

Digital Archiving for Documentation of Endangered Languages

David Nathan
Endangered Languages Archive
SOAS University of London

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- Archiving principles and concepts
- Data management
 - strategies
 - organising files
 - file naming
 - formats and encoding
 - metadata
- Archiving with ELAR
- Mobilisation of digital resources for language support



Archiving principles

- general archiving functions
 - acquire and preserve
 - add value
 - provide access
 - develop trust

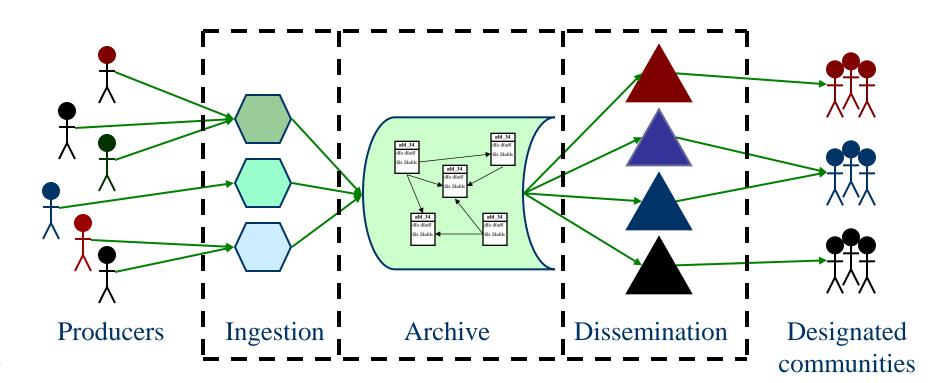


EL digital documentation archiving principles

- acquire and preserve
- support and curate
- develop trust
 - with depositors and users; via bodies and standards eg Data Seal of Approval, Ninch
- publish

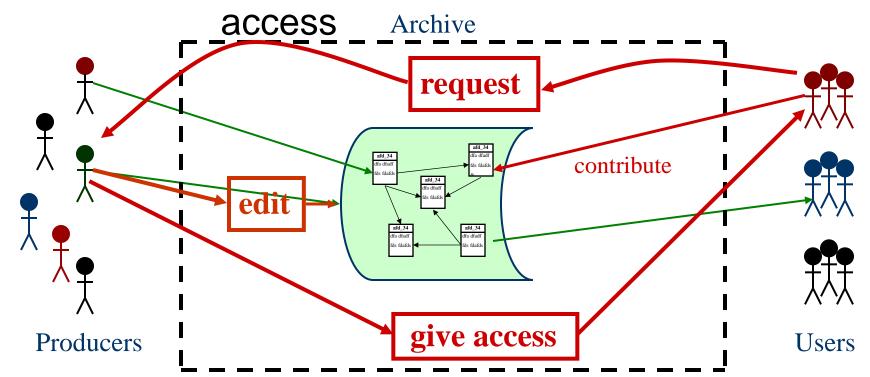
OAIS model

 OAIS archives define three types of 'packages' ingestion, archive, dissemination:



ELAR - architecture

- Boundary between depositors, users and archive:
 - users add, update content; negotiate





Redefining the digital EL archive

- a platform for developing and conducting relationships between knowledge producers and knowledge users – a social networking archive
- level the playing field between researchers and community members/other stakeholders
- encourage, recognise and cater for diversity



 on diversity, tools, standards, archivism, and the boundaries between archiving, documentation and researcher skills



Data management and archiving

- the following slides about data management are NOT strictly speaking part of archiving
 - documenters should use good data management practices whether or not they plan to archive their materials
 - good data management practices will make a future archiving process easier and better



Data management: 3 most valuable strategies

- work out your fundamental units of documentation and the relationships between them
- design and use a filename system
- choose "tools" to suit your purpose, desired outcomes, skills, working styles, existing materials, context
 - if you get these right, they will do the "heavy lifting" of your data management strategy



Data management: 3 more strategies

- use appropriate and conventional data encoding methods (e.g. Unicode)
- be explicit and consistent
- document steps, decisions, conventions, structures
- plan for flow of data, working with others, across different systems
 - see Bird and Simons, 'Seven Dimensions of Portability'



Data management: 2 important (non) distinctions

- a spectrum: data and metadata are intertwined, points in a spectrum rather than different things
- a distinction: distinguish between machine readable information and other information



Data management: 3 important qualities

machine readability
 computer programs can act on your data in
 terms of its proper structures and
 categories

processes will be scalable (will work equally well on large quantities)

<u>example</u> <u>example</u> <u>example</u> <u>example</u> <u>example</u> <u>example</u>

- consistency
- documentation of conventions, structures, methods



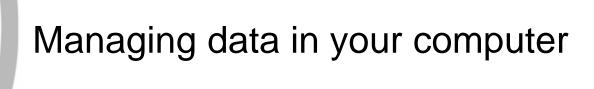
Tell-tale signs of likely problems

- information carried by
 - colours
 - typography (italic, font, size etc)
 - MS Word document
- conflation of
 - information
 - information structure
 - presentation



Simple strategies and checks

- if you want to, you can use MS Word to prepare documents, but:
 - use ¶ to show all hidden formatting etc
 - transfer regularly (and finally) to plain text
 - use defined styles properly
- view materials in plain text and/or in a browser
- if using spreadsheet, sort columns and check for consistency of values



- design a well-organised system of folders and files so that you (and others) can always find your stuff according to what it is, not:
 - where the software decided to put it
 - what the software decided to call it
 - when/where you last used it
 - what someone else called it
- design so that you will always be able to find things



Organising files

- design folder structure as a logical hierarchy that suits your goals, content and work style
- recommendations:
 - have materials gathered within one overall folder (e.g. for backup)
 - make folders for relevant categories, e.g. sessions, media types, participants, dates, or ...
- you may need to *restructure* at different points in your project, e.g. move from



- real world objects are inherently identified because they are physically unique - an unlabelled cassette is only poorly identified
- digital objects have no such physical independence - they depend on the identifiers that we give them
- three types of identifiers:
 - semantic
 - keys
 - relative



On identifiers

- semantic, e.g.
 - Nelson Mandela
 - The Sound of Music
 - SA_JA_Bongo_Palace_Land Dispute Trial_015_29-04-2010.wav *

^{*} SA_JA_Bongo_Palace_Land Dispute Trial_015_29-04-2010.way



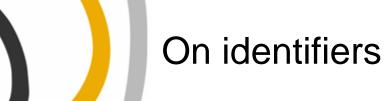
On identifiers

- keys (disambiguators), e.g.
 - 1137204 (a student number)
 - 0803 211 6148 (a telephone number), p12893fh23.pdf (some system's reference number)



On identifiers

- relative, e.g.
 - 67 High Street
 - the secretary
 - index.html
 - metadata.xls



- your collection will have a mix of these but it is important to be aware of the differences and limitations, for example:
 - semantic identifiers: invite name clashes
 - keys: a program or process might depend on the identifier to work properly
 - relative identifiers: if you move them you typically change or destroy their meaning



- a file's identity = path + filename
- the path is a representation of the volume and the directory (folder) hierarchy
- if the full identity is unambiguous then everything can be fine, compare:
 - c:\\dogs\spaniels\rover.jpg
 - c:\\cars\british\rover.jpgor
 - lectures\syntax\20091103\lecture.doc



- semantic identifiers are potentially ambiguous, because just adding more chunks to disambiguate them will not work:
 - my\rover.jpg
 - my\white_rover.jpg
- so objects that are not semantically unique need identifiers which are either keys, or relative



- (having said all that)
- filenames are filenames, and do not necessarily identify other entities
- common mistaken assumptions:
 - a filename "dp_verbs_39.wav" means there is an entity "dp_verbs_39"
 - files are linked by sharing some part of their filenames
 - eg PL_conv_02.wav, PL_conv_02.txt



- we tend to be unsystematic in naming files.
 This might be OK, if you have a large amount of files and a method that already does everything you need to do (and will need to do in the future)
- but filenames that are unsystematic or are non-standard will cause problems, eventually



Filename "good practice"* rules

- all filenames should have correct extensions
- each filename should have only one ".", before the extension
- do not use characters other than letters, numbers, hyphen - and underscore _
- avoid non-ASCII characters
- keep filenames short, just long enough to contain the necessary identifier - don't fill them up with lots of information about the content (that is metadata!)



How about these file names?

- ready.audio.wav
- 2. ReAlLyOdDtOReAd.txt
- 3. éclair.jpg
- 4. éclair_fr.jpg
- 5. e'clair.jpg
- 6. french-cake.jpeg
- 7. french-cake.jaypeg
- 8. lexicon-master
- 9. əłInh.eaf
- 10. ice cream.doc
- 11. OBAMA.TXT
- 12. Obama.txt

Make filenames sortable

- make filenames usefully sortable:
 - 20100119lecture.doc
 - 20100203lecture.doc

```
gr_transcription_1.txt
gr_transcription_2.txt
gr_transcription_9.txt
gr_transcription_53.txt
```

```
gr_transcription_001.txt
gr_transcription_002.txt
gr_transcription_009.txt
gr_transcription_053.txt
```

Associating files

 you can make resources sortable together by giving them the same filename root (the part before the extension), or part of the root

gr_reefs.wav gr_reefs.wav gr_reefs.ear gr_reefs.txt	mean to establish paaka_photo001.jpg paaka_photo002.jpg paaka_txt_conv203.wav	
	paaka_txt_conv203.eaf paaka_txt_lex.doc	



Avoid metadata in filenames

- avoid stuffing metadata into filenames. A filename is an identifier, not a data container
- better to use a simple (semantic) filename or a key (i.e. meaningless) filename, and then create a metadata table to contain all the relevant information
- a table can properly express all the information, contain links etc, and is extensible for further metadata



Avoid metadata in filenames

- e.g. Paaka_Reefs_Dan_BH_3Oct97.wav
- better:
 - paaka_063.wav plus
 - paaka_063.txt

filename: paaka_063.txt

language	topic	speaker	location	date
Paakantyi	Reefs at Mutawintyi	Dan Herbert	Broken Hill	1997-10-03



A filenaming system

- carefully design a filename system for your data and document the system so that somebody else can understand it
- one documenter's new system:

aaa_bb_cc_yyyy-mm-dd_nnn.wav

A filenaming system

aaa_bb_cc_yyyy-mm-dd_nnn.wav aaa = village code bb = (main) speaker code cc = genre/event code yyyy-mm-dd = date (why this order?) nnn = optional number (e.g. 001) .wav = correct extension for file content type



Documenting the filename system

- describe the system
 - how would you describe it?
 - where would you put the description?
- document the codes this is probably part of your metadata



On changing file names

- decide if it's possible, benefits and side effects (e.g. loss of links in ELAN files)
- design a system first
- don't change names in situ copy data set and gradually migrate it to your new system
- document file name changes



Tools for listing and changing filenames

- if possible, automate or copy/paste filenames
- if possible, use machine processes, e.g. filename listings, XLS formulas, filenaming utilities
 - pFrank
 - Karen's Directory Printer
 - DOS cmd
 - Run (Windows + R)
 - type cmd to open "DOS box"



STOP! did you first model your data?

- to model = to explore and be explicit about ontology
- even a cursory attempt will benefit your project
- Lenore Grenoble's example:
 - Greenlandic names
 - Latin (scientific or binomial) name



And then

- ideally, following modeling, you work out how to represent and manage the information in terms of your model, using some of:
 - file organisation and names
 - tables with rows and columns (relational)
 - tagged data
 - multipurpose software such as spreadsheets, databases, XML authoring
 - (if appropriate) specialist software

C · I	•	•
filename:	CACCIONC	VIC
mename.	3 5 3310113	. AIO

ID	audio	transcription
1	TRS00065.wav	bjt_02.txt
2	TRS00066.wav	krs_43.txt

filename: sessions.xml

```
<sessions>
      <session id="1">
            <audio>TRS00065.wav </audio>
            <transcription>bjt_02.txt</transcription>
      </session>
      <session id="2">
            <audio>TRS00066.wav</audio>
            <transcription>krs_43.txt</transcription>
      </session>
</sessions>
```



Formats/encoding

- format choices at these levels:
 - representation of information
 - representation of characters
 - how characters are assembled into files (file formats)



- use UTF-8 (aka Unicode ISO 10646)
- be aware of using characters outside ASCII (common US keyboard characters) – these can break if UTF-8 is not used
- distinguish character encoding and fonts (a font is simply a set of images for a "character set")
 - something may be coded perfectly in UTF-8 but there is no suitable font applied
 - some fonts may display special

Useful tools for character encoding

Notepad++ (download via SourceForge)

```
http://notepad-plus-plus.org
```

Fileformat website

```
http://www.fileformat.info
```

- SIL View-Glyph
- web browsers (they are UTF-friendly)



File formats

- audio
 - WAV
 - (what if original is not WAV??)
 - resolution: 16 bit, 44.1KHz, stereo or better
- video
 - changing frequently
 - MPEG2 or MTS/H264/AVCH
 - resolution: depends on ...
 - get advice and check with your archive!



File formats

- images
 - TIFF **OR** original from device
 - resolution: archive quality is 300dpi or better



- text
 - best is plain text
 - PDF/A often acceptable, may pose problem
 - if MS-Word or ODF, check with archive
- structured data (spreadsheets, databases
 - original format should be supplied
 - provide a preservable derivative as well (eg csv, PDF)
- common linguistic software (ELAN, Transcriber, Toolbox, Praat etc)
 - their file formats are generally



Standards

- we have already mentioned some standards – UTF-8, WAV etc
- there are other relevant standards, eg
 - ISO 639-3
 - metadata systems
- you can also establish project-local standards, eg
 - to handle special characters (eg \e = schwa)
 - data field names
 - document them! for your usage and for correspondence to wider standards



Express yourself - Metadata

- metadata is data about data
 - for identification, management, retrieval of data
 - provides the context and understanding of that data
- carries those understandings into the future, and to others



Express yourself - Metadata

- metadata reflects the knowledge and practices of data providers
- and therefore defines and constrains audiences and usages for the data
- all value-adding to recordings of events (annotations transcriptions, translations, glosses, comments, interpretations, part of speech tagging etc) are actually metadata



Express yourself - Metadata

- you need to choose
 - a set of metadata categories applying across whole collection
 - additional metadata where possible
 - ways of expressing and encoding all that metadata



Common metadata standards

OLAC: Open Language Archives

Community: Date

Identifier Description

Creator Format

Contributor Type

Language Rights

Subject.language Coverage

Relation

- IMDI: ISLE Metadata Initiative (IMDI) more categories, software specific
- ELAR: for endangered language documentation, metadata framework is to



Types of metadata

- people metadata creator's / delegate's details
- descriptive metadata content of data
- administrative metadata eg. date of last edit, relation to other data
- preservation metadata character encoding, file format
- access and usage protocols

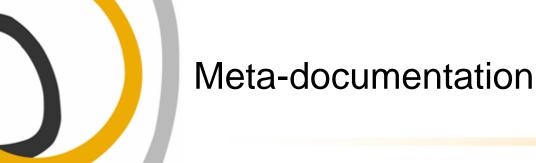


Examples

- <u>example</u> XLS
- <u>example</u> XML
- example key
- <u>example</u> key XML
- <u>example</u> summary and requests
- <u>example</u> notes



Nathan (2010): "think of metadata as metadocumentation, the documentation of your data itself, and the conditions (linguistic, social, physical, technical, historical, biographical) under which it was produced. Such meta-documentation should be as rich and appropriate as the documentary materials themselves."



- identity of stakeholders involved, and their roles
- attitudes of language consultants, towards their languages and towards the documenter and documentation project
- relationships with consultants and community (Good 2010 mentions what he called 'the 4 Cs': 'contact, consent, compensation, culture');
- goals and methodology of researcher, including research methods and tools,



- project and researcher biography:
 knowledge and experience of the researcher and consultants (eg. researcher's knowledge at beginning of project, what training researcher and consultants received)
- for funded projects: grant application, reports, email communications
- agreements entered into formal or informal (eg. Memorandum of Understanding, compensation arrangements), and promises made to



Archiving with ELAR

The Endangered Languages Archive

Preserving and publishing documentation of endangered languages

collections

get an

advice for depositors resources

The Endangered Languages Archive (ELAR) is a digital repository for documentation of endangered languages. We aim to:

- provide a safe long-term repository for language documentation collections
- enable access to documentation collections according to the wishes of documenters and originating speakers and communities
- encourage co-operation between documenters and users of their collections
- provide advice and collaboration



A programme of the Hans Rausing Endangered Languages Project



School of Oriental and African Studies, University of London



ELAR access protocol About ELAR accounts

Hans Rausing Endangered Languages Project (HRELP) Online Resources for Endangered Languages (OREL)

Forum ELAR staff Contact us

Browsable collections

Africa

Asia

Australia

Europe

Middle East

North America

Pacific

South America

Click a region above to view browsable collections. To see all collections, click 'Search' below.

Find a collection

Search

Map

List

Support

Help Forums

Information at the HRELP website:

ELAR @ HRELP The Rausing Room Equipment info & reviews Info for Depositors Deposit forms

The Endangered Languages Archive at SOAS, London

Popular collections



Choquita Rarámuri description and documentation Gabriela Caballero

... audio and video recordings with transcriptions and photos of speakers from Chihuahua, Mexico, Includes myth and historical narratives, oratory, interviews, conversations, activities, ritual song and prayer, language teaching.

Pite Saami: documenting the language and culture Joshua Karl Wilbur

... audio and video recordings of Pite Saami speakers, northern Sweden, with transcriptions and translations in Swedish and English Topics include reindeer roundup and traditional handicrafts.



Ayutla Mixe documentation data Rodrigo Romero Méndez

... around 150 audio and video recordings of speakers from Oaxaca, Mexico, with transcriptions. Includes texts of legends/folk tales and local histories, folk definitions and elicitation.





Featured collection

We recently released Vanishing Voices of the Great Andamanese, a collection of audio and video recordings, texts, books, articles and images. As well as linguistic description and analysis, there are narratives, folktales, conversations, discussions, songs, ancestral knowledge, language learning resources, photos, and paintings by children. Together, these provide a linguistic and social ethnography of the Great Andamanese people.

We have provided an accessible navigational aid to the collection, signaling our new directions for collection presentation.

Access protocol

Throughout the site you see ELAR's access protocol graphics, like this: URCS. A green box like this URCS means that vou can access data.

Only registered users can access data; conditions also apply to each collection or files within it ... read more



User login

Username or e-mail:

Enter your username or email address.

Password:

Enter your ELAR password, (Forgot it?)

Log in

Create new account Request new password

About ELAR accounts

Why apply for an account?

If you don't have an account, you can read about the deposits here but you will not be able to access their resources. By registering, you will be able to access resources, apply for special access to restricted items, and create your own bookmarked collection of deposits.

To apply for an account, you must provide your real name. We do not allow anonymous accounts or fictitious identities. Accounts for ordinary User access are automatically granted on application.

For further information, see Getting an account with ELAR and for details of our account types and access system, see ELAR's access protocol.



- currently about 700 registered users
- users include anthropologists, archivists, artists, ethnographers, ethnomusicologists, filmmakers, folklorists, historians, journalists, language activists, language community members, language speakers, language teachers, librarians, linguists, poets, students, and "generally interested"
- from over 60 countries
- registrations from endangered languagespeaking community members running at



ELAR's holdings

- currently online
 - 100 collections
 - 32,000 'bundles'
 - 60,000 files
 - about 55% are 'open'
 - 4 TB



ELAR holdings

- data types:
 - media files (sound, video) 19,050
 - graphics files (images, scans) 1,857
 - text files (fieldnotes, grammars, description, analysis) 3,407
 - structured data files (aligned and annotated transcriptions, databases, lexica) 1,893
 - metadata (structured, standardised contextual information about the materials)

O E

Search

Found 17670 resources in the archive (page 1 of 2209)

1 2 3 4 5 6 7 8 9 ... next> last»

Anvita Abbi

Jawaharlal Nehru University

Associated deposits:

Great Andamanese Dictionary Vanishing Voices of the Great Andamanese



Great Andamanese Dictionary

Anvita Abbi

... video and audio recordings of songs, narrations, and sentences; interlinearized data; transcription and translation in English and Hindi; pictures with captions.



Vanishing Voices of the Great Andamanese

Anvita Abbi

more v

more *

... Great Andamanese is a highly endangered language of the Andaman Islands, south-east of India in the Bay of Bengal.



Primary data of Daohua

Yeshes Vodgsal Acuo

... audio and video recordings, photos, lexical entries, texts, software dictionary, and research report for Daohua which has about 2,600 speakers in eastern Tibet.



Primary data of Wutunhua

Yeshes Vodasal Acuo

How to use search

You can search in two ways:

- enter text in the search box and press 'Search'. Search is not case sensitive, and variations of words are found, e.g. 'Village' finds 'villages' and 'Indian' finds 'India';
- or

 click a keyword in the left panel to find a set of resources. Click another keyword to refine the results (a black keyword) or to

find a new set (a brown keyword)

To refine your search:

 enter two or more words for results containing all those words;
 e.g. entering 'nigeria' and 'audio' finds the deposit Damakawa wordst which includes recordings

made in northern Nigeria.

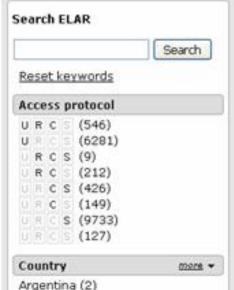
 use the keywords in the left panel to browse and select further categories; e.g. if you search for 'nigeria' and 'audio', a list (under 'Tags') includes place and language names: Akoko, Ikaann, Damakawa and Sakaba. Click one to find a resource pertaining to that name

To reset search and display all keywords, press 'Reset keywords'.

Colour coding of results

Search results can include deposits, bundles (file groups within deposits) and people. These are colour coded:

- A deposit: click on its title to view the deposit
- A bundle (group of files within a deposit: click on the icon or title to see the files and more metadata
- A person (usually, a depositor): click on the name to see more details, or click on one of the associated deposits.



Australia (21) Bolivia (3)

Brazil (2)

Brunei (1)

Language

Adelaide dialect (175) Aiton (2)

Arapaho (128)

Assamese (2) Auga (5)

more ...

Type Audio (13927)

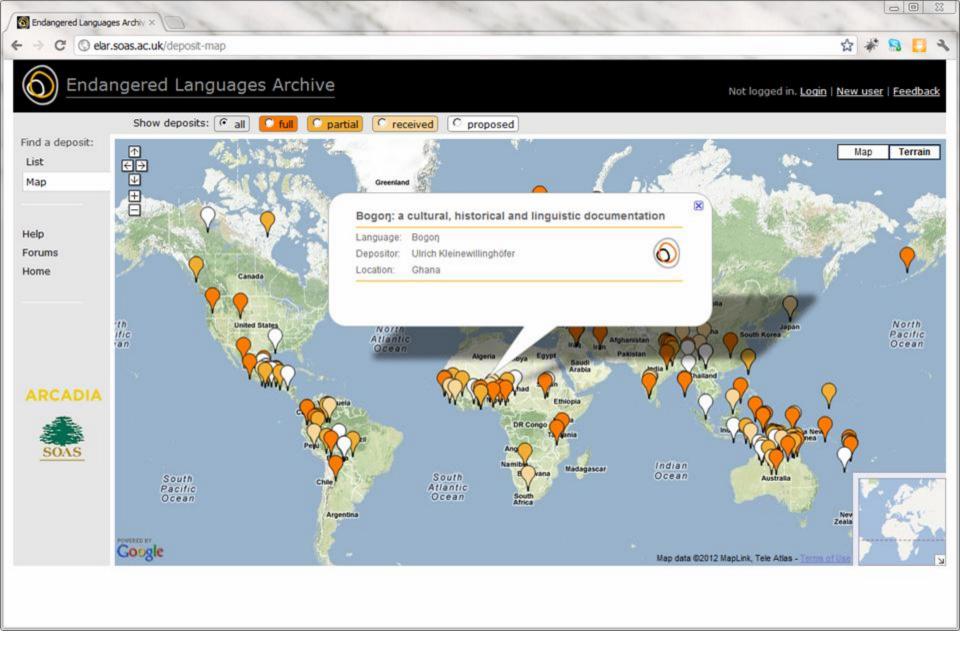
Deposit (136) Document (1721)

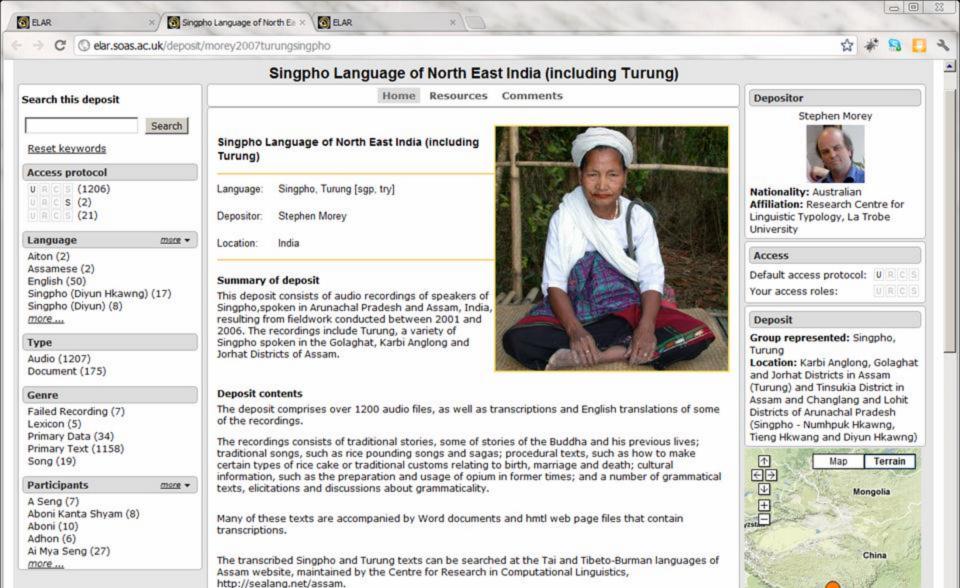
ELAN (1087)

Image (804)

more

Tags more ▼



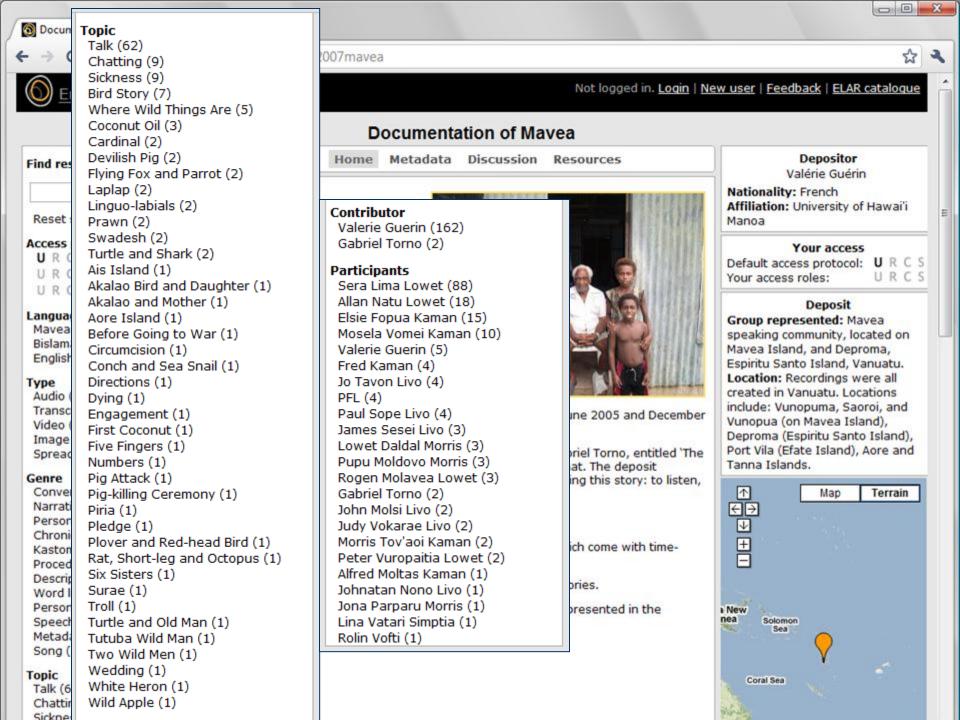


This recording was made by Dr. Stephen Morey in Assam. It is part of the heritage of the Singpho or

India

Myanmar

Acknowledgement





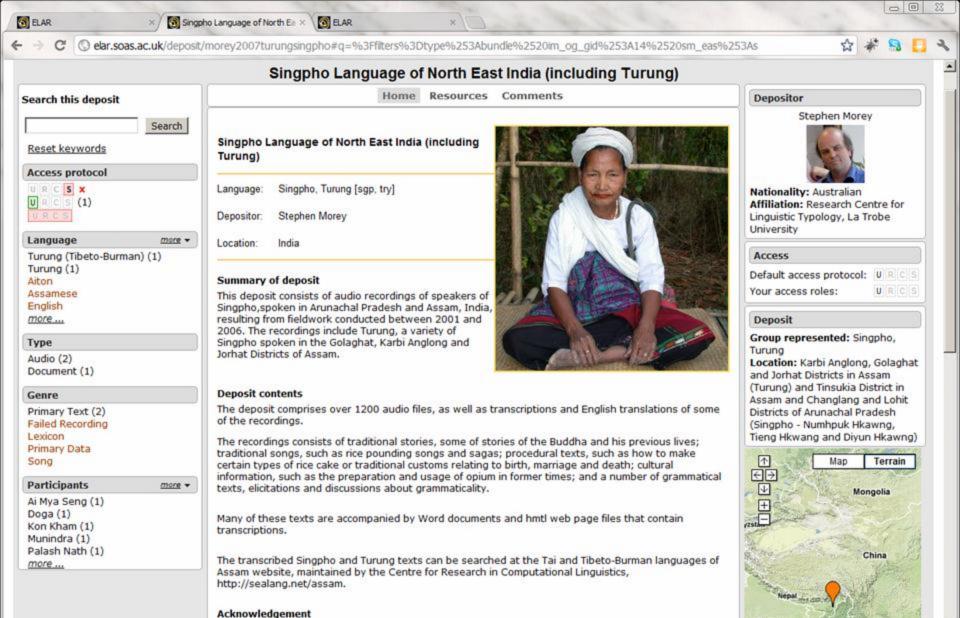
Access Protocol - URCS

- "full-size" URCS in black and white which show the status of either a deposit OR a user
 - URCS all Users can access.
 - $oxed{f U}$ old R old C Researchers and Community members are allowed access
 - $\mathbb{L}^{\mathbb{R}}$ only Community members are allowed access (normally requires application to Depositor)
 - URCS only Subscribers are allowed access (requires application to Depositor)
 - URCS only the Depositor and delegate can access



URCS enhanced

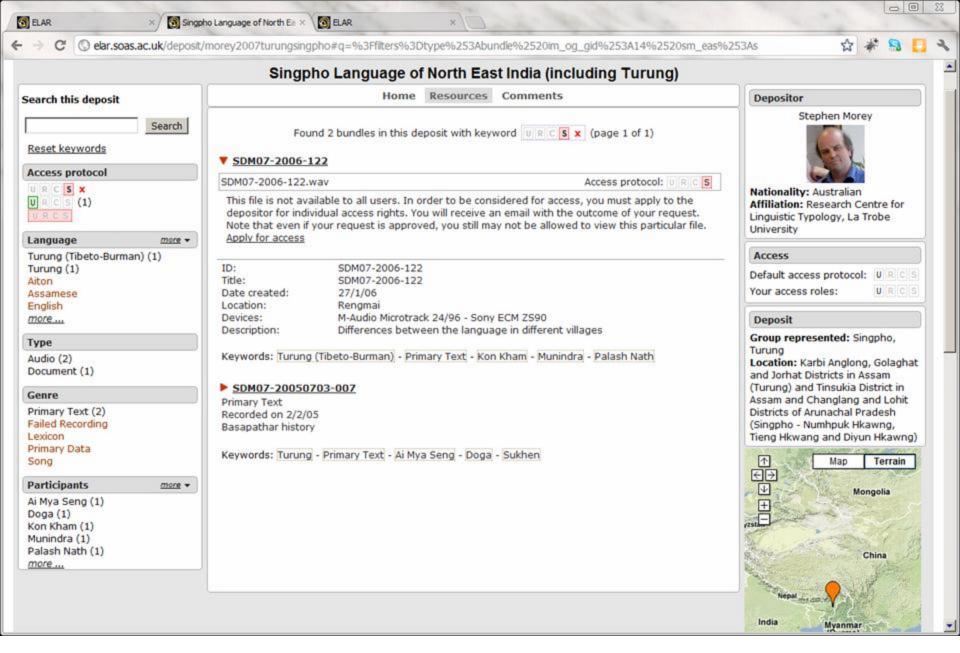
- coloured URCS which display an overlay of deposit PLUS current user status, for example: "mini-urcs" URCS
 - URCS no account or not logged in
 - URCS User account, resource available to Users
 - URCS User account, resource available to Subscribers
 - URCS Community member account (for this deposit), resource available to Researchers and Community members
 - UROS Depositor (for this deposit), resource available to Subscribers (but Depositor can access all of their own deposit)

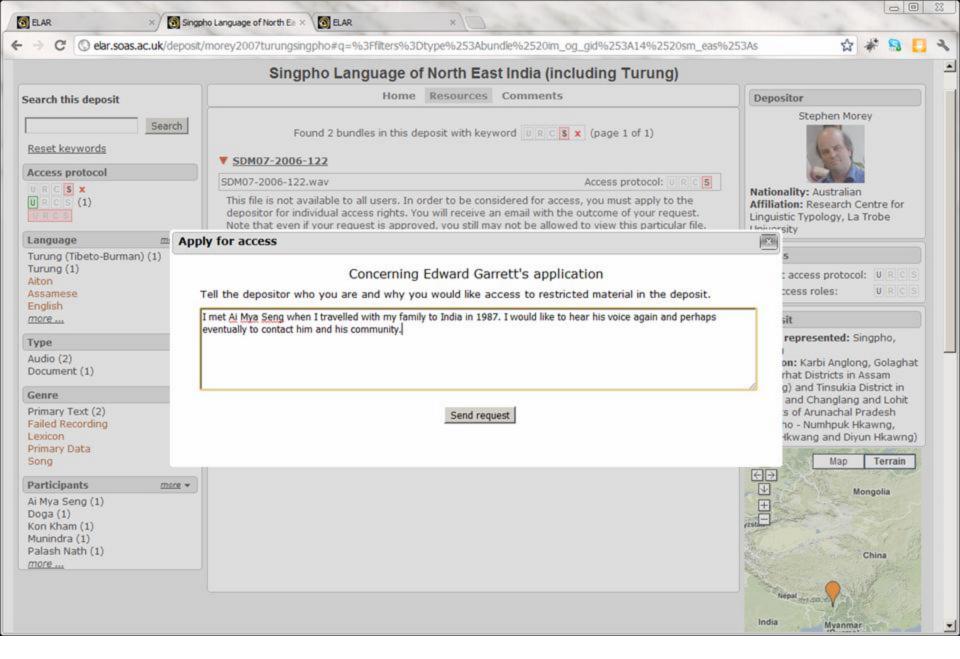


This recording was made by Dr. Stephen Morey in Assam. It is part of the heritage of the Singpho or

India

Myanmar







Archiving process

- look at ELAR
- contact ELAR
- send samples, summary
- send resources in suitable form
 - preservable
 - negotiate problems for best outcomes



Archiving process – what to provide

- deposit form (online)
- at least some description or annotation for all media
- inventory/catalogue/metadata covering ALL files
- metadata should cover at least these minimal categories:

Category	Definition	Example
Filename	The name of the file with its extension.	ejosm001.wav
Path	The path to the file in the folder structure of your deposit.	c:\recordings\ejosm001\ejosm001.wav
Identifier	The name of the file without its extension or filetype number.	[2] ejosm001#
Title	A descriptive title for the session.	The Old Man and the Sea#
Topic(s)	The topic/subject matter of the session.	old man sea fish#†
Genre(s)	The genre of the session.	narrative retelling ^{#†}
Participant(s)	People involved in the session (may include the speaker and/or the person who made the recording).	John Smith Jane Saunders#†
Language(s)	The language(s) used in the session.	English Spanish#†
Date	The date when the session happened.	2012-03-06#
Location	The location where the session happened.	Euston Tap, Euston Road#
Description	A description of the content of the session.	John retells the story of <i>The Old Man</i> and the Sea by Ernest Hemingway. #
Access Rights	An indication of who can access the deposit: (U, R, C or S – see below)	U



Current mode

 "progressive deposits", to deal with backlog of deposits; appear sooner and incrementally curated

deposited data

data conditioning

resources available online

curation and enrichment

published collection



Archiving process – working with ELAR

- answer questions and help modify if necessary
- provide information (text, images) for general introduction
- if access restricted, respond to requests
- manage protocol over time
- send updated and additional materials
- give us feedback, report problems



end of archiving slides !!



Mobilisation

- documentation should be useful for a variety of purposes, including language teaching/learning
- may involve recording, collecting, managing materials differently, different metadata etc
- involves multiple skills and is best done by a team
- exploit 80/20 rule
 - only 20% of the user's perception of value comes from 80% of the work
 - 80% of the user's perception of value



Karaim – from CD to YouTube

- Spoken Karaim <u>link</u>
- annual summer schools
 - games <u>link</u> crossword
 - games <u>link</u> memory
 - resources link texts
- drama work <u>link</u> performances
- subsequently the kids have posted their own videos on YouTube



Other examples

- Gayarragi, winangali adding value to linguistic materials <u>link</u>
- created in training contexts <u>link</u> <u>link</u>
- Wunderkammer mobile phone dictionaries link
- speech bubble player <u>link</u>
 - conversing in Pite Saami are Henning Rankvist (left) and Elsy Rankvist (right). Video and texts from an ELAR collection deposited by Joshua Wilbur. Speech bubble player created by Edward Garrett.

E

End