Culture documentation and linguistic elicitation

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Introduction

It is clear that along with the decline in smaller languages around the world, numerous cultural and economic practices are also declining or changing rapidly under the influences of globalisation, technological change, climate change, and other forces. As documentary linguists we may often endeavour to gather information of ethnographic relevance, but in general we are more focused on collecting 'speech'; even though increasingly we make video recordings, the quality and watchability of the video we produce is often poor, as we are not adequately trained or resourced and we struggle to collect both audio and video of good quality simultaneously. As a separate issue, many of us collecting data in the field use a variety of more-or-less established linguistic stimuli—often with mixed success, as some of these stimuli are somewhat incongruous outside of the Western settings in which they were produced.

This paper will argue that well-filmed short videos of cultural practices can be used not only for eliciting procedural/cultural narratives as linguistic data, but could also provide visually appealing material for ethnography, and conceivably other uses such as cultural/eco tourism. By recording narrations as a separate soundtrack (cued by the visual stimulus) researchers will be able to collect explanations by speakers representing different age groups, genders, dialects, or in different languages from different regions or even different countries. Taking traditional usage of the sugar palm in Sulawesi, Indonesia as a test case, I demonstrate data collected in a representative sample of languages, and discuss the technical challenges of a multilingual multimedia corpus.

1. Video in language documentation

Much has been written in favour of the use of video in language documentation in recent years. For many researchers the ability to add visual data to a record of a speech event makes the record that much richer—including information about the environment,

the use of gestures and facial expressions and so forth (see e.g. McConvell 2007, Ashmore 2008, Margetts & Margetts 2012). There is also the simple fact that transcribing audio of a language one does not (yet) know becomes considerably more difficult in the absence of visual clues (Evans 2010: 41), especially when more than one speaker is involved. With a few notable exceptions, it seems that the tide of opinion is in favour of using video as an integral part of language documentation.

However, having looked at video data from many documentation projects I think it is fair to say that too often video for language documentation is produced with little or no regard for the quality of the images either from an aesthetic or technical viewpoint, nor do they generally aim to 'tell a story' other than trying to represent a speech event. An overview of videos deposited at the Endangered Languages Archive (ELAR) at the School of Oriental and African Studies (SOAS) in London shows that there are two main types—one basically consisting of long static shots of one or more seated people speaking ('sit and talk'), and another consisting of handheld work produced by following one or more speakers around as they show and explain things in a house, garden, around a village and so forth ('point and show'). Neither kind tends to show much, or indeed any, use of editing beyond 'start' and 'stop'¹.

These types are arguably acceptable within a narrow expectation of the role of video within language documentation, which is basically to add some visual context to recordings whose focus is the audio recording of speech events. The limitations are also understandable, given that the linguists involved are usually working on their own (without a professional film crew or even an assistant), and are using small consumer level camcorders rather than large and heavy professional video cameras. But clearly language documentation video could certainly be improved both from an aesthetic/technical perspective, and from a film-maker's 'storytelling' perspective.

The 'sit and talk' type of recording tends to be dull, visually speaking. It can be argued that this is in the nature of the genre—the value of the content derives from

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¹ There are of course hybrid genres such as 'shaky sit-and-talk'. In ELAR there are also video files submitted for archiving with little or no linguistic content. One memorable file concerns a duck waddling along, complete with nausea-inducing pans and zooms, with some inaudible and untranscribed talk in the background. Another includes a group of women (one of whom has her face obscured by the researcher's knee)—who prepare to have a conversation, but are soon interrupted when a truck enters the scene and makes conversation impossible. The conversation does not resume, but the camera keeps rolling.

paying close attention to the speech and gesture, so perhaps the best we can do is make sure the audio is clear, the speakers (especially their faces) are clearly visible, and some thought has been put into visual aspects such as the framing and lighting. The assumption here is that only those with a real personal or professional interest are likely to watch these types of videos and thus there is no need for them to be interesting to the casual viewer.

However, in the 'point and show' genre there is real room for improvement. In the majority of recordings of this type that I have seen, the shaky handheld camera work creates an unaesthetic or even nauseating effect, and the audio suffers as well. This is a real shame, as quite often the items and/or activities depicted are not only of cultural interest but are also visually interesting. The problem is in essence that consumer camcorders, by virtue of being small, lend themselves to being waved around to follow action or to pan around scenery, and many linguists haven't had the training or experience to know that this generally isn't a good idea. Similarly, the promotion of a camcorder's zoom capabilities and the ease of access to the zoom control suggests to the untrained user that it is desirable to zoom in to items of potential interest and then zoom back out again. These factors, coupled with the rather poor lenses and low resolution of many consumer camcorders, make a lot of the video output of language documentation projects frankly unwatchable.

However, recent advances in technology mean that it is now possible for video segments to be filmed to a high professional and aesthetic standard even using relatively affordable equipment. For example, current Digital Single Lens Reflex (DSLR) cameras are capable of capturing extremely high quality high-definition (1080p) video and have large sensors allowing for a narrow depth of field (making the subject stand out and giving a 'filmic' quality not possible with most consumer video camcorders). At the same time, medium to high-end camcorders are now uniformly high-definition and can achieve excellent image quality and clarity. Compared to DSLRs, they also have quite effective image stabilisation for handheld shots².

Another problem with the output of many documentary projects is the lack of editing, meaning that many video recordings consist of unbroken shots of variable

² Many of these cameras are lacking in audio connectivity, however, the audio can easily be recorded separately with an inexpensive digital recorder (such as a Zoom H1n, H4, or Sony PCM-M10), or indeed can be recorded at another time as per the 'narration' model described here.

length. Most likely this is because this was how audio recordings were made in earlier periods; the tape recorder would be switched on, only to be stopped when a narrative, interview or conversation was 'over' (which could mean a story or topic was finished, or more likely meant that the tape finished, the consultant got bored, or it was time to do something else). Since few people would listen to fieldtapes of an obscure language for entertainment, there was no expectation that these recordings should have silence, technical problems or irrelevancies edited out, and this has passed on to video recordings. Indeed I have heard it expressed by documentary linguists that editing would make recordings inauthentic³. However, to viewers who are accustomed to watching film and television (and most are) the lack of editing contributes to making much documentary linguistic video all but unwatchable—and this raises a question: should it be watchable?

I would argue that at least some of it should be. While it does no harm to make rather visually uninteresting video recordings that nevertheless may have important language data contained within, it is also the case that many language documenters have been given significant amounts of funding (public or private), that they are working with people who are often custodians of unique linguistic and cultural knowledge, and that they thus have both the opportunity and the responsibility to record this in ways that are both comprehensive and accessible. As Dimmendaal wrote recently, 'linguists may learn from ethnocinematographic contributions... that there is also an aesthetic aspect to the video documentation of communicative behavior' (2010: 155), and the same observation is of course true for other cultural activities which may or may not be primarily linguistic, but which will almost certainly have a linguistic component.

2. Endangered activities

Many ethnographic films (at least those I have seen come out of my fieldsite of Sulawesi, one of Indonesia's larger islands where I have been conducting linguistic research over the last 16 years) focus on spectacular or 'exotic' activities, e.g.

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³ This attitude seems odd, as everything preceding and following the period of recording has in effect been edited out. In any case, it is of course possible to submit unedited recordings for archiving along with edited watchable highlights, as potentially useful information can end up on the cutting room floor.

picturesque ceremonies, dances, or funeral activities such as buffalo sacrifice and cave burial. While documenting these types of activities is undeniably important, it is also important to document everyday activities of economic and cultural importance—and especially those activities likely to change drastically in the near future due to modernisation⁴.

Here follows a short list of some 'endangered' or at least rapidly changing activities common in (but not necessarily exclusive to) Sulawesi.

- The production and collection of the various products of the sugar palm: palm sugar, palm toffee, palm wine (toddy), palm liquor (arrack), brooms and ropes made from the fibrous bark, and the sago grub found in fallen trunks.
- Growth, harvesting and drying of spices and other products, for example, cloves (the major cash crop of North Sulawesi), cinnamon, vanilla, pepper, nutmeg, coffee, and cacao (the major cash crop of South Sulawesi).
- Coconut harvesting and the various products of the coconut: copra and coconut
 virgin coconut oil, coconut cream, coconut timber, etc.
- The growth, harvesting, preparation, and local use of various tropical fruits: salak (snakefruit), rambutan, markisa (yellow passionfruit), etc.
- Silk production in South Sulawesi.
- Salt evaporation and collection.
- Basket weaving, which varies widely by region.
- Traditional boat (*pinisi*) building in South Sulawesi.

Taking as a detailed case study the example of palm sugar production in Minahasa, North Sulawesi: Palm sugar is typically produced *in situ* near stands of *Arenga pinnata* palm trees, in a small hut known in most local languages as a *panggulan* ('place for making sugar'). The farmer must climb to the crown of the palm tree and make a certain type of incision to allow the sap to flow out through a spout made out of cut leaves. The sugary sap is collected overnight into bamboo tubes and again during the day. It quickly begins to ferment, so it must be boiled immediately if it

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⁴ A side effect of this focus, at least in Indonesia, could be that it will cover products which are familiar in processed form to Westerners, but where the raw material and the process are not widely known — for example the harvesting and drying of clove buds or vanilla beans.

is intended for sugar⁵. The sap is boiled in a large metal pan over a wood fire until it reduces to a thick syrup and begins to crystallise, and is then scooped into coconut shells to set. When it has set, the sugar is tipped out and can be taken to market to sell as *gula batu* (rock sugar). Much the same process is used across Indonesia, the Philippines, and indeed most of South-East Asia and beyond, though there are of course local variations.

However, increasingly in Minahasa sugar palm farmers are choosing to collect the palm sap in plastic bottles and take them to centralised depots accessible by road, where it can be collected by tanker, taken to a new factory, and processed into a granulated brown sugar, or alternatively fermented into ethanol for biofuel. This is perfectly reasonable as producing *gula batu* is labour intensive, it is not held in high regard locally and does not command a high price at market, as Indonesian consumers have begun to prefer processed granulated sugar. In addition, the traditional method of production uses a large amount of firewood, hence contributing to deforestation and smoke pollution, whereas the new factory in Minahasa is powered by abundant local geothermal energy⁶. There are clearly sound reasons for moving away from the traditional method, but it does mean that a particular way of earning a living, together with specific skills, activities and related vocabulary, is rapidly disappearing.

This is one example, but there are many, as increasing modernisation and economic imperatives affect the way of life of people across the region. The use of buffalo and cattle for preparing land and as draught animals is declining as agricultural machinery becomes more affordable (or necessary in efforts to increase production). Similarly, hand-threshing of rice is giving way to mechanical threshing and milling, the latter increasingly performed at large industrial mills. This means that not only unique genres such as rice-pounding or winnowing songs are under threat, but much of the vocabulary associated with the processes is also disappearing as the process moves into the industrial sphere, where the language is Bahasa Indonesia.

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⁵ If it does ferment it is consumed soon as palm wine (*saguer*) or made in cottage distilleries into *cap tikus*, both also processes which should be documented.

⁶ http://www.masarang.org/index.php?option=com_content&view=article&id=27&Itemid=38&lang=en

3. Video clips as linguistic stimulus

Turning now to another topic, for decades now linguists have used a variety of visual stimuli for eliciting particular kinds of linguistic data. Some examples include the picture book *Frog Where Are You?* (Mayer 1969, often referred to simply as 'the frog story'), or filmed examples such as *The Pear Film* (Chafe 1980), or the *Cut and Break* films (Bohnemeyer *et al.*) and others from the Language & Cognition Group of the Max Planck Institute for Psycholinguistics in Nijmegen (MPI). There have undoubtedly been excellent results from these types of materials, but my experience suggests that there are difficulties using them in Indonesia, and anecdotal evidence from other researchers suggests similar problems in other parts of the world where visual literacy and expectations may differ from a Western model.

I spent 2006 in North Sulawesi, Indonesia as part of an Endangered Languages Documentation Programme (ELDP) funded project documenting Toratán (a highly endangered language with about 150 elderly speakers), and I took Frog Where Are You? and the MPI Cut and Break and other video clip libraries with me. I had high hopes of getting good data from these materials, and once I had found a number of consultants and established a routine of recording and explanation sessions I introduced the book and the video clips. This was not very successful. Only one of my Toratán consultants was able to tell the frog story from the pictures (he was a former schoolteacher and good at improvising speech from a variety of situations). The five others I asked were entirely unable to see the point of the exercise—for them it seemed not only entirely unnatural but inexplicable that I should ask them to narrate a picture book that I could see perfectly well, and in fact had given them myself. I had a similar response with the MPI video clips; the retired schoolteacher was able to provide commentary but my other consultants found it impossible to concentrate on the activities shown and instead repeatedly commented on the appearance of the (mostly Northern European) people in the clips. It became apparent that the alien setting and foreign appearance of the MPI clips was ultimately too distracting for most of my consultants to be able to respond to them, and I gave up trying.

Around the same time I was recording procedural narratives about the planting and harvesting of various crops. These were videotaped conversational explanations provided by my elderly consultants who were generally seated indoors. I decided it

would be good to collect video to go with those explanations and took the opportunity to visit a local *panggulan* where a sugar tapper was still making palm sugar in the traditional way. I video-recorded many steps of the process, and noticed when showing the footage to my consultants that they were extremely eager to explain what was happening, in stark contrast to their reactions to the MPI video clips. Clearly the video of a local activity was much more effective at encouraging them to speak⁷.

Using Final Cut Pro I edited the 50 or so minutes of footage into a 7-minute movie showing the major steps of climbing, cutting, collecting, boiling, pouring and the end result of *gula batu*. I then collected narrations from several speakers, simply by showing them the video on a laptop and recording their explanations. Figure 1 shows one such narration by Bert Hosang, together with the transcription and translation into local Indonesian and English as annotation tiers in the MPI's ELAN program.

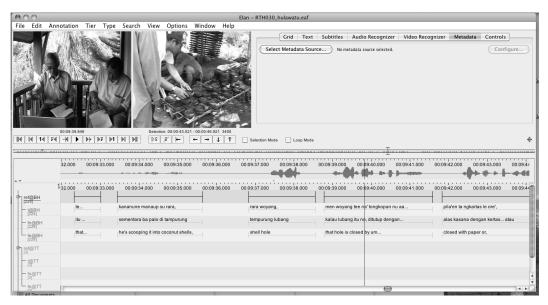


Figure 1: ELAN screenshot showing palm sugar video as stimulus (right), and Bert Hosang watching and narrating (left). Tartius Timpal is taking notes.

Later I used the palm sugar footage together with Bert Hosang's narration and the associated annotations to make a subtitled DVD (Figure 2), which I distributed in

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⁷ This is in accord with Yamada's observations for a similar project in Surinam documenting cassava production: 'Elders enjoyed narrating a film of such local relevance featuring local "actors". Elders felt they were providing data that were of immediate importance in their own community. This led to a sense of local ownership of the documentation process.' (Yamada 2007:264).

the community. It also contained a number of subtitled conversations about cultural topics such as traditional marriage practices, land use, and general extended reminiscence.



Figure 2: Screenshot of the subtitled DVD

Although the Toratán palm sugar video was very successful for its purpose of collecting narrations in Toratán, it has shortcomings. On the technical side, the video quality is not up to current standards, being basic PAL resolution on DV tape, and the Panasonic camcorder used at the time, while a relatively high-end consumer model, did not deal well with the high-contrasts seen in the equatorial sun (as seen in the top left of Figure 2 which is over-exposed resulting in a loss of detail in the image). My own inexperience led me to move the camera too much, which is distracting and makes it look amateurish, although I did use a tripod for several static shots. And (perhaps most importantly) I was just filming what I saw without much prior preparation, and thus did not record all the important parts of the process. For example I had failed to get footage of the bamboo tubes being washed out with boiling syrup in order to prevent fermentation of the fresh sap. This distinguishes sugar production from *saguer* (palm wine) collection and is thus a crucial stage, but this only became apparent after editing when I was recording the narrations, as each narrator would remark upon the 'missing' stage.

4. An expanded and improved model

The successes and shortcomings of the palm-sugar video have led me to refine the model for the current Australian Research Council-funded project Languages of Minahasa⁸ which commenced in April 2011. This project, a collaboration between Australian, Indonesian, and Japanese researchers, aims to intensively document and describe four languages of Minahasa (the region occupying the eastern tip of the peninsula of North Sulawesi). Material on the languages under study (Tondano, Tonsea, Tombulu, and Tombatu) will be added to data collected from Toratán and Bantik, creating a uniquely comprehensive record of most of the local languages in a region of high language endangerment.

One of the aims of the project is to investigate the extent of grammatical difference between the six languages, but because data is being collected and evaluated by (at present) four researchers and a number of local support staff, there is a need for controlled methods of collecting language data that can be compared across all the languages. One such method is the use of culturally-situated video stimuli, so I have begun to build a collection of short, carefully-filmed and tightly-edited video clips intended for eliciting procedural/cultural narratives. The first videos produced again concentrate on the products of the sugar palm due to its central importance in the economy and ecology of the region. As with the Toratán palm sugar video, rather than recording the explanation at the same time as the video, it is recorded separately as a narration, which frees the researchers to collect narrations by different speakers representing different age groups, genders, dialects, and languages from across the region. A structured archive of the elicited narratives will open the data to ethnographic study as well as comparative and typological linguistic analysis.

In order to tell the story of each activity most effectively, each video is planned before shooting in consultation with local experts, breaking down each activity to its most important elements. Use of a tripod and close and careful framing of shots avoids the distracting shakiness found in too many videos associated with language documentation. Background audio is recorded using a digital audio recorder. After shooting, the clips are edited into a coherent video story, with an ideal length of

⁸ Discovery Project 110100662

between three to eight minutes (the length will vary according to the complexity of the activity). The resulting edited videos are encoded for high-definition viewing on computers, on tablets such as the iPad, and on smartphones. They are also available on the internet via video-sharing sites YouTube and Vimeo, freely available for viewing by language community members or other interested members of the public, or for use by other researchers.

Once the videos are prepared, and starting with the language of the area where the video was shot, narrations are recorded by showing speakers the video and asking them to explain in their language what steps are involved in carrying out the activity. This can be recorded in a quiet place using good quality microphones and digital recorders, avoiding the problems inherent in gathering good quality audio on location. If desired the narration process may also be video recorded (depending on the needs of the researcher) and both video streams may be viewed using annotation software such as ELAN (as seen in Figure 1).

I believe this stimulus model has numerous advantages over many of those in current use:

- The videos are inherently culturally relevant and recognisable (unlike e.g. the MPI videos which tend to feature Northern Europeans slicing bread and the like).
- The videos contain entire processes rather than single activities, so they will be a rich source of data about event representation and the semantics of activities and processes. By editing the videos in different ways (by leaving out a step, or putting things in the wrong order, or editing in something surprising or odd) it will be possible to test hypotheses about event semantics.
- Each video will feature a different set of included sub-processes, allowing the collection of a wide range of vocabulary. For example, the Toratán narration for the palm-sugar video contains the following types of verbs: walk, climb (a tree), carry (on shoulder), carry (in hand), raise, lower, chop, slice, carve, bend, attach, trickle, pour, light a fire, burn, boil, boil over, scoop, taste, set, leak, smash, blow, tip out, collect, sell.

The model is designed to be expandable. Recording one speaker from one language should give us the relevant vocabulary. Recording two will enrich the data. Recording multiple speakers gives the possibility for various types of analysis: comparing data from men and women, adults and children, different class/caste backgrounds, and obviously dialect variation. Beyond that, where the activity is carried out in different language areas, narrations may be recorded in those languages. Although generally the video segments will only show one way of doing things, this need not be a liability, as it will encourage people from other areas to explain in what ways the local practice differs.

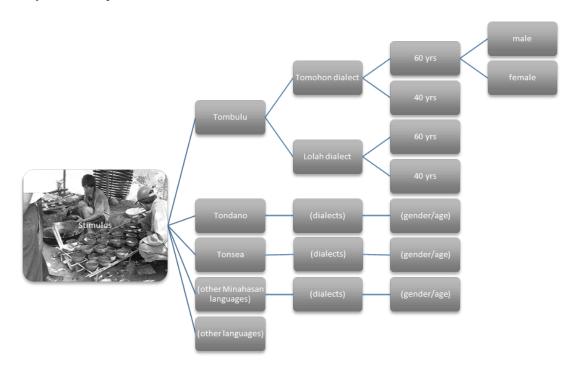


Figure 3: A potential pilot workflow for Minahasan languages, starting from Tombulu

The elicited narrations will be archived as part of a coherent database of ethnocultural procedural texts, fully transcribed and translated. Ideally, if the videos are found to be of use to sufficient numbers of researchers there will be momentum for teams to create or commission further videos of activities relevant to their own fieldwork areas, and also make them freely available by adding them to the repository themselves. As an aside, these videos are interesting to watch in their own right as they show traditional economic and cultural activities of Indonesia, often of great visual appeal, and narrated in the authentic languages of the region. An increasingly important segment of tourism aims at tourists who seek to understand more about the traditional cultures of indigenous people and the environments in which they live. In Sulawesi where I have conducted fieldwork there is a strong local desire to increase tourism, and also a desire to do this with sensitivity to local peoples and the environment. Sensitive use of these videos as promotional material for local tourism organisations or collectives, with narrations in the authentic languages of the area (subtitled in English, Japanese, or whatever language is relevant for the market) could help to attract the 'right' kind of tourist. Furthermore, while tourists are often interested in seeing local activities, in general it is not practical to take groups of tourists into the relatively remote areas where many of these activities take place (for example into the forests where palm sugar products are made). Some activities are rather time consuming and it would not be feasible to have tourists stay to see the process from beginning to end.

5. A case study: 'Water', or sago grubs

A video showing the collection and preparation of sago grubs from the fallen trunks of sugar palms was filmed in May 2011 in and around the village of Lolah, about 20 kilometres from the north coast near the slopes of the active volcano Mt Lokon. Footage was taken with a Panasonic HDC-SD900 camcorder and a Canon EOS 550D (a digital SLR) in 1080p resolution at 50 and 30 frames per second respectively. A tripod was used where possible, however, some of the muddy and uneven terrain made this impractical. For hand-held shots the superior image stabilisation of the SD900 made footage from this camera preferable⁹.

About 24 minutes of footage was recorded, and this was edited down to four minutes using iMovie upon my return to Melbourne¹⁰. The edited video was posted on

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Other video recorded at the time shows preparation for tapping a palm, distilling the local strong liquor cap tikus, and making palm fibre brooms. These videos will be completed and made available as time permits.

¹⁰ Earlier videos had been edited in Final Cut Pro, but it was judged that the easier program iMovie was sufficiently powerful for the relatively simple editing tasks needed. It would be preferable to do this editing in the field, but lack of time meant that this was not possible on this occasion. Note that most video cameras come bundled with software which will allow simple editing to be performed on a PC

Vimeo so that the local researcher Hendrik Paat was able to view it and record his narration in the Tombulu language and email the file to me. This narration was then transcribed in ELAN, and it and the translations into Indonesian and English were exported as SRT subtitle files. The video, narration, and subtitle files were then combined using Handbrake while producing M4V files of various resolutions, suitable for HD viewing on a large monitor (Figure 4, Figure 5), on a tablet computer (iPad), and on a phone display. Files were also uploaded to the video sharing services Vimeo and YouTube¹¹—however, only the latter was able to cope with choosing and switching between the three languages available as subtitles (Tombulu, Indonesian and English, see Figure 6).

Narrations have since been collected for Tonsea and Tondano languages, however, this has posed a technical challenge, in that at this time only dedicated media playing programs such as VLC¹² or Boxee¹³ allow the viewer to select among audio streams (in this case choosing among Tombulu, Tonsea and Tondano as the language of narration). This means that interested viewers will need to download the entire (large) video, whereas it is clear that for optimal delivery to both researchers and lay users, the videos need to be available for streaming online. As it is not yet possible to switch between languages when using online delivery services such as YouTube, each new narration requires posting the video again. However, the new HTML5 specification does appear to allow for the possibility of multiple audio streams, suggesting that a dedicated online player could be developed without too much difficulty. This will require specialised development, but once developed will have multiple applications for researchers planning similar projects¹⁴.

and exported to another format, but they tend to be severely limited and it may be preferable to opt directly for a semi-pro package (at minimum) such as Adobe Premiere Elements.

http://www.youtube.com/watch?v=wVy2QsFqdYI

¹² http://www.videolan.org/vlc/

¹³ http://www.boxee.tv/

¹⁴ Researchers from Academia Sinica (Taiwan) and Nanyang Technological University (Singapore) have shown interest in this model of ethnolinguistic documentation in their respective fieldsites of Taiwan and India. Note that a similar technique of purpose built cultural documentaries with narrations has been described by Yamada (2007) with *The Cassava Film*—however, that was intended for use in one language community in Surinam, and (to my knowledge) has not yet been made widely available.



Figure 4: Tombulu subtitle (explaining that children as a game sometimes attach threads to the beetles which are the grubs' adult form).



Figure 5: English subtitle.



Figure 6: YouTube screenshot showing subtitle language selection with Indonesian subtitle.

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