Resources for Endangered Languages

Specifications for a Roadmap

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Introduction: current EL resource situation

Key concept:

language documentation (~ *language resources*)

Introduced by Lehmann ("language museum") and Himmelmann ("language description vs. language documentation") around 1990.

Thus: the development in general linguistics arose at about the Same time as the LRE paradigm in the SAM and EAGLES projects.

Language documentation is embedded in contexts such as

- heritage preservation (texts, audio-visual recordings)
- education (primers for spelling, vocabulary; readers)
- language maintenance (large dictionaries, translation, public media)
- language revitalisation (administrative and political re-instatement)

Snapshot of some documentation initatives

Some organisational and funding initiatives:

FEL: *Foundation for Endangered Languages* (Nick Ostler)
ELF: *Endangered Languages Fund* (Doug Whalen)
GbS: *Gesellschaft für bedrohte Sprachen* (Hans-Jürgen Sasse)
HRELP: *Hans Rausing Endangered Languages Project* (SOAS)
DoBeS: *Dokumentation Bedrohter Sprachen* (VW Foundation)
E-MELD: *Electronic Metastructures for Endangered Languages Documentation* (Linguist List - Tony Dry, Helen Aristar-Dry)
ALP: ROSETTA *1000 Language Project / ALL Language Project* (Jim Mason)

The good news:

diverse funding is available for diverse needs.

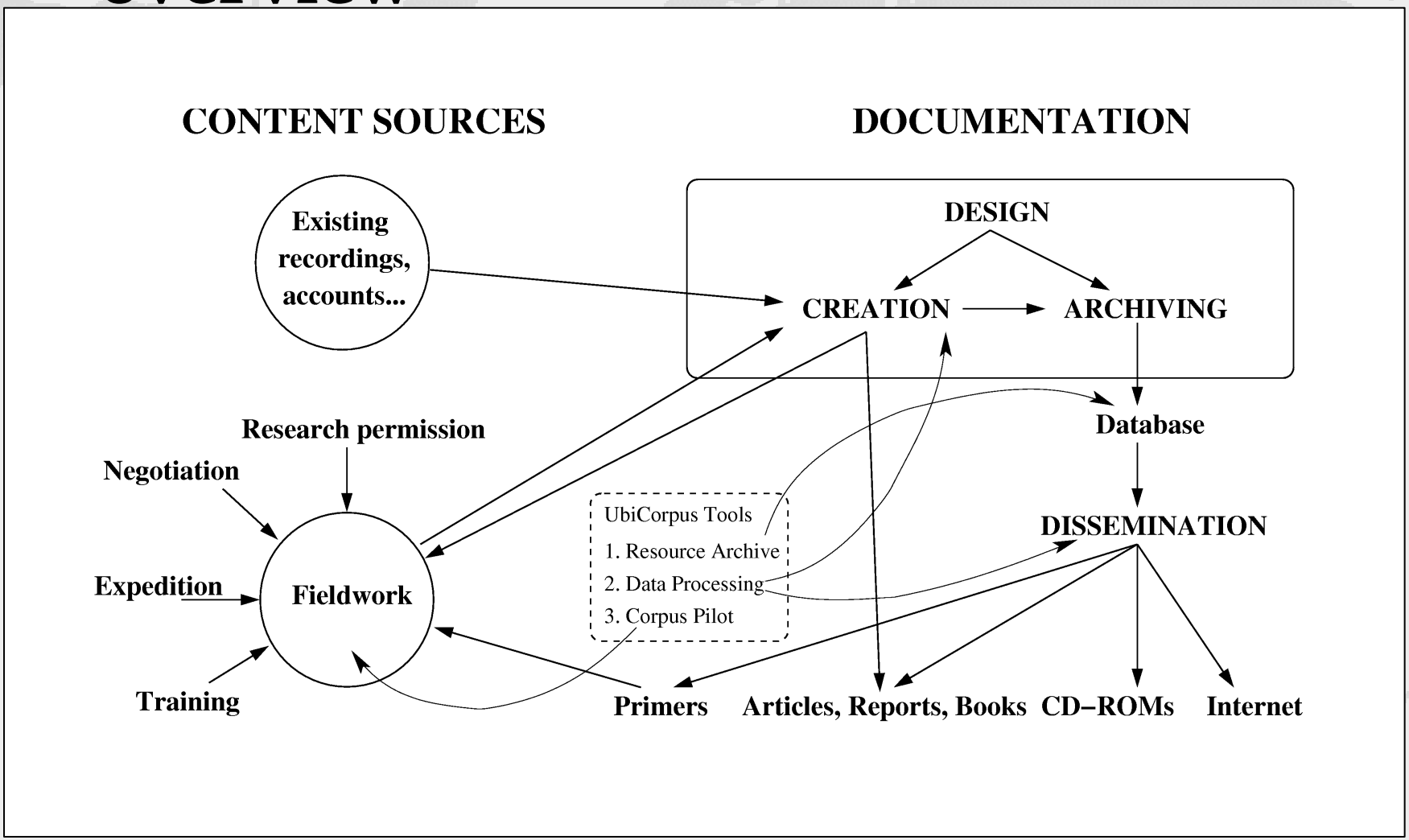
The less good news:

there is generally little interest in or awareness of state-of-the-art LRE.

Understandable, but controversial priorities:

if in doubt, *description* first, then *application*,
and LRE standard *documentation* later (if at all)

Documentation logistics: an overview



W orkable *E* fficient *L* anguage *D* ocumentation

The WELD Four Level Content concept:

1. Primary documentation: recordings, texts.
2. Secondary documentation: annotations, lexica, sketch grammars, ...
3. Primary description: large coverage lexica, descriptive grammars
4. Secondary description: theoretical typological and formal studies

The WELD Five Procedural Criteria concept:

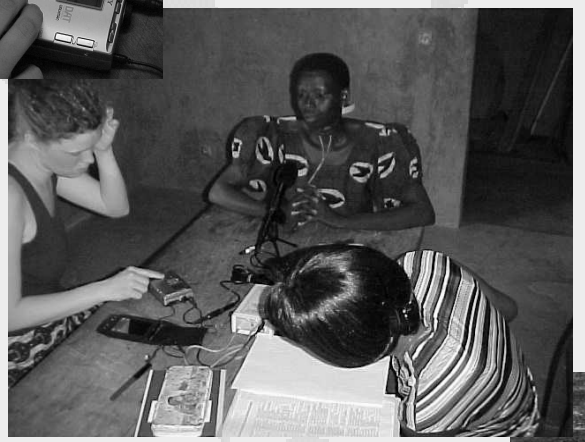
1. *C* omprehensive
2. *E* fficient
3. *S* tate-of-the-art
4. *A* ffordable
5. *F* air

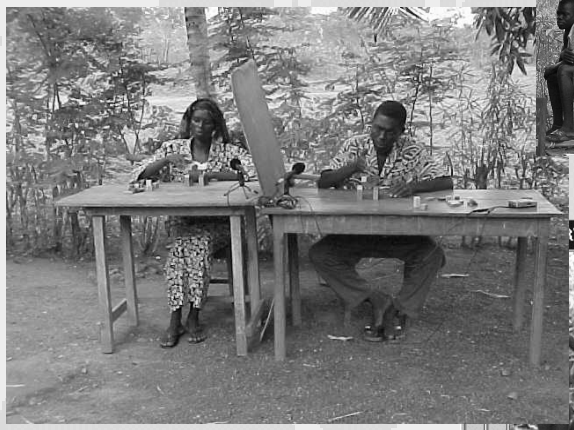
Operationalising the concepts with technology initiatives:

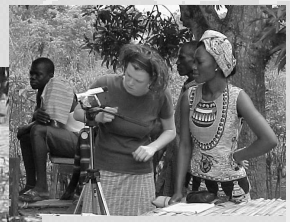
LLSTI, *Local Language Speech Technology Initative*
(Roger Tucker, Ksenia Shalonova)

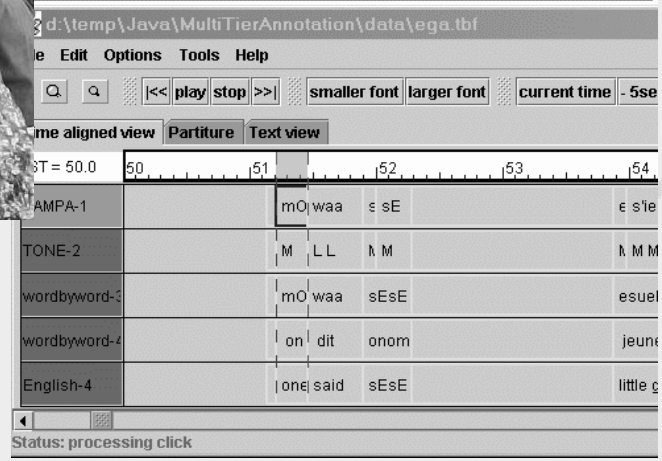
ELSNET (Steven Krauwer and many others ...)

Some resource types









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gbU$gb□ $	*adj*	red	gbùgbɔ́

PSI: the Principle of Securing Interpretability

Lexicon:

Conversion of inconsistently structured print media, undocumented Shoebox databases into standardised formats with appropriate metadata.

Character encoding:

Conversion of proprietary - often unknown - fonts into Unicode standard character definitions, if possibly by glyph comparison of printed matter - always scan your documents too!

Interlinear glossed text:

Conversion of visually formatted text - i.e. text which is unstructured in terms of coherent text objects such as tables - into coherent text objects into an XML format

Annotated recordings:

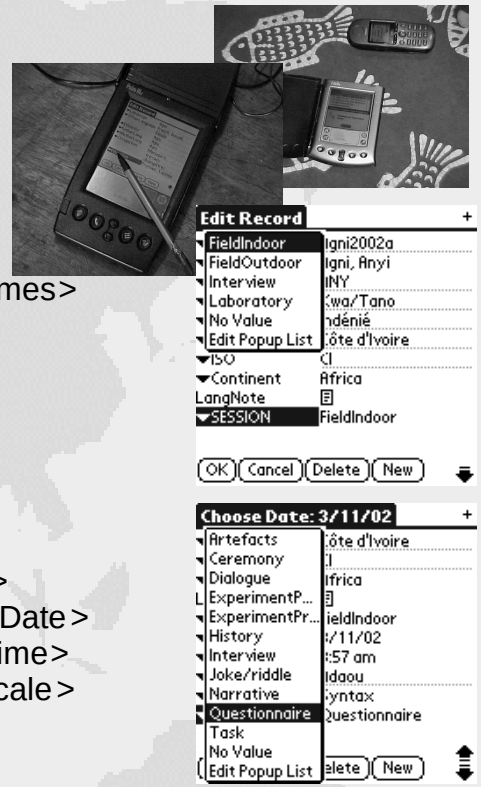
Conversion of various received formats (esps/waves+, Transcriber, Praat) into a generic format TASX

Linguistic descriptions:

As far as possible, conversion of received English, French etc. descriptions and metadata into GOLD (General Ontology for Linguistic Descriptions)

Gibbon, Bow, Bird, Hughes, *Securing Interpretability ...* LREC 2004

Access: pocket metadata - input + export



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LangNote:	
SESSION:	FieldIndoor
SessionDate:	02-3-11
SessionTime:	8:57
SessionLocale:	Adaou
Domain:	Syntax
Genre:	Questionnaire
Part/Sex/Age:	Kouamé Ama Bié f 35
Interviewers:	Adouakou
Recordist:	Salffner, Gibbon
Media:	Laryngograph
Equipment:	1) Audio: 2 channel, l laryngograph, r Sennheiser studio mike 2) Stills: Sony digital 3) Video: Panasonic digital (illustration of techniques)
SessionNote:	f. Adouakou phrases repeat

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studio mike
2) Stills: Sony digital
3) Video: Panasonic digital (illustration of techniques)</Equipment>
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Main goal: resources for endangered languages (1)

Description: Provision of model resources for endangered languages with different typological characteristics (audio and video recordings, texts, transcriptions, annotations, sketch grammar, extended core lexicon, appropriate acquisition tool.

Target: 2010.

Justification: A number of the model descriptive / documentary ventures are under way, but most other activities do not use state-of-the-art LRE methodologies.

Obstacles: Bottlenecks connected with the "digital divide" between commercially interesting and uninteresting languages and societies and social prejudices against minority low prestige languages.

Main goal: resources for endangered languages (2)

Prerequisites: enabling approaches and technologies, such as

WELD, PSI, ...

LLSTI, BLARK

Impact: For example, TTS (text-to-speech) systems can

empower pre-literate members of rural communities

by providing information channels parallel to traditional social channels

about health, agriculture, marketing, banking, education

Evaluation: Various evaluation techniques are needed in connection with diagnostic analysis and field functionality for local and scientific communities.

Milestones

Provision of

model *resources*
with model *metadata*
and access *portals*
for endangered languages
with different typological characteristics

in the form of:

audio and video recordings
transcriptions and annotations
texts
text markup
core lexicon
sketch grammar

Recommendations

Technological empowerment of endangered and other minority languages by

- more work on the PSI methodology for securing interpretability
- implementation of the WELD principles of
  - Workable
  - Efficient
  - Language
  - Documentation
- requirements specification, design and implementation of
  - the BLARK for HLT
  - according to LRE guidelines (ELSNET)
- development of basic speech technology applications (LLSTI)
- provision of access to resources via metadata portals (OLAC)