

Basic Oral Language Documentation (BOLD)

Will Reiman
Research Associate
SIL International

I have been blessed and honored to work on my organization's Strategic Research Unit for Language Documentation. I have practiced and refined the ideas and theories of Dr. Gary Simons, with the strong technical advice of Brad Keating, an ethnomusicologist with my organization. To them and the rest of the Unit, I must give much of the credit for what I will show here. Of course, any errors and omissions are entirely my own

Background: Indigenous Felt Needs

- Many speech communities desire their language to be documented.
- Leaders among the Kasanga (650 speakers, Guinea-Bissau) comment that:
 - children leave for jobs, grandchildren no longer speak Kasanga, do not know Kasanga ways.
 - they know their numbers were larger, and now are small, and see that the language will most likely cease to be spoken soon.
 - they appreciate and agree when told their language and culture are valuable and worthwhile.
 - they want outsiders to learn and understand their language

How do minority language communities feel about Language Documentation?

Many speech communities desire their language to be documented.

Leaders among the Kasanga (650 speakers, Guinea-Bissau) comment that:

as children leave for jobs in the city, the grandchildren come back no longer speaking Kasanga, not knowing Kasanga ways.

they know their numbers were larger, and now are small, and see that the language will most likely cease to be spoken soon.

they appreciate and agree when told their language and culture are valuable and worthwhile.

they want outsiders to learn and understand their language

Background: Indigenous Felt Capacities

- If we encourage them: “You should document your language!” how will they respond?
 - “Our language is not written.”
 - “We do not know how to write. Those of our people who write have moved to the city.”
 - “Learning to write/type/use a computer is expensive. It is time consuming. It has little benefit here in the forest”

How do minority language communities feel about their capacity to accomplish Language Documentation?

Approaching

the language documentation challenge
from the *native-speaker* point of view

- These groups can most benefit from a form of collaboration that meets mother-tongue speakers (preliterate language experts) on their turf: oral language use.
- We have found that this oral process enables MT speakers to compile and annotate their communities' own language data corpora.

Lets look at approaching Language Documentation from the native speaker's point of view.

- These groups can most benefit from a form of collaboration that meets mother-tongue speakers (preliterate language experts) on their turf: oral language use.
- We have found that this process enables MT speakers to compile and annotate their communities' own language data corpora.

Oral Data Annotation

- Since the vast majority of languages that need documentation have neither an orthography nor a literate community, this method focuses on Oral Commenting, or *Oral Data Annotation*:

Oral Data Annotation: recording language information about a media file through audio (and/or video) recordings of MT speakers, tagged to the original media files.

The goal:

“Language Documentation is concerned with compiling, commenting on, and archiving language documents.” — Himmelmann, 1998

1. **Compile** a sample of recordings of a full range of speech event types
2. **Comment** orally on those recordings
 - E.g., transcription, translation, discussion, situational context, informed consent to share
3. **Archive** the complete corpus of recordings and commentary with an institution that will provide long-term access

Historically, any comments on language documents have been written in form. This adds a layer of opacity for preliterate groups to the process and product of any documentary effort. Oral Language Documentation avoids these problems by minimizing the need to write out any mother-tongue content or comment.

So we **Compile** a sample of recordings of a full range of speech event types
Comment on those recordings
Archive the complete corpus of recordings and commentary with an institution that will provide long-term access

My focus is on the center concept, number 2: how to comment on language documents.

before we talk about **my** methods, let us look at what technique has already been advocated.

Precursors in the Literature

- Woodbury 2003.* - “We will ... produce **running UN style translations** ... We are also considering not transcribing everything – instead, ... asking elders to **“respeak” [tapes] to a second tape slowly** so that anyone with training in hearing the language can make the transcription of they wish.”

*Woodbury, Anthony C. 2003. Defining language documentation. p. 45 in Peter K. Austin (ed.), Language Documentation and Description 1:35-51. London:SOAS.

Recently, at the 2003 annual meeting of the Linguistic Society of America, Dr. Tony Woodbury provocatively talked about NOT producing written interlinear glosses nor written transcriptions for the ongoing Cup'ik (CHOO-pik) documentation efforts. He advocated audio recordings of running translations and recordings of careful pronunciation. His notion of “respeaking” caught the attention of my colleague, Gary Simons.

Precursors in the Literature

- Simons 1983*- “[a] first tape recorder is used to play back the original text in short sections ... correspond[ing] to natural breaks in the text. After each section, the storyteller ... give[s] a translation of that section. [A] 2nd ... recorder is left running ... to record both the original text and its translation...”

*Simons, Gary F. 1983. *Language variation and limits to communication*. Dallas, Texas: Summer Institute of Linguistics.

Gary immediately remembered a principle technique he practiced and wrote up during his PhD research in the late '70s.

“[a] first tape recorder is used to play back the original text in short sections ... correspond[ing] to natural breaks in the text. After each section, the storyteller ... give[s] a translation of that section. [A] 2nd ... recorder is left running ... to record both the original text and its translation...”

Again we have the idea of re-recording a text, but in this method **pausing** the original at phrase breaks to orally insert **translations**.

Precursors in the Literature

Thomas, Jacqueline M.C. 1976.*

4- Recording texts

- a) Make an initial spontaneous recording of the narrator, ...
- b) Go over this spontaneous recording, ... with a qualified speaker, in order to have it repeated sentence by sentence, in a careful, relatively slow, yet normal manner...

*Enquête et description des langues à tradition orale. I L'enquête de terrain et l'analyse grammaticale. II. Approche linguistique (Questionnaires grammaticaux et phrases) III Approche thématique (Questionnaire technique et Guides thématiques). Paris, SELAF, 2nd ed., 1976

Going back even further, we can find this type of technique described in 1976 by Jacqueline Thomas in Enquête et description des langues à tradition orale, a field manual developed in West Africa for language research. Addressing the linguistic field worker, she gave them this advice to facilitate written transcription, and make their job way easier:

Section 4, Recording texts

- a) Make an initial spontaneous recording of the narrator, ...
- b) Go over this spontaneous recording, ... with a qualified speaker, in order to have it repeated sentence by sentence, in a careful, relatively slow, yet normal manner...

So what I am proposing is nothing entirely new, but it finds new space and purpose in the sub-field of Language Documentation, and further reach in digital forms.

Past Methods	Future Potentials
<ul style="list-style-type: none"> • written language documentation is painstaking, and costly in terms of time, persons, finances, and accessibility by preliterate groups. • tape-recorded language documentation has been explored and advocated for decades, but not widely used. Shareability and sustainability are possible, but costly in terms of time, persons, and finances. 	<ul style="list-style-type: none"> • could an oral approach – with digital recording – maintain or improve the <ul style="list-style-type: none"> – quality, – sustainability, and – shareability of documentation, • while decreasing <ul style="list-style-type: none"> – time spent, – training required, and – with a smaller budget? • We think so.

Why pursue this approach? Well, we have been unsatisfied with written forms of documentation: it often requires painstaking study to even get a phonetic transcription, even before analyzing orthography decisions. There are also costs in terms of transcription time, personnel necessary, finances, and accessibility by a pre-literate speech community.

Many have used the oral annotation method with analog technology. This however does not adequately satisfy Himmelman’s third characteristic of **archiving** – at least not in a timely and accessible way.

So we have been compelled to ask:

could an oral approach – with digital recording – maintain or even improve the
quality, sustainability, and shareability of documentation,
while decreasing
time spent, training required, and with a smaller budget?

We think so.

Basic Oral Language Documentation: the Process

- re-recording a speech event while...
- inserting oral annotations in the resulting recording

Basic Oral Language Documentatin combines aspect of each of the three scholars to whom I just referred.

Pausing the original speech event between phrases, the Mother-Tongue speaker can insert annotations into the audio stream.

So we start with a recorder that we turn on and leave on.

Basic Oral Language Documentation: the Process

- re-recording a speech event while...
- inserting oral annotations in the resulting recording

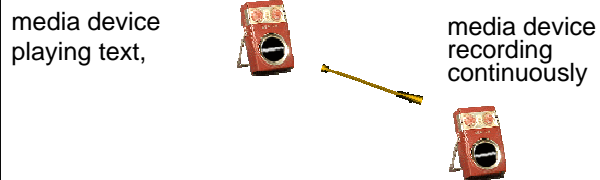
media device
recording
continuously



We then start playing the recording of our text...

Basic Oral Language Documentation: the Process

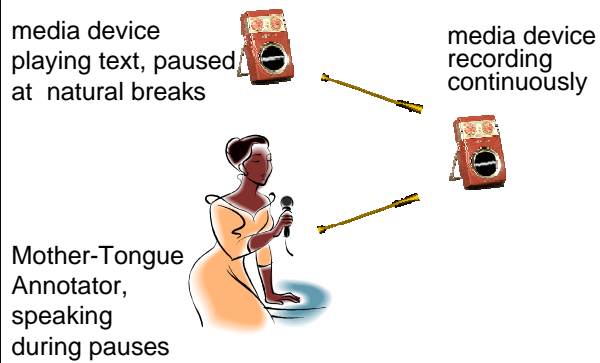
- re-recording a speech event while...
- inserting oral annotations in the resulting recording



...pausing at natural phrase breaks

Basic Oral Language Documentation: the Process

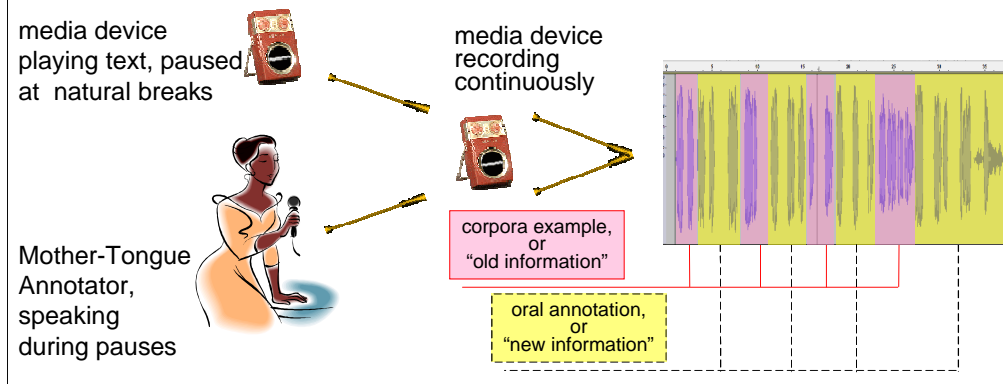
- re-recording a speech event while ...
- inserting oral annotations in the resulting recording



so the Mother-Tongue annotator has time to introduce comment on the *just-previous* phrase, into the recording.

Basic Oral Language Documentation: the Process

- re-recording a speech event while
- inserting oral annotations in the resulting recording



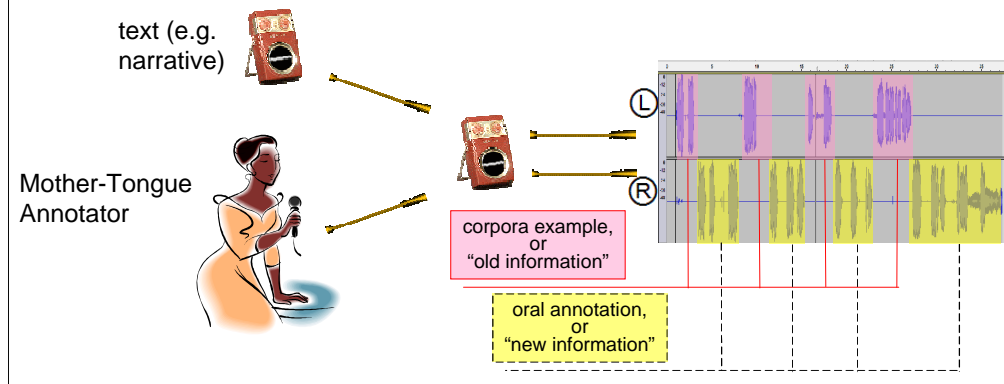
Both signal sources are recorded, yielding a “turn taking” effect in the end product.

A researcher at any later time can then manually select the annotations they would need for their research.

However, if during equipment set-up one goes to the minimal extra bother of sending the original speech event’s signal

Basic Oral Language Documentation: the Process

- re-recording a part of the corpora while
- inserting oral annotations in the resulting recording



...to, say the Left channel of a stereo file, and the annotation stream to the Right channel, upon visual or audio inspection it is immediate and obvious which part of the sound stream is the original speech event, and which part is annotation.

This representation has the capacity for automated processes, including machine searchability. Such software is currently under development.

An Example

- People group: The Kasanga of Guinea-Bissau (ISO 639-3: ccj).
- Pop.: 650 speakers.
- When: October 2007.



Ibo, fluent Kasanga
MT speaker.

For example, in October of 2007, I spent a week documenting a few small parts of the Kasanga language, whose speakers number about 650.

Record Original Audio Data

Original
Recording



- Record

First, I recorded a communicative event. Most of my recordings there were hortatory narratives.

Here is a 12 second sample of one I collected:

Record Original Audio Data

Original
Recording



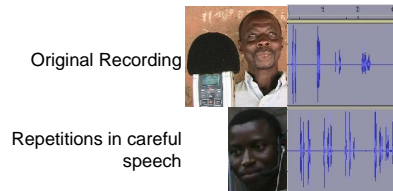
- Record

(wait for end of sample play). Next,

Record Comments on Audio Data



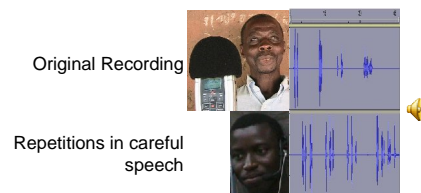
- Record
- Annotate
 - careful speech



I took that recording and played it into another, stereo, recorder.
The Mother Tongue Annotator listened to the process,
pausing the playback on a phrase-by-phrase basis,
to repeat each phrase in careful speech.
The re-recording of the original was kept on the left channel, and
the careful repetition was kept on the right channel,
to preserve and isolate the new information in it's own
channel.

I'll now play this new creation.

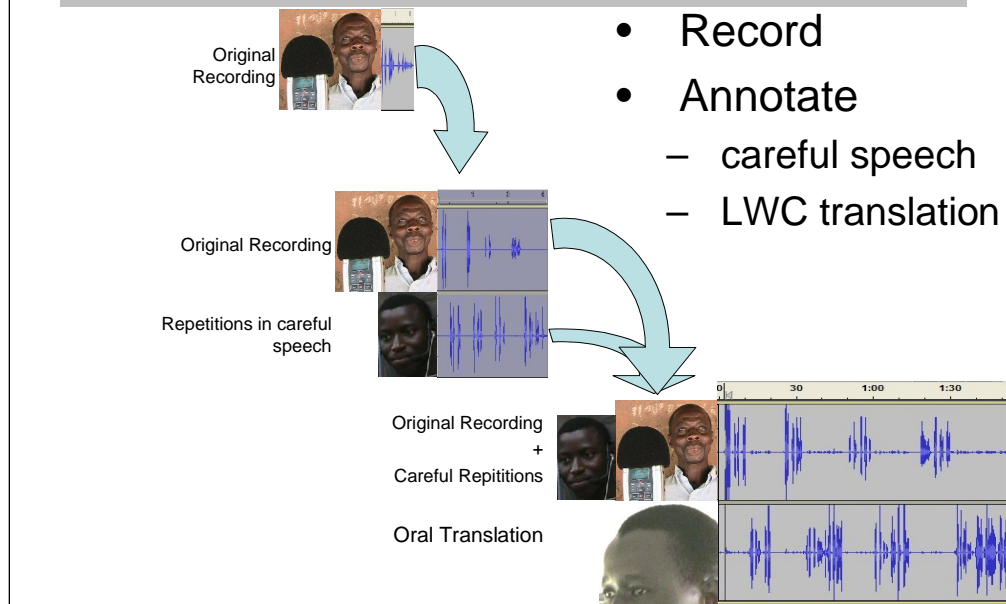
Comment on Audio Data



- Record
- Annotate
 - careful speech

(wait for end of sound file, gesturing appropriately)

Orally Translate the Audio Data



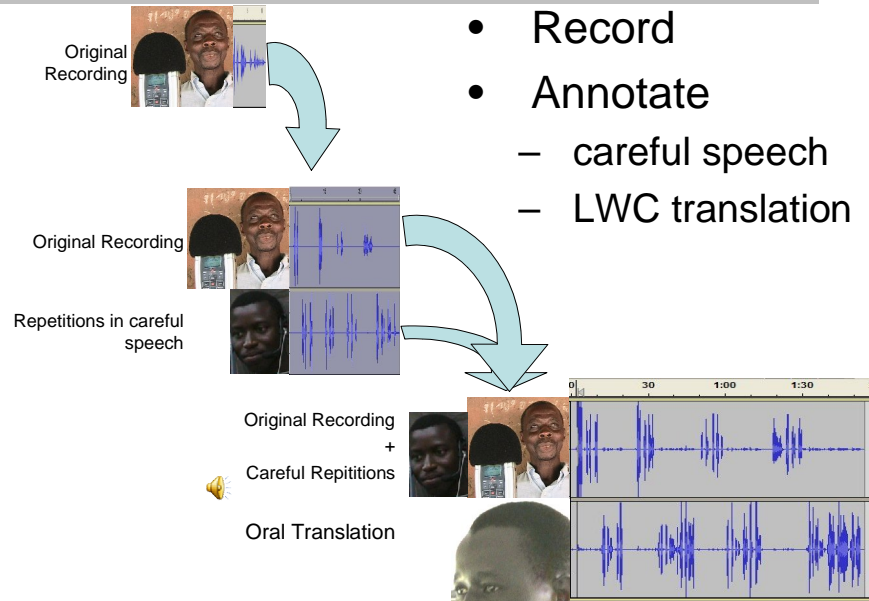
I used this process in multiple iterations,

always isolating the **old** information to the Left channel, and isolating the **new** information on the Right Channel.

Added here is the wave-form of the oral translation we made from the preceding recording.

Note that the “original recording” and the “Repetitions in careful speech” are combined onto the Left Channel as “old information”.

Orally Translate the Audio Data



(gesture as appropriate).

The main skill necessary for the trainee was how to appropriately utilize the pause button. Synchronizing this with a fast-moving recording is not always easy, but those I trained ended up handling it very well. I realized I needed to devote at least a couple hours to just getting them used to the technique.

Kinds of Oral Annotation: Careful Speech

- can be loosely referred to as 'oral transcription', as it is meant to provide a clearer interpretation of the phones involved in the diction.
- The MT annotator enunciates the natural text slowly and clearly, phrase by phrase

So we see that there are a basic three kinds of Oral Annotation.

Careful Speech could be loosely referred to as 'oral transcription', as it is meant to provide a clearer interpretation of the phones involved in the diction.

As you saw in the Kasanga example, the mother-tongue annotator enunciates the natural text slowly and clearly, phrase by phrase

Kinds of Oral Annotation: Phrasal Translation

- phrase-by-phrase “gloss line” of the speech act into a Language of Wider Communication (LWC)

a second kind of oral annotation is an oral translation – each phrase in turn is translated into a language of wider communication.

Kinds of Annotation: Analytical Comments

- **background information** of MT speech events,
- in a Language of Wider Communication
- concerns:
 - implied information,
 - cultural knowledge,
 - etc.

The third type is analytical comment. Analytical Comments are

- background information of Mother Tongue speech events,
- original to Mother Tongue speakers,
- made accessible to non-speakers in a Language of Wider Communication.

These are comments concerning things such as implied information, cultural knowledge, and folk taxonomies, etc.

Details of the setup

player
with
original sound file



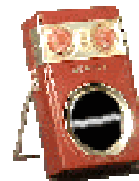
The details of hardware setup starts with a player,

Details of the setup

player
with
original sound file



Recorder



a recorder,

Details of the setup

player
with
original sound file

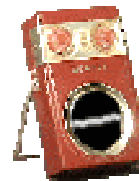


paused for each
comment



Annotator's comment
microphone.

Recorder



a microphone,

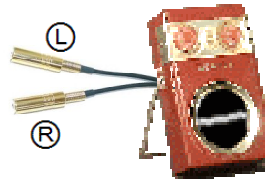
Details of the setup

player
with
original sound file



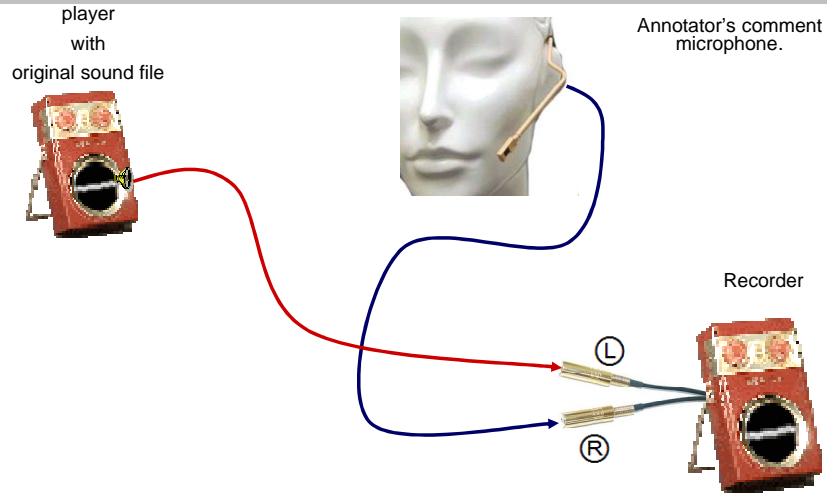
Annotator's comment
microphone.

Recorder



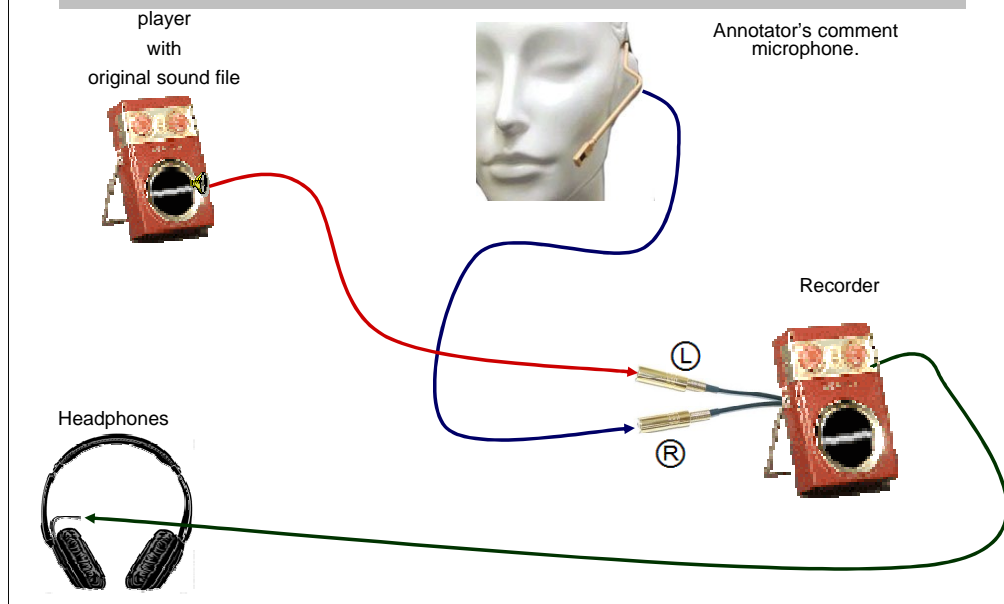
an adaptor that can place separate signals on right and left channels,

Details of the setup



other connecting cables and adaptors,

Details of the setup



and a way of monitoring the recording, preferably headphones ***and*** a visual monitor on the recorder,

Let's see some examples.

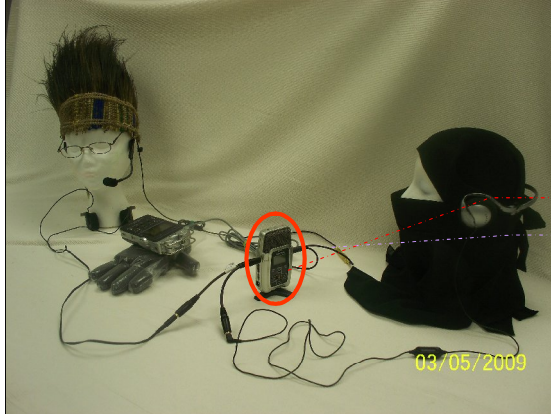
Examples: Basic Setup



channel separator

In this example I will start with pointing out the channel separator, which

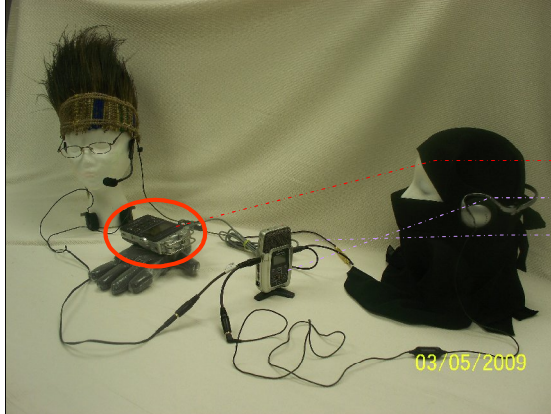
Examples: Basic Setup



recording device
channel separator

connects the recorder to the two signal sources,

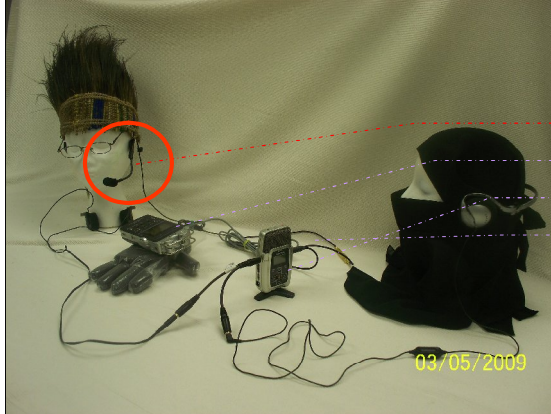
Examples: Basic Setup



playback device
recording device
channel separator

The 1st, a playback device

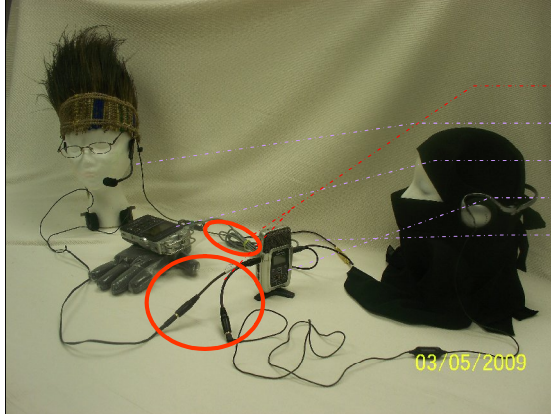
Examples: Basic Setup



annotator's microphone
playback device
recording device
channel separator

The 2nd, a microphone, sending native speaker comment.

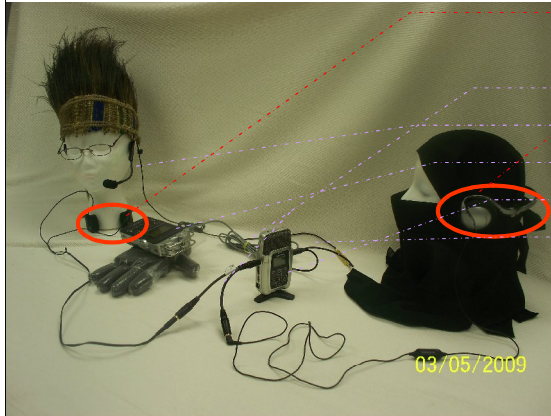
Examples: Basic Setup



- connectors/ adaptors
- annotator's microphone
- playback device
- recording device
- channel separator

Then basic connenctors and adaptors, to get the signal from here to there...

Example 1: Basic Setup



headphones for
annotator & researcher
connectors/ adaptors
annotator's microphone
playback device
recording device
channel separator

Pros: easy to carry Not very intrusive visually
Con: Ext. mic pre-amps are often weak.

And headphones for both Annotator and researcher

This setup is:

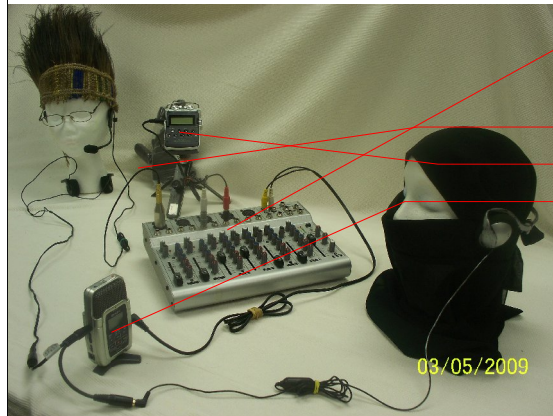
easy to carry

Not very intrusive visually

but:

Ext. mic pre-amps in many Digital Audio Recorders are weak,
yielding a softer than preferable signal.

Example 2: improved mic gain



Battery-powered mixer

annotator's microphone

playback device

recording device

Pro:

Better mic signal

Cons:

More to carry

Very visible in use

A different set up can help the weak built-in pre-amps. It introduces a battery powered mixer to boost the signal.

This item brings the disadvantage of weight, extra cost, and attracting attention to the researcher, when it can already be difficult to blend in.

Example 3: less special cables



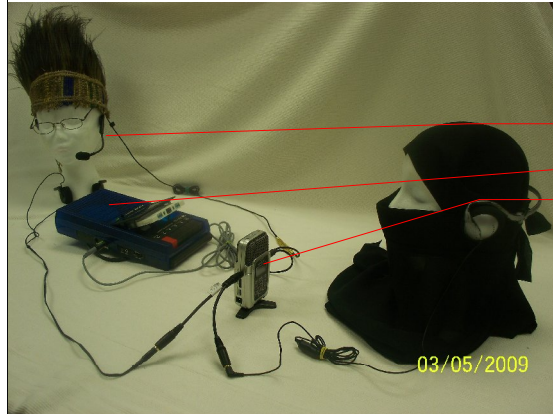
annotator's microphone
playback device
recording device

Pros: v. lightweight v. Few cords, etc.
Cons: reduced quality of re-recorded text added difficulty in later parsing of file into phrase segments.

Setup 3 here uses the Zoom H2's four internal microphones, taking the annotations in through the rear microphones, and the re-recording through the front mics.

Signal quality is lost, however, by playing the text from speakers into the recorder. This also makes the process of parsing the recorded phrase segments, after recording, more difficult.

Example 4: use of analog cassettes



annotator's microphone
playback device
recording device

Pros: Original recordings on known, low-cost technology
Good for legacy data

Cons:
Data not totally digitally actionable, sustainable, shareable

For the last example, if we take a couple steps backward with technology, we can also make use of a hybrid analog/digital system.

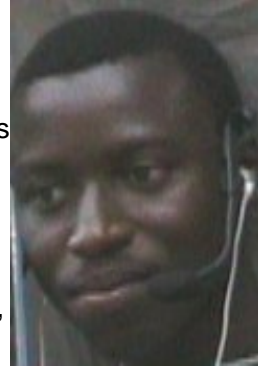
- Many in rural settings are familiar with the standard cassette player/recorder, plus
- there is a great deal of legacy cassette data that will not survive much longer without digital re-treatment of some sort.

Of course the data on analog cassette is not digitally actionable, sustainable, or shareable.

A digitizing layer in the work-plan would need to be added.

Implementation: Kasanga

- what worked well
 - many youths already had familiarity with equipment controls (that is, they are already familiar with the use of a “pause/play” button),
 - we trained well, we practiced a lot. We were there for only a week, and most of the time was chewed up with these. It did pay off.
- what didn't
 - culturally: could have given more time to greetings and “going through channels”.
 - we paid no attention to planting/harvest cycles, arriving at the peak of peanut and rice harvest.
 - The method of giving a parting gift for the community was not adequately researched.



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we paid no attention to planting/harvest cycles, arriving at the peak of peanut and rice harvest.

The method of giving a parting gift for the community was not adequately researched.

Implementation: Gikuyu

- what worked well
 - the persons appointed for the work
 - working with speakers well versed in a LWC
- what didn't
 - the persons appointed for the work
 - working with speakers well versed in a LWC



In March of 2008 I took time to practice language documentation techniques among the Gikuyu of central Kenya.

what worked well (read slide, then explain)

the transcriber appointed for the project (shown in the top picture here) was blind in one eye, deaf in one ear, and was missing some front teeth. But he still did a great job!

as to the Language of Wider Communication, when working on word lists, the MT Gikuyu speakers literate in English could, in small groups, effectively quiz themselves from the word-list hardcopy (they are in the bottom picture), removing the 'outsider' (me) from the scene. I turned on the recorder, walked away, and only intermittently needed to check on record levels. This led to a comfortableness on their part that yielded MT discussions of difficult words, which were later 'orally translated' using the BOLD method. This leads to great insight on translation, domains, and native structuring of their language.

what didn't

Youth did not do well with semantic domain "green-lighting" and other "synthesis" type tasks. My hypothesis is they use Swahili often, and are enough removed from Gikuyu use, that they don't think well on their feet in Gikuyu nor about Gikuyu. It would have been better to have at least some older speakers in the green-lighting group, having more command of Gikuyu.

Proposals for data use

- **Historical Conservation** – (potentially) hundreds of natural oral texts, with analyzable through oral copies of careful repetition, and understandable through oral translation into a language of wider communication.
- **Stimulation of Mother Tongue Use** – Lots of texts that the speech community themselves find worthwhile, in readily accessible formats, for both native speakers and “cross-over” generations.
- **Language Learning** – a corpus of easily intelligible oral texts for the cross-cultural workers desiring to gain a communities heart language.
- **Cultural knowledge-base** – a rapid acquisition of indigenous knowledge, ready for near-immediate distribution.
- **Linguistic Training materials** – High-quality sound samples of real-world speech, for phonetic, morphemic, morpho-phonemic, syntactical, and discourse illustration, etc.
- **Literature Development** – A basis from which a wide body of literature could be developed, strengthening other cultural preservation efforts, plausibly self-sustaining.
- **Oral Arts Preservation** – The style and significance of a culture’s oral arts can be preserved, enabling better conservation and development of that important cultural form.
- **Better prepared field researchers** – with high-quality, pre-recorded, natural, ethno-linguistic data –available digitally -- the next cross-cultural researchers can get to the field much more focused and better prepared to accomplish mutual goals with the speech community.

Conclusion

Himmelman's three concerns of language documentation were **compiling**, **commenting on**, and **archiving** language documents.

This method, Basic Oral Language Documentation,

- Compiles high-quality audio-documents with rapidity.
- Enables speech community comment with facility.
- Produces data that is digitally sustainable and shareable (viz., well archived).

In addition, it

- **increases the level of collaboration** with pre-literate communities,
- **immediately provides a useable product** to the speech community, in the form of valued text in digital audio format, and
- **increases the amount of data gathered** per “linguist-hour”, since the mother-tongue annotators are more central when using an oral process, and the linguist, more peripheral.