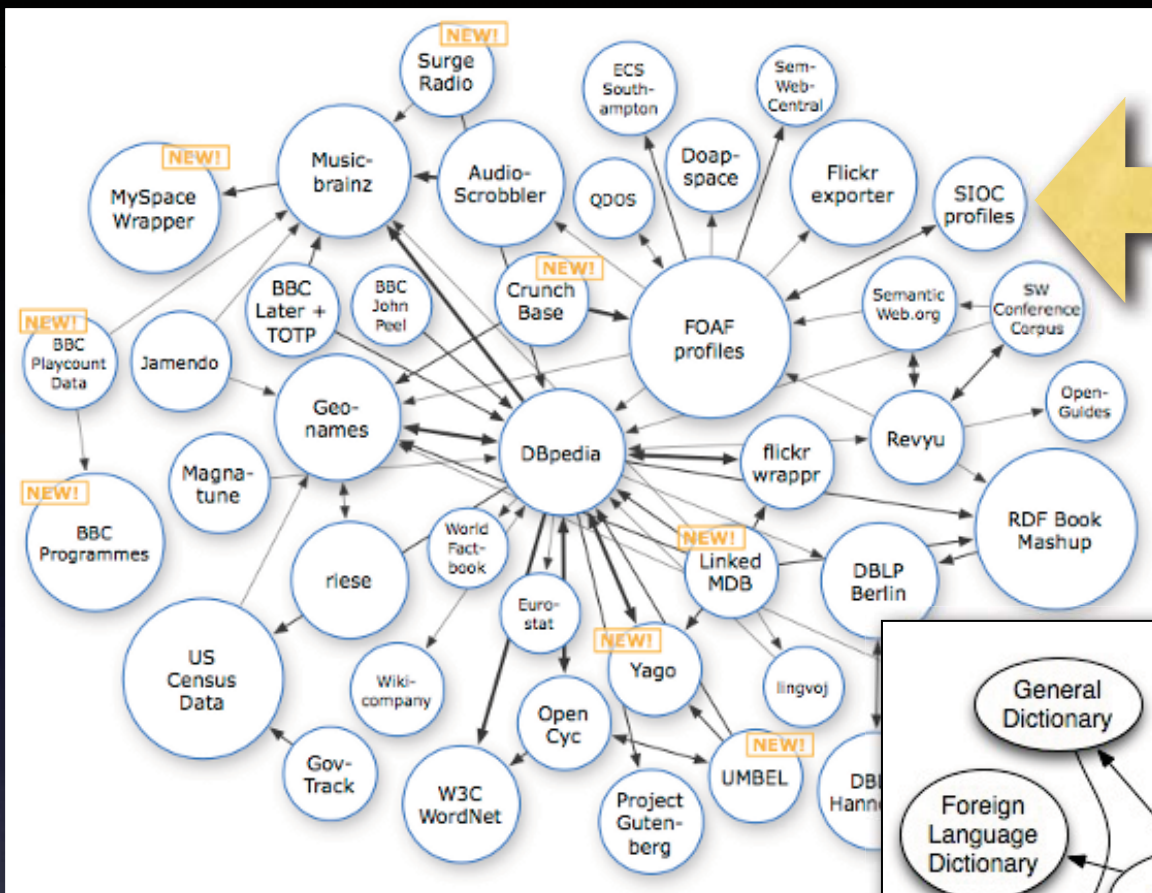
As of September 2008



**LIBRIS**  
**id.loc.gov**  
**chronicling america**

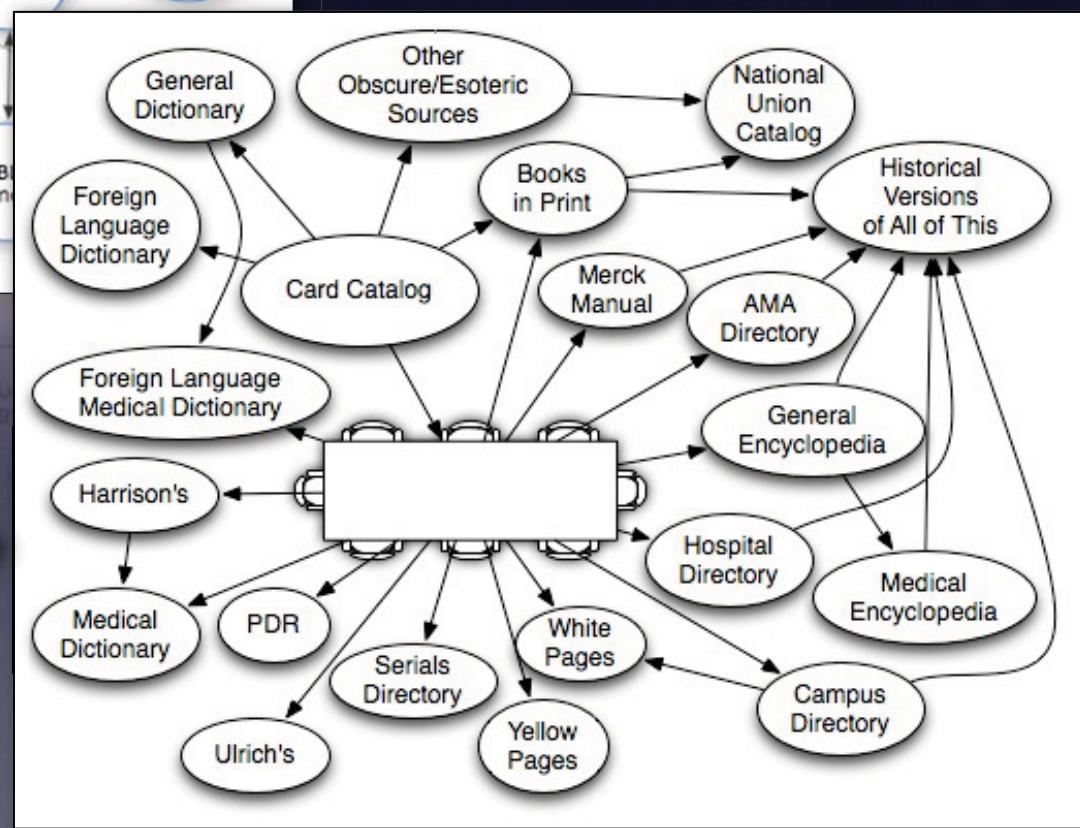
if i squint just right...

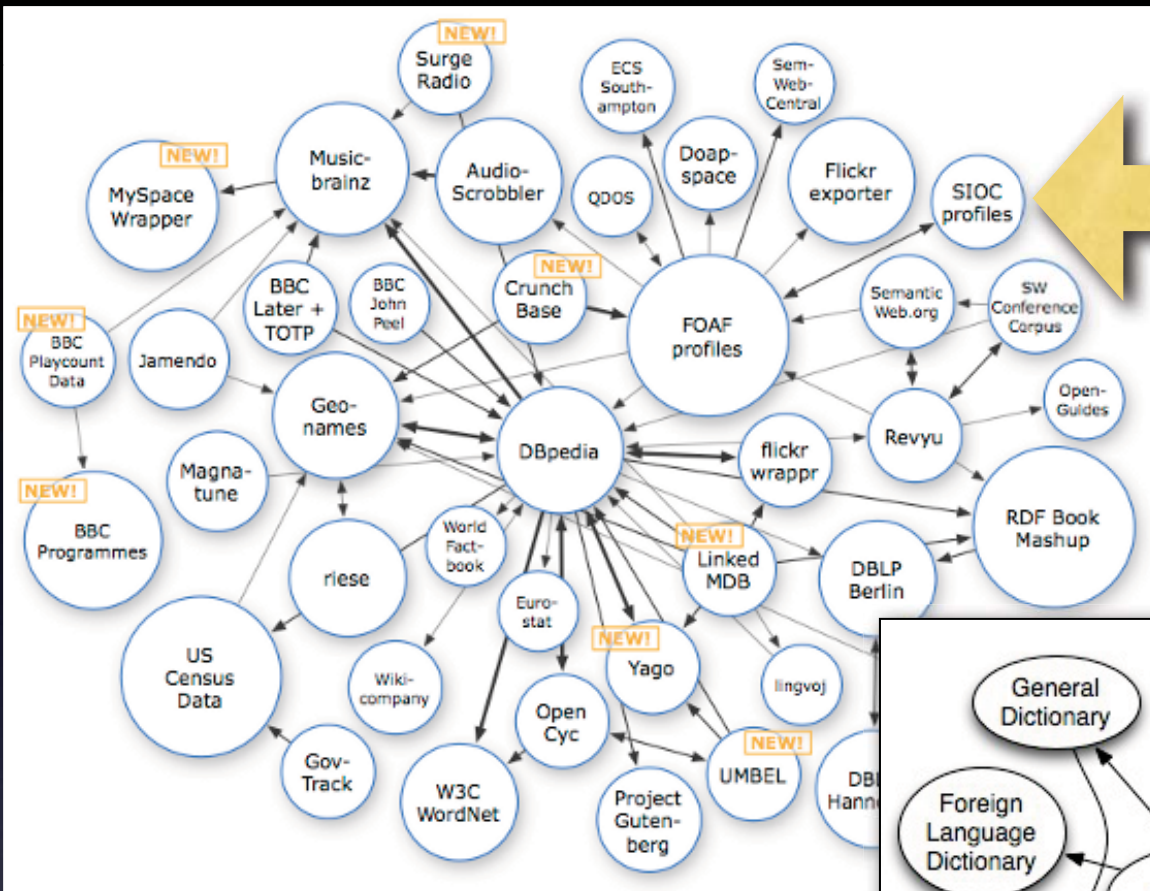




the "LOD cloud"

a  
"ready reference"  
collection

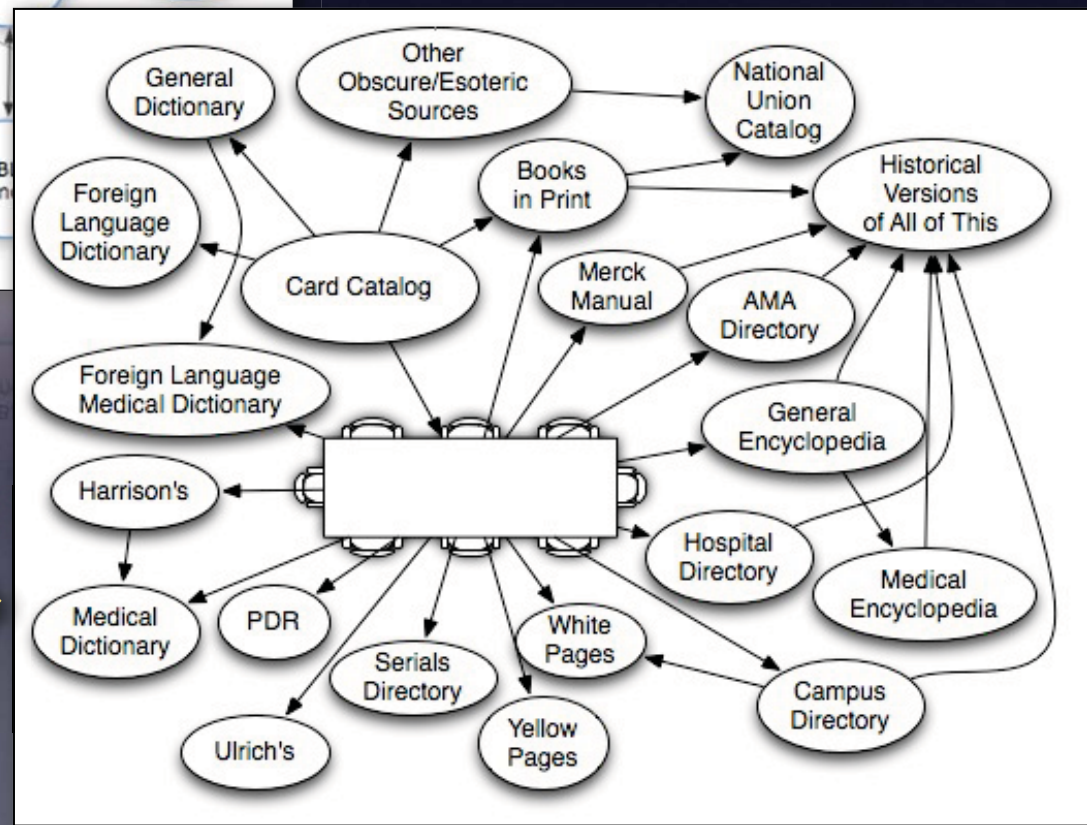




make  
this  
useful



turn this  
into  
linked data



seems obvious,  
right?

3.

steps you can take today



how to  
link your data

(or, About All That  
Other Stuff You Have)

use URIs as names for things  
use HTTP URIs  
provide useful information  
include links to other URIs

<http://www.w3.org/DesignIssues/LinkedData.html>

first:  
clean, cool URIs  
for data concepts

instead of this:

`/search?subject=Strayhorn,+Billy`

do this:

[/subject/lccn/n81072976](#)

easy to implement  
today

easy to redirect  
tomorrow



next:  
offer data views

use

<a rel=\_\_\_\_\_ href=\_\_\_\_\_>

<link rel=\_\_\_\_\_>

offer up  
MARC,  
or JSON,  
or RDF,  
or ...

next:  
relate your data  
to established  
authorities

your search results  
backed by shared  
authority records

put it all together

# visit

## /subject/lccn/n81072976

- get your content results
- get alternate data views  
(concept record)
- get links to other useful data
- get links to authorized form

all that's easy



i promise

the next part's  
hard

how to make it  
last

if your site breaks  
when links break  
cache and link yourself

# instead of just this

http://ead.lib.uchicago.edu - Guide to the Billy Strayhorn Master Editions Collection 1933-1966

The University of Chicago Library ARCHIVES AND MANUSCRIPTS finding aids

Search Browse All Finding Aids • Subject Browse

Search This Finding Aid

Go

Table of Contents

- Descriptive Summary
- Access
- Citation
- Biographical Note
- Scope Note
- Acknowledgments
- Related Resources
- Subject Headings
- INVENTORY

**University of Chicago Library**  
**Guide to the Billy Strayhorn Master Editions Collection 1933-1966**  
© 2008 University of Chicago Library

**Descriptive Summary**

**Title:** Strayhorn, Billy, Master Editions. Collection  
**Dates:** 1933-1966  
**Size:** 14 linear feet (7 boxes)  
**Repository:** Special Collections Research Center  
University of Chicago Library  
1100 East 57th Street  
Chicago, Illinois 60637 U.S.A.

**Abstract**  
The Billy Strayhorn Master Editions Collection contains finale scores and parts generated by music editing software, derived directly from his handwritten manuscripts. There are also reprints of a signed photograph of Strayhorn.

**Information on Use**

**Access**

http://authorities.loc.gov - MARC Display (Library of Congress Authorities)

The Library of Congress >> Go to Library of Congress Online Catalog

**LIBRARY OF CONGRESS AUTHORITIES**

Help New Search Search History Headings List Start Over

Previous Next

MARC Display Labelled Display

LC Control Number: n 81072976

**HEADING:** Strayhorn, Billy

000 01048cz a2200229n 450  
001 2852966  
005 19960307074738.8  
008 810925nl acannaab la aaa  
010 \_\_ la n 81072976  
035 \_\_ la (OCoLC)oca00618281  
035 \_\_ la (DLC)n 81072976  
040 \_\_ la DLC lc DLC ld PPI-MA  
100 10 la Strayhorn, Billy  
400 10 la Strayhorn, William Thomas  
400 10 la Strayhorn, Sweet Pea  
400 10 la Strayhorn, Sweet Pea  
670 \_\_ la Ellington, D. Boogie woogie piano transcriptions, c1944.  
670 \_\_ la Strayhorn, B. Marian McPartland plays the music of Billy Strayhorn [SR] p1987:  
lb label (Billy Strayhorn) insert (b. William Thomas Strayhorn; known as "Sweet Pea")  
670 \_\_ la New Grove dict. of jazz lb (Strayhorn, Billy (William; Sweet Pea); b. 11-19-15,  
Dayton, OH, d. 5-31-67, New York; composer, arranger, and pianist)  
670 \_\_ la Southern, E. Bio. dict. of Afro-American and African musicians lb (Strayhorn,  
William (Billy; Sweet-Pea); b. 11-29-15, Dayton, Ohio, d. 5-31-67, New York; jazz  
arranger)  
952 \_\_ la RETRO  
953 \_\_ la xx00

# do this

http://ead.lib.uchicago.edu - Guide to the Billy Strayhorn Master Editions Collection 1933-1966

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Go

Table of Contents

- Descriptive Summary
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- 952 \_\_ la RETRO
- 953 \_\_ la xx00

UChicago  
cache

same as

just like  
we do  
in ILS/OPACs

but, yknow,  
the web way



so if a remote  
link breaks

your local links  
still work

also,  
proxy concepts

your

/subject/lccn/n81072976

==

my

/subject/lccn/n81072976

but in *your* app

make every cache  
its own  
linked data source

# instead of just this

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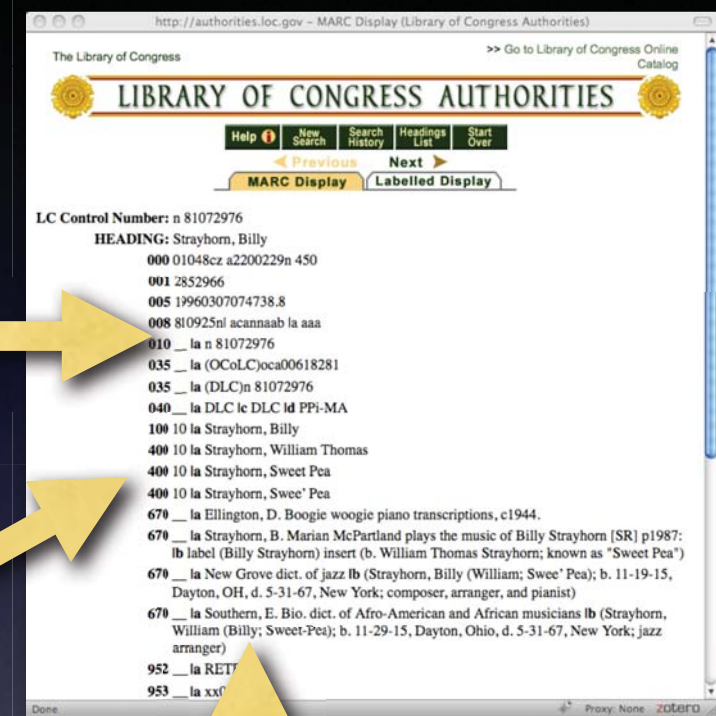
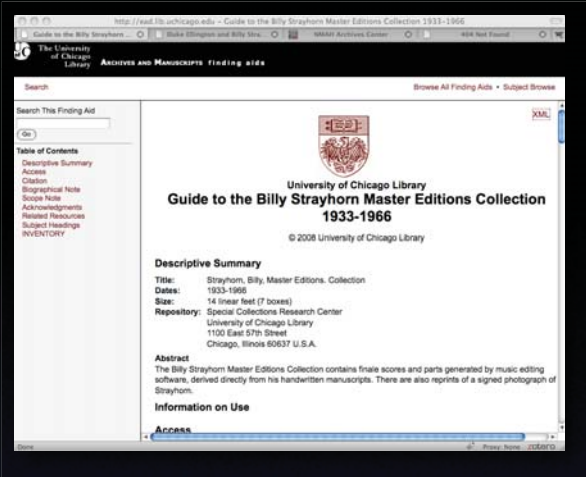
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arranger)  
952 \_\_ la RETRO  
953 \_\_ la xx00

UChicago  
cache

same as

# enable this



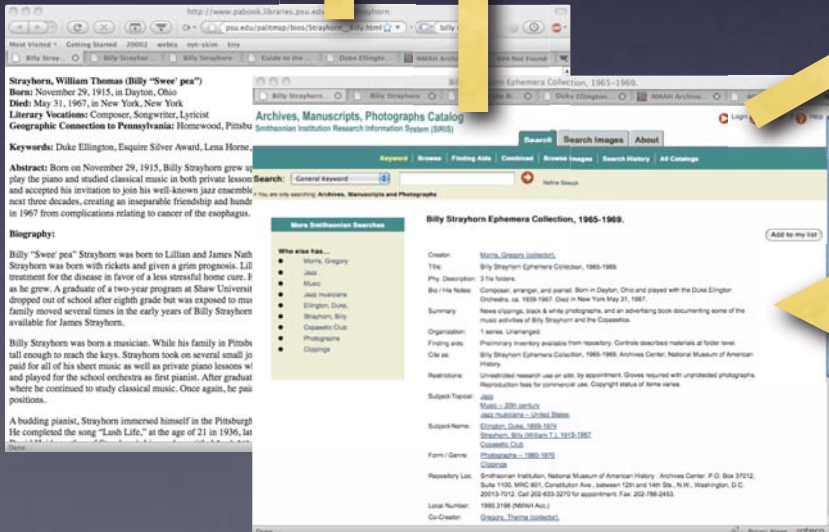
UChicago  
cache

same as

same as

same as

same as



same as



if one goes down  
the others live on



if others live on  
it's all still linked

if it's all still linked  
we can keep adding

linked data  
that lasts

i think

thanks!

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twitter.com/dchud