

CHARM

# Descriptive Metadata for Audio-Oriented Digital Collections

John S. Huck

MLIS Candidate,
University of Alberta

# Introduction

- Personal interest in collections of unpublished or rare recordings.
- Sound archives: a grey area between archives and libraries.
- Digital libraries and repositories mean new channels for distribution.

# Examples

- Archival Sound Recordings (British Library)
  - http://sounds.bl.uk/View.aspx?item=021M-C0908X0011XX-0200V0.xml




- Xeno-Canto America: Bird sounds from the Americas
  - http://www.xeno-canto.org/america/random.php



# Research Questions

- Does the nature of audio-oriented collections lead to specific metadata requirements?
- If so, what are they?

- What can we learn from the content and current practices of existing collections?




Dismarc.org

# Sound Archives: Roots

- Musicologists: field recordings
  - Phonogramm-Archiv, Vienna (1899)
  - Indiana Archives of Traditional Music (1948)
- Folklorists: music but also stories, dances and artifacts (Bartis, 1979)
- Archives: oral histories (Public Archives Canada, 1979)
- Libraries: "archives" of commercial 78s and cylinders (ARSC, 1995)

# Digital Sound Archives

- Survey of the state of audio collections in academic libraries (CLIR, 2004)
  - unique collections are at risk
  - need preservation and cataloguing

- Guidelines on the production and preservation of digital audio objects (IASA/Bradley, 2004, 2009)
  - "there is little choice for sound preservation except digital storage approaches"

# Metadata Basics

- "Data associated with either an information system or an information object for purposes of description, administration, legal requirements, technical functionality, use and usage, and preservation" (Baca, 1998)
- Metadata schemas specify a set of elements and a structure
- Variety of schemas for different purposes (DC, MODS, EAD, ID3)

# Choosing a Metadata Schema

- "The multimedia domain is far too wide for any single standard" (Smith & Schirling, 2006)
- Choice of elements based on "nature of collection objects [and] anticipated user needs" (Zeng & Qin, 2008)
- Even among music schemas (ID3, MPEG-7, etc.) optimal choice depends on intended function (Corthaut, et al, 2008)
- Ironically, interoperability is a much coveted function (Bradley, 2009)

# Method & Scope

- Exploratory
- Evidence-based
- Focus on descriptive metadata only
  - Information about schemas not always available
  - This allowed comparisons between collections




Virtual Gramophone

# Selection Criteria

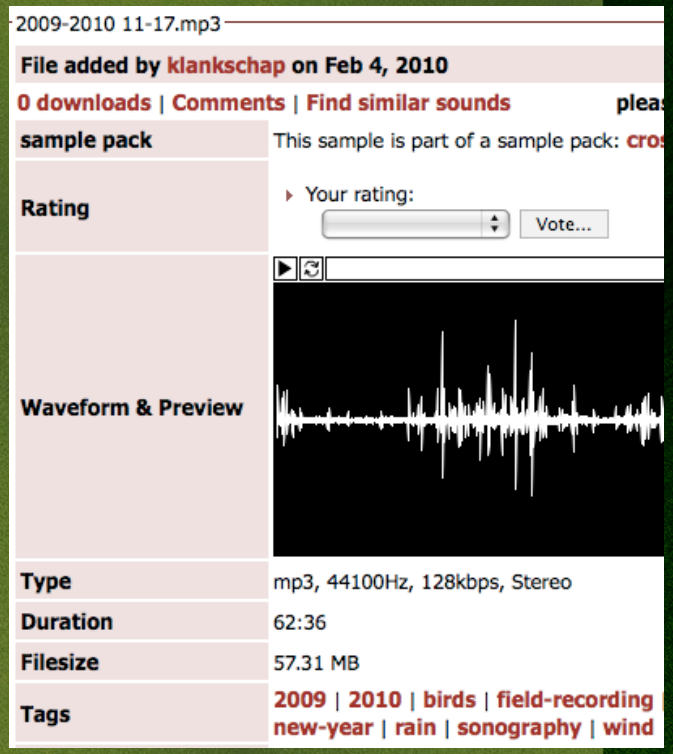
- A collection focus on recorded sound
- Search interface
- Playback of recordings (whole or excerpts)
- Publicly accessible and free
- Relatively stable and permanent content
- Operating within the law

# Collection of Data I

- 18 online collections identified
  - from membership lists: IASA, ARSC, SEM, etc.
- Basic collection information recorded
  - host institution (type and location)
  - content types (e.g. music, spoken word, scientific)
  - recording sources (e.g. 78s, field recordings)
  - interface features
  - metadata schemas, controlled vocabularies

# Collection of Data II

- Five sample records taken from each collection
  - Multiple search methods used
  - Screenshots and text files collected
- Metadata elements compiled in spreadsheets




Freesound.org

# Data Analysis

- Analysis of metadata elements on two levels:
- Collection level
  - sample records compared from one collection
  - number of elements per record
  - number of elements shared by all samples
- Aggregate level
  - 223 elements (of 343) compiled from all collections
  - elements grouped into 17 clusters
  - clusters organized under 7 categories (Lagoze, 1996)

# Collection Profiles

## Types of host institution

| University Library | University Department or Institute | National Library or Archive | Museum or Archive | Consortium | Multiple Categories |
|---|---|---|---|---|---|
| 7 | 5 | 3 | 4 | 3 | 4 |

## Locations of host institution

| Canada | United States | United Kingdom | Europe | South Africa | Australia |
|---|---|---|---|---|---|
| 1 | 7 | 3 | 5 | 1 | 1 |

# Content of Collections I

**Geographic focus of content**

| Global* | Americas | Canada* | US | UK | Europe | Middle East | Africa | Australia |
|---|---|---|---|---|---|---|---|---|
| 6 | 1 | 1 | 2 | 1 | 1 | 1 | 3 | 1 |

***three collections were considered to be "format focused"**




DEKKMMA

# Content of Collections II

**Types of content**

| Music | Spoken Word & Oral History | Scientific & Environmental |
|---|---|---|
| 13 | 11 | 4 |

**8 had more than one type**

**Medium of content**

| Sound Only | Sound and Other Media |
|---|---|
| 9 | 9 |

**Recording sources**

| 78s & Cylinders | Field Recordings | Broadcast | User Submitted |
|---|---|---|---|
| 7 | 15 | 7 | 3 |

**7 fell into more than one category**

# System Features

| Maps | Tagging & User Feedback | Metadata Schema | Controlled Vocabulary |
|---|---|---|---|
| 5 | 9 | 11 | 5 |




Xeno-Canto America

# Metadata Analysis I: Collection Level

| | A. Average Number of Elements per Record | B. Number of Elements Common to All Samples | C. Total Unique Elements in Samples | A. Minus B. | C. Minus A. |
|---|---|---|---|---|---|
| Average Values | 14.77 | 11 | 19.06 | 3.77 | 4.29 |
| ***Examples*** | | | | | |
| James Koetting Collection [JKC] | 12 | 12 | 12 | 0 | 0 |
| BL Archival Sound Recs. [ASR] | 10.75 | 5 | 25 | 5.75 | 14.25 |
| Spoken Word Services [SWS] | 10.2 | 7 | 14 | 3.2 | 3.8 |

# Metadata Analysis II: Aggregate Level

| Metadata Categories (Lagoze, et al., 1996) | Clusters | Number of metadata elements | % of total metadata elements |
|---|---|---|---|
| Descriptive | 8 | 149 | 66.8% |
| Administrative | 1 | 23 | 10.3% |
| Terms & Conditions | 1 | 4 | 1.8% |
| Content Ratings | 1 | 2 | 0.9% |
| Provenence | 2 | 15 | 6.7% |
| Linkage | 1 | 5 | 2.2% |
| Structural | 3 | 26 | 11.7% |

# Metadata Analysis II: Aggregate Level

| Descriptive Metadata Clusters | Number of collections | Number of elements | % of total descriptive elements |
|---|---|---|---|
| Title | 17 | 22 | 14.8% |
| Contributor | **16** | **29** | 19.5% |
| Description/Notes | 16 | 18 | 12.1% |
| Keywords | 13 | 16 | 10.7% |
| Date | **13** | **16** | 10.7% |
| Place | **12** | **21** | 14.1% |
| Language | 5 | 6 | 4.0% |
| Music Specific | 4 | 21 | 14.1% |

# Observations: Collection Level

- Diversity of content
  - Medium  (audio, text, images)
  - Audio Content  (music, speech, ...)
  - Recording Source  (archival, commercial, broadcast)
- The number and consistency of metadata elements was related to the scope and consistency of content



James Koetting Coll.

# Observations: Aggregate Level

- Significant clusters:
  - Contributor (multiple roles)
  - Description (more common than keywords)
  - Date/place (relation to maps)
- Metadata for specialized characterstics of music seen in a small number of focused collections




Semitisches Tonarchiv

# Recommendations

- Assess the characteristics and consistency of content
- Accomodate
  - Non-audio content
  - Multiple contributor roles
  - Data about "time and place"
  - Descriptions and summaries
  - Identification numbers, matrix numbers
- Address issues of semantic interoperability

# Further Research

- Exploratory nature of study limits validity
  - Need to compare results with similar data from non-audio collections
- Dismarc
  - 26 archives & research institutions
  - "a gateway to freely available (rare) audio-content and discographic information located in music archives and collections."
  - How has it achieved interoperability?
  - Is it effective?



# Thank You

- Questions?




Vincent Voice Library

# Final Example

- Cylinder Preservation and Digitization Project University of California, Santa Barbara
- http://cylinders.library.ucsb.edu/search.php?queryType=@attr 1=1016 &query=o+canada&num=1&start=2&sortBy=&sortOrder=ia

# References


- Archives of Traditional Music, Indiana University. (1975). *A catalog of phonorecordings of music and oral data held by the Archives of Traditional Music*. Boston: G. K. Hall & Co.
- Association for Recorded Sound Collections, Associated Audio Archives. (1995). *Rules for archival cataloging of sound recordings* (Rev. ed.). Association for Recorded Sound Collections.
- Baca, M. (Ed.). (1998). *Introduction to metadata: Pathways to digital information*. Los Angeles: Getty Information Institute.
- Bartis, P. (1979). *Folklife & Fieldwork: A layman's introduction to field techniques.* Washington, D.C.: American Folklife Center.
- Borgman, C. L. (2001). *From Gutenberg to the global information infrastructure: Access to the information in the networked world.* Cambridge, MA: MIT Press.
- Bradley, K. (Ed.). (2009). *Guidelines on the production and preservation of digital audio objects: IASA-TC04* (2nd ed.). Auckland Park, South Africa: International Association of Sound and Audiovisual Achives.
- Cole, T. W., & Shreeves, S. L. (2004). Lessons learned from the Illinois OAI metadata harvesting project. In D. I. Hillmann & E. L. Westbrooks (Eds.), *Metadata in practice* (pp. 174-190). Chicago: American Library Association.
- Corthaut, N., Govaerts, S., Verbert, K., & Duval, E. (2008). Connecting the dots: Music metadata generation, schemas and applications. *ISMIR 2008*, 249-254.
- Freesound Project. (2005). *How to describe samples* [online discussion thread]. Accessed August 23, 2009 at http://www.freesound.org/forum/viewtopic.php?t=36

# References


- Greenberg, J. (2005). Understanding metadata and metadata schemes. *Cataloging & Classification Quarterly, 40*(3/4), 17-36.
- Lagoze, C., Lynch, C. A., & Daniel, R. (1996). The Warwick Framework: A container architecture for aggregating sets of metadata. Available at http://hdl.handle.net/1813/7248
- Lai, C., Fujinaga, I., Descheneau, D., Frishkopf, M., Riley, J., Hafner, J., et al. (2007). Metadata infrastructure for sound recordings. ISMIR Proceedings.
- Lesk, M. (2005). *Understanding digital libraries* (2nd ed.). San Francisco: Morgan Kaufmann.
- Public Archives Canada, National Film Archives, Sound Archives Section. (1979). *Sound archives: Guide to procedures*. Ottawa: Public Archives Canada.
- Smith, A., Allen, D. R., & Allen, K. (2004). *Survey of the state of audio collections in academic libraries.* Washington, D.C.: Council on Library and Information Resources.
- Smith, J.R., & Schirling, P. (2006). Metadata standards roundup. *IEEE MultiMedia*, *13*(2), 84-88. doi:10.1109/MMUL.2006.34
- Zeng, M. L., & Qin, J. (2008). *Metadata.* New York: Neal-Schuman Publishers, Inc.

# Online collections

**Archival Sound Recordings [ASR]**
British Library
http://sounds.bl.uk

**Spoken Word Services [SWS]**
Glasgow Caledonian University
http://www.spokenword.ac.uk

**CHARM (AHRC Research Centre for the History and Analysis of Recorded Music) [CHARM]**
Arts and Humanities Research Council
Royal Holloway University of London
King's College London
University of Sheffield
http://www.charm.rhul.ac.uk/

**The Virtual Gramophone: Canadian Historical Sound Recordings [VG]**
Library and Archives Canada
http://collectionscanada.ca/gramophone/index-e.html

**National Film & Sound Archive, Australia [NFSA]**
http://www.screensound.gov.au

**Dismarc (Discovering Music Archives) [Dismarc]**
Europeana Digital Library (music component)
http://www.dismarc.org

# Online collections

**DEKKMMA - Belgian acronum for Digitization of the Ethnomusicological Sound Archive of the Royal Museum for Central Africa [DEKKMMA]**
Université Libre de Bruxelles
Ghent University
http://music.africamuseum.be/

**Milman Parry Collection [MPC]**
Harvard University
http://chs119.harvard.edu/mpc/

**Digital Library of Appalachia [DLA]**
Appalachian College Association Central Library
http://www.aca-dla.org/dlamusic/dlamusic.html

**The James Koetting Ghana Field Recording Collection [JKC]**
Brown University
http://dl.lib.brown.edu/koetting/

**Cylinder Preservation and Digitization Project [CPDP]**
University of California, Santa Barbara
http://cylinders.library.ucsb.edu/overview.php

**Traditional Music and Spoken Word Catalog [TMSWC]**
American Folklife Centre
http://memory.loc.gov/diglib/ihas/html/afccards/afccards-home.html

# Online collections

**Fiddle Tunes of the Old Frontier: The Henry Reed Collection [HRC]**
Library of Congress, American Memory
http://memory.loc.gov/ammem/collections/reed/

**Xeno-Canto America: Bird sounds from the Americas [XCA]**
Xeno-Canto Foundation
Naturalis: National Museum of Natural History (Holland)
http://www.xeno-canto.org/america

**The Freesound Project [FSP]**
Music Technology Group (MTG) of the Universitat Pompeu Fabra in Barcelona)
http://www.freesound.org

**ILAM (International Library of African Music) Digital Sound Archive [ILAM]**
International Library of African Music
Rhodes University, Grahamstown, South Africa
http://ilam.ru.ac.za/
http://greenstone.ilam.ru.ac.za

**G. Robert Vincent Voice Library (Vincent Voice Library) [VVL]**
Michigan State University Libraries
http://vvl.lib.msu.edu/index.cfm

**SemArch - Semitisches Tonarchiv [SemArch]**
Ruprecht-Karls-Universität Heidelberg,Seminar für Sprachen und Kulturen des Vorderen Orients Semitistik
http://www.semarch.uni-hd.de/index.php4?&lang=en