

Using Mixed Media Tools for Eliciting Discourse in Indigenous Languages

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Prosody plays a vital role in communication, but is one of the most widely neglected topics in language documentation. This omission is doubly detrimental since intonation is unrecoverable from transcribed texts, the most prevalent data sources for many indigenous languages. One of the underlying reasons for the dearth of prosodic data is methodological. Modern technology has removed technical barriers to recording the appropriate data, but traditional methods of elicitation still inhibit accurate documentation of linguistic structures at or above the phrasal level. In addition, these methods do not facilitate the mobilization of linguistic documentation. In this paper, we present techniques that we have developed that address both these concerns: 1) eliciting prosodic data for theoretical analysis, and 2) producing linguistic materials that can be useful for educators and curriculum developers. Highlighting advantages and disadvantages, we compare traditional elicitation and text-gathering methods with two non-traditional methodologies using non-verbal stimuli. These two non-traditional methodologies are aimed at collecting: 1) spontaneous conversation (either unguided, or task-oriented), and 2) partly scripted conversation (aided by multimedia tools). The methodologies are illustrated with original fieldwork on focus and intonation in two related, endangered Interior Salish languages – Nl̓he7kepmxcín (Thompson) and St'át'imcets (Lillooet).

1. INTRODUCTION. Higher-level discourse features such as focus and intonation in indigenous languages have previously been overlooked as fields of research (Himmelmann 2006), but this has recently begun to be redressed (see Steinhauer 1994 for an early call to the importance of studying intonation and usage in fieldwork contexts; also Barthmaier 2004; Beck & Bennett 2007; Benner 2006; Caldecott 2009; Gordon 1999, 2003, 2004, 2007; Gordon & Luna 2004; Jacobs 2007; Koch 2008; Leonard 2011; Noguchi 2011). These topics are nevertheless still relatively understudied. One of the reasons for this is that collecting the relevant language data in a natural way is not straightforward when relying on two of the most commonly used traditional methodologies: (i) targeted single sentence elicitation, and (ii) collection of longer texts like storytelling (e.g. Fenton 2010; Willis 2009). Single sentence elicitation is often divorced from a broader discourse context, making it hard to recover the relevant discourse features for analysis (e.g. Lovick 2010; but see Matthewson 2004 on ways to provide appropriate contexts). While longer oral texts can provide the necessary contextual information, speakers may not be natural storytellers and may feel uncomfortable producing texts on request, without contextual support. The

problem is particularly acute in endangered language situations, where a paucity of fluent speakers means that it may not be possible to find a willing language consultant who is a natural storyteller. Moreover, traditional texts often involve a single speaker, whereas much theoretical work on focus and intonation is based on (or includes) conversational discourse involving two or more speakers (e.g. Chafe 1976; Rochemont 1986; von Stechow 1990; Krifka 1992, 2006, 2007; Selkirk 1995; Büring 2006; Féry & Samek-Lodovici 2006; Beaver & Clark 2008, and many others).

Our primary goal in this paper, therefore, is to facilitate the collection of conversational data for prosodic analysis in an endangered language fieldwork setting, by presenting strategies for providing contextual support¹. In the projects we describe here, our main aim was to collect, analyze and document previously uninvestigated aspects of two Salishan languages we worked with. In addition, we had a secondary empirical goal, namely that not just the results, but also the materials developed in the language documentation process, be useful to the community. The communities we work with have limited language teaching materials, so our focus was to create engaging, straightforwardly deliverable resources. In this way, we were striving to realize some of the goals of community-based research within the traditional research paradigm. We hope to show that elicitation materials designed for theoretical analysis, and not just those designed for language revitalization, can be useful and accessible to non-linguists.

In this paper we present and evaluate two types of non-traditional methodologies that we have successfully used to elicit conversations in two indigenous languages of Western Canada. Non-traditional methodologies, as we define them, make use of non-verbal stimuli to generate discourse. We discuss how the materials can be quickly and easily converted to language curriculum materials. We also discuss how these techniques address some of the challenges of eliciting conversation in endangered languages, namely a limited number of speakers, mostly elderly, and the role of the non-fluent elicitor. In doing so, we hope to open discussion on other successful methodologies, and ways to improve methodologies that have not been successful. We hope that laying out these techniques will make it easier for field linguists to mobilize their elicitation materials and results, by having concrete examples to discuss with community members early in the project planning process.

The layout of the paper is as follows. In §2, we provide some background information on the fieldwork context in which we have been working, as well as recent methodological developments in indigenous language fieldwork in the Pacific Northwest. §3 discusses some limitations of traditional methods of language elicitation for linguists and educators interested in discourse level phenomena like focus marking and intonation. Next, we present and evaluate examples of elicitation methodologies that we have employed in order to elicit discourse level data. In §4, we discuss methods aimed at producing spontaneous conversation, either unguided, or task-oriented. §5 discusses methodologies for eliciting partly scripted conversation. §6 concludes.

¹ This research would not be possible without the patience and generosity of our Elder consultants: Laura Thevarg, Aggie Patrick and Carl Alexander for St'át'imcets, and Flora Ehrhardt and Patricia McKay for Nl̓he7kepmxc̓ín. Our work grew out of discussions with Strang Burton, Henry Davis and Lisa Matthewson. This work is funded by grants from the Social Sciences and Humanities Research Council of Canada and the Jacobs Research Fund (Whatcom Museum, Bellingham, Washington). Any errors are our own.

2. BACKGROUND. The methodologies presented in this paper derive from our attempts to record discourse in two First Nations² languages of Western Canada. In this section, we discuss the fieldwork context in which we have been working, our goals, and why it is timely to consider a review of our techniques.

2.1 THE FIELDWORK SETTING. The two languages on which we have been working are Nl̓he7kepmxcín (aka Thompson River Salish) and St'át'imcets (aka Lillooet Salish). These neighbouring languages both belong to the Northern Interior branch of the Salishan language family (for overviews see Czaykowska-Higgins & Kinkade 1998; Davis & Matthewson 2009; Kinkade 1992; Kroeber 1999; Thompson & Thompson 1992; van Eijk 1997), and are spoken in southwestern British Columbia, Canada. According to the Report on the Status of B.C. First Nations Languages (FPCC 2010:23), Nl̓he7kepmxcín has some 151 fluent speakers along the Thompson and Fraser Rivers, and Merritt plateau, and is considered 'nearly extinct.' St'át'imcets is spoken near Lillooet, Mt. Currie, and north of Harrison Lake. It comprises two principal dialects: Northern and Southern. At approximately 173 fluent speakers, the language is considered severely endangered (FPCC 2010:23). As in many First Nations communities, most fluent speakers are over 65 years of age.

In terms of language curriculum materials, of the sixteen Nl̓he7kepmxcín communities that responded to the needs assessment survey in the report, three reported having recordings of the language and four reported having language curriculum materials (FPCC 2010: Table 20). The webpage for identified resources by the Nl̓he7kepmxcín community (<http://maps.fphlcc.ca/node/156/resources>) lists approximately 60 resources, including dictionaries, grammars, audio/visual recordings and language curriculum materials. The community-identified language resources for St'át'imcets has 78 entries, including dictionaries, grammars, audio/visual recordings and language curriculum materials (<http://maps.fphlcc.ca/node/270/resources> & <http://www.uslces.org/publications01.html>).

This scarcity of resources was one motivation for developing elicitation materials that could be easily transitioned to language teaching materials. For example, one of the authors co-taught a St'át'imcets language class for one dialect of the language. This community had no language materials of its own. A matching game similar to one described in §5.2 formed part of the emerging curriculum that was developed. Given the advanced age of the majority of fluent speakers, materials that engage younger language learners are particularly desirable. As such, the multi-media nature of the materials is particularly suitable for both community goals and our theoretical goals.

2.2 GOALS AND THEIR RELATIONSHIP TO METHODOLOGY. The theoretical purpose of our fieldwork was to record fluent conversation, in order to record and analyse previously undocumented prosodic and discourse properties of Nl̓he7kepmxcín and St'át'imcets. These included intonation contours of questions and declaratives, the effect of prosodic groupings on phonetics, and the prosodic/syntactic marking of discourse categories like topic, focus, and background. At the same time, our major empirical goal was to address

² Aboriginal peoples of Canada comprise three indigenous groups, the Inuit, Métis, and First Nations. The Salishan languages discussed in this paper are First Nations languages. In the United States, the term Native American is typically used.

the dearth of conversational recordings of local endangered indigenous languages. Our secondary empirical goal was to see if we could make linguistic materials more relevant and accessible to language communities.

As discussed in Leonard & Hanes (2010), the requirements of academia and responsibilities to the community can be in conflict. We developed our methodologies in an attempt to satisfy both the academic need to be productive and our responsibility to give back to the community. There is growing recognition that endangered language research should not just be *about* the language of study, but also *for* and *with* the language community (see e.g. Czaykowska-Higgins 2009; Grinevald 2003; Nathan & Csató 2006; Rice 2006). While our research was still elicited in the traditional research paradigm, our goal was to move towards community-based research by focusing on mobilization. Nathan (2006) gives one definition of mobilization as the “timely provision of effective language resources in order to encourage and support language strengthening” (2006:365). As such, mobilization forms the ‘delivered to’ part of the framework of community-based research. Our methodologies created materials that successfully elicit linguistic data suitable for rigorous theoretical analysis, but that can also be quickly and straightforwardly delivered to communities who desire such teaching materials. As a result, both the academic and community goals can be satisfied by developing one set of materials. Though our experience using these materials in the communities is limited, and is not the main subject of this paper, we hope that our techniques act as a guide while refining best practices for linguists as we work towards truly collaborative research³.

To accomplish our theoretical and empirical goals, we experimented with various methodologies, using mixed media tools to help generate conversational data. These tools (to be discussed in §4 and 5), varied from photographs to board games to computer animations. Our own methodological work in this area has developed over the last seven years.

To be sure, linguists have been challenging traditional data gathering techniques for some time, and we briefly review some major landmarks here. As an anonymous reviewer points out, some of our methodology (see §4.1) can be seen as rooted in Labov’s work in enabling narratives by having speakers talk about major events in their lives (Labov and Waletzky 1967), work that has continued to develop since then (Labov 2006, 2011).

Other important developments in the use of non-verbal stimuli for language elicitation include the Map Task (Brown et al. 1984), in which speakers must cooperate through dialogue in order to replicate a route on a map given to the second speaker, based on the route shown on a map that the first speaker has. Use of the Map Task resulted in a large corpus of 128 dialogues available for linguistic and other research (Anderson et al. 1991), plus much data in other languages (e.g. for German, the Hamburg MapTask Corpus; Schmidt et al. 2010). We ourselves employed a version of the Map Task in a novel task designed to elicit echo questions by providing deliberately unclear directions (§5.2).

In a similar vein, the Frog Story (Mayer 1969) is a wordless picture book that has been used to gather linguistic data across a wide variety of languages, largely for language acquisition studies (e.g. Bamberg 1987, Berman & Slobin 1994). In a similar vein, Chafe (1980) developed the Pear Story, a film with sounds effects but no dialogue or narration, which has been used to elicit language samples from a wide variety of languages as well,

³ A reviewer kindly pointed us towards Leonard & Hanes (2010) and Whaley (2011) for discussion of the complex and incredibly important issues of true collaboration in community-based research.

including the indigenous Guatemalan languages Quiché and Sacapultec Mayan (Du Bois 1980, 2006). We used similar storyboarding techniques (described in §4.3), but also developed culturally specific materials, for example to reflect very specific childhood stories of the language consultants with whom we work.

Over the past two decades, the Language and Cognition group at the Max Planck Institute (Nijmegen) has developed a wealth of fieldwork manuals and materials comprising what we would refer to as both ‘traditional’ and ‘non-traditional’ methods. Manuals include questionnaires on various aspects of language use (e.g. Wilkins 1999 on motion lexicalization) and overviews of how to go about investigating a particular topic (e.g. Enfield 2007 on how to investigate repair strategies in discourse; Enfield et al. 2011 on building corpora of spontaneous speech). These manuals include stimuli such as word lists and target sentences for translation, which we classify as ‘traditional’ elicitation, and are thus a technique we were moving away from. Non-traditional methods, which we define as using non-verbal stimuli, are included as part of some manuals, such as the video clips made available in the Put project (Bowerman et al. 2004).

The Questionnaire on Information Structure (QUIS) Reference Manual (Skopeteas et al. 2007) is a recent fieldwork tool developed to gather similar data to the sort of discourse level language samples that we too were gathering at a similar time period. The QUIS also provides non-verbal stimuli, though these may not always be culturally relevant for all communities (e.g. picture stimuli involving lions are not relevant for our own fieldwork context).

Finally, since the time when we started becoming engaged in methodological work, there has been a continued and growing interest in novel methodological tools among language researchers who are investigating discourse level phenomena in the Pacific Northwest specifically. This methodological experimentation is beginning to come to fruition, culminating in a flurry of different mixed media elicitation tools that are now starting to be reported on or made generally available (e.g. Burton 2005; Burton & Matthewson 2011; Lyon 2011; Sardinha 2011a, 2011b; Totem Fields Storyboards 2013).

In this context, we feel that it is timely to present a review of various language elicitation methodologies that worked for us, and foster an honest evaluation of their pros and cons. We hope that this will lead to continued refinement and improvement of elicitation tools for all fieldworkers studying endangered indigenous languages around the world.

2.3 TIMELINESS: PAUCITY OF SPONTANEOUS CONVERSATIONAL SPEECH DATA.

When we set ourselves the goal of investigating discourse level phenomena in Salishan languages, we encountered a problem: there was very little existing data available. Traditional grammars (e.g. Thompson & Thompson 1992; van Eijk 1997) tend to concentrate on phonological, morphological and syntactic description at the sentence level and below. Moreover, where intonation is mentioned, it is impressionistic rather than instrumental, and audio recordings for phonetic intonational analysis are not generally available. With the explosion of affordable, portable recording devices and free sound editing and analysis software (e.g. Audacity, Praat, ELAN, etc.), linguists now have the ability to record and analyze conversations, a form of data that has thus far been severely underrepresented in the documentation of indigenous languages in Canada (but see Egesdal et al. 2011 for some examples). Digital recorders are ever shrinking, in size and price, making them ideal for

unobtrusive recording of natural, spontaneous language use. Digital recordings have additional advantages of having almost no cost associated with their copy and distribution, and can be transferred immediately to editing and analysis software while still in the field.

Such data are desirable not only for examining previously undocumented properties of the languages, but also for use in language curriculum materials and revitalization projects. There has been growing recognition among field linguists that more traditional methods of gathering and presenting collected linguistic data (e.g. in traditional grammars or academic research articles) may have limited relevance for language communities (see Rice 2006, Czaykowska-Higgins 2009, on indigenous Canadian communities specifically). Without theoretical linguistic training, the presentation of these materials can be inaccessible to indigenous community members, and require considerable modification before being usable by educators and curriculum developers (but see Davis 2006 for an excellent recent example).

An important secondary contribution of the present paper is to show how mixed media tools can be built into the elicitation of data for theoretical analysis itself, and thereby facilitate the mobilization of materials to communities. Because the gathered data are already linked to a mixed media tool, they have an immediate relevance to educators. Both the mixed-media methodologies and the resulting conversational data can be rapidly transferred for use by educators and curriculum developers.

The incorporation of conversational materials into the language classroom has been shown to have educational benefits. Previous studies suggest that understanding and using dialogues like those recorded in our fieldwork may be correlated with improved language retention by language learners (Collette 2005); in turn, better indigenous language learning in indigenous communities is linked to improved health and education outcomes (Kirmayer et al. 2000; Hornberger 2006; NCCAH 2009). Finally, there has been widespread recognition that multimedia language tools can be useful for language revitalization (e.g. Csató & Nathan 2004; Gearheard 2005; Nathan & Csató 2006; Boechler et al. 2012).

3. TRADITIONAL VS. NON-TRADITIONAL (NON-VERBAL STIMULI BASED) METHODS. Keeping in mind the goals and fieldwork context discussed in the previous sections, we now consider the limitations of traditional language elicitation methodologies. By traditional elicitation techniques, we refer to single utterance elicitation (including read lists), and single speaker texts (typically traditional stories). In this section, we discuss some of the shortcomings of each of these techniques as we have encountered them. This discussion will enable us in the next section to contrast these methods with our non-traditional methods, using non-verbal stimuli, designed to elicit both: (i) spontaneous conversation, and (ii) partly scripted conversational responses to slide shows and animation.

3.1 LIMITATIONS OF TRADITIONAL METHODS FOR DISCOURSE LEVEL DATA. Recall that our theoretical linguistic goals included recording discourse level data for phonetic-phonological and morphosyntactic analysis. Individual utterances extracted from conversational data are part of a broader linguistic and situational context, and can thus form the basis for analysis of discourse level phenomena. On the other hand, traditional single sentence elicitations, which are often used for phonetic analysis because they allow careful control of phonetic context, do not transparently furnish discourse level data.

Single sentence translations such as *Tsut sDaryn X inátcwas* ‘Daryn said X yesterday’ (Bird et al. 2008) are ideal for novice and non-fluent elicitors, as the relevant components are easily assembled from existing dictionaries or grammars, and then quickly checked with speakers. The elicitor, moreover, has close control over lexical items and the grammatical structures in which they appear. However, it is unclear to what extent the resulting data are representative of ‘natural’ conversational speech (for discussion on how it may or may not differ, see Lickley et al. 2005; Klatt 1976). Such short elicitation pieces may not be long enough to observe higher-level prosodic effects (e.g. see Beck & Bennett 2007 on ‘paragraph’ intonation). Moreover, it is unclear what context the language consultant may be imagining, making it hard to control for discourse phenomena like topic, focus or background.

Even somewhat more natural elicitation, such as asking consultants *Can you use ‘x’ in a sentence?*, is not ideal. Such questions can put the speaker on the spot, and still do not provide a context in which speakers can situate their language (see Matthewson 2004 on the importance of context for semantic research, and possible ways of controlling for context). In addition, the definition of a sentence may not be uncontroversial, which can lead to confusion over what the elicitor is asking for. It is also not particularly useful when one is trying to control for prosodic effects such as position, or rising versus falling intonation. The way the request is phrased by the elicitor may interfere with how the speaker produces the utterance, by introducing unintended pragmatic effects that may affect intonation, word order, morphology, and so on. The resulting data are also of limited direct use in the classroom.

The second traditional method is to record a single speaker telling a traditional story. While this method results in a large, continuous source of spoken data, suitable for discourse level analysis, there are also limitations. First, as will be discussed in §3.2, not every speaker is a storyteller. Moreover, not every speaker knows or is permitted to tell traditional stories (in this case, non-traditional stories may be an ideal way to elicit long passages of spontaneous, informal speech, provided speakers are prompted in some way, as we will discuss in §4.3).

Second, it is also not clear how formal texts and stories differ from natural conversation in terms of the particular features we were interested in (see Caldecott & Czaykowska-Higgins 2012 for a discussion). In particular, much current theoretical work on discourse level phenomena is based on the analysis of conversation rather than single speaker texts: for example, the answer to a wh-question is considered a classic diagnostic for the discourse category of presentational focus (e.g. Halliday 1967; Jackendoff 1972; Selkirk 1995; Büring 2006). Therefore, in order to make our research comparable with existing literature, it was important that we also look at conversational data.

3.2 LIMITATIONS OF TRADITIONAL METHODS FOR ELDERLY SPEAKERS OF ENDANGERED LANGUAGES. Working with elders of First Nations communities often means that traditional methodologies, especially those used in phonetic research, are impractical. Traditional methods of recording phonetic data involve speakers in sound booths reading from lists, or putting target words into a sentence frame such as that mentioned above. Such elicitation methodology is often not suitable for elders. They may not be mobile enough to travel to universities to be recorded, may struggle with their eyesight, or may choose not to

read the orthography adopted by the community. And, as Himmelmann points out, “reading intonation differs significantly from conversational intonation” (2006:177).

In strictly oral language contexts, gathering identical data across multiple speakers is made more difficult because linguists cannot rely on written material to prompt speakers (see Evans et al. 2010 for a recent example). In addition to having speakers propose their own frame sentences that they are comfortable with (but which still control for certain parameters), asking speakers to translate from English may be an alternative to reading; however, asking a speaker to translate from the ambient language on the fly is a complex cognitive task, and it is unclear how this affects fluency (see §5.1.2 for some discussion). Nevertheless, we have found that modifying the experimental methodology in the ways discussed throughout this paper can yield excellent data for linguistic analysis.

The development of affordable, portable recording equipment has permitted researchers, for some time now, to gather high quality recordings in the field, partially addressing potential problems with elder mobility. That is, the sound booth can be brought to the language speakers, rather than the other way around. Even so, when recording conversational and prosodic data, it is ideal to work with multiple speakers at the same time (Himmelmann 2006). Given the tragically small number of speakers and their advanced ages, it can be difficult to get two conversation partners in the same room. As such, our methodologies needed to be flexible enough to permit the elicitor to play the role of one conversation partner in such cases. Traditional methodologies do not permit such flexibility.

Gathering the traditional single speaker stories avoids problems with getting two elderly speakers in the same location, but the applicability of this technique is also suffering as indigenous languages become increasingly endangered. In the past, the traditional method of gathering longer texts in indigenous language research has been to record single speakers telling a story, often a traditional one. This also has its drawbacks. Not every speaker is comfortable telling stories, perhaps because they are not storytellers, or perhaps because they do not know traditional stories. As the number of fluent speakers has dropped to critical levels, the opportunities for frequent use of the language in the community have also severely diminished; and in turn, this diminished use has led to a situation where few remaining speakers may know traditional stories well enough to tell them completely. Our own experience has been one in which the older generation that furnished the speakers for traditional storytelling texts (e.g. Egesdal et al. 2011) has dwindled, though this is not true for all indigenous communities (see Seymour 2009).

On the other hand, fluent speakers in endangered language communities are readily able to generate long discourses in the form of everyday conversations. They may, however, be reluctant to simply start speaking when a recording device is present. Though we tried to keep language recording sessions as informal as possible, the presence of a recorder has an inhibiting effect. This is a very natural response to a request to ‘start talking’ (and similar to one many of us have experienced when asked to ‘act natural’ for a photographer—we find it very hard to do when asked). A typical recording session would look something like this: as we were setting up our recorder, the language consultants would be chatting away with each other, but once we were ready to press record, they would stop talking and ask something like, “Well, what should we talk about?” Thus, it was clear that there was room for the field linguist to design elicitation sessions that made it easier and more natural for language consultants to generate conversational data. As a result, we were

pushed to experiment with different methods of language elicitation, falling into two general categories: (i) spontaneous conversation, and (ii) partly scripted conversation. Both are discussed and evaluated below:

4. SPONTANEOUS CONVERSATION. Presented below are three methodologies that allowed us to record spontaneous conversation: guided conversation, task-oriented conversation, and storyboarding.

4.1 GUIDED CONVERSATION. We developed two types of guided spontaneous conversation strategies. Our first attempts simply provided general topics that the speakers could discuss, such as the weather, what they did on the weekend, remembering how they met or pretending to call each other to ask about a recipe. As an anonymous reviewer points out, this was in line with more traditional ways of gathering longer texts (it was not supported by non-verbal stimuli), in the spirit of Labov and Waletzky (1967). Thus, perhaps unsurprisingly, this loosely guided conversation did not work as well as was hoped. To be most effective, this type of prompted conversation requires speakers to know each other fairly well, but not so well that they have already had the prompted conversation. In communities with a small number of fluent speakers, people will often know each other well, and our speakers had generally discussed these topics with each other before our recording sessions. Thus, it made for awkward, stilted, and short conversation. Moreover, personal conversations sometimes raise personal topics that are not to be shared with the community, and are thus not suitable for recording or curriculum materials. For these reasons, we shifted to a more strictly guided approach in order to generate spontaneous conversation.

In our more strictly guided approach, we included non-verbal stimuli: speakers were asked to talk about what was going on in a series of photographs presented to them. This overcame the problems we encountered with more personal conversations: speakers had not talked about these photographs before, so they produced natural conversations, and the topic of the photographs did not touch on any private issues.

The following example is an excerpt from a short Nl̥he7kepmxcín conversation.⁴ Speakers were talking about a series of photos in which a boy caught a trout:

⁴ Nl̥he7kepmxcín data are presented in the orthography developed in Thompson & Thompson (1992, 1996), and Kroeber (1997). Acute accent ´ on vowels indicates word-level stress. The key to the orthography is as follows; symbols not listed have the standard IPA interpretation: *c* = [tʃ], *ç* = [ts], *c'* = [tsʰ], *e* = [e, æ, a, ə, ε], *ə* = [ʌ], *i* = [i, ei, ai], *o* = [o, ɔ], *s* = [ʃ], *s* = [s], *u* = [u, o, ɔ], *x* = [χ], *y* = [j, i]. See Thompson and Thompson (1992) in particular for the phonetic realizations of phonemic vowels across contexts.

(1) Spontaneous conversation describing pictures of a boy catching a trout (excerpt).

- A: k'ətním' e=twíw't. 1
 rodfish.MDL DET=boy⁵
 'The boy is fishing.'
- B: k'u-k'ətním'. k'ətním' wé?e. 2
 RED-rodfish.MDL. rodfish.MDL there
 'He's fishing. He's fishing there.'
- ó, kʷənwéɬn te=swéw'ɬ. kʷənwéɬn te=swéw'ɬ. 3
 oh, grasp.NCM OBL=trout. grasp.NCM OBL=trout
 'Oh, he caught a trout. He caught a trout.'
- A: swéw'ɬ=n' xé?e. 4
 trout=Q DEM
 'Is it a trout?'
- B: mmm! sésy'e? e=s-kʷənwéɬn-s te=swéw'ɬ. [laugh] 5
 Mmm! two[Dim] DET=NMLZ-grasp.NCM-3SG.POSS OBL=trout
 'Mmm (yes)! He caught TWO trout.'
- A: ti-cút-m-s né? e=s-kʷənwéɬn-s. 6
 proud-REFL-REL-3OBJ.3SBJ there DET=NMLZ-grasp.NCM-3SG.POSS
 'He's proud of what he caught there.'
- B: ti-cút. [laughs] 7
 proud-REFL
 'He's proud.'
- A: ti-cút. he?áy. 8
 proud-REFL. yes
 'He's proud. Yes.'

4.1.1 PROS. Choosing the pictures and their content gives the researcher some control over the lexical items that are likely to be produced during this task. The conversation that resulted from guided tasks was completely natural and resulted in large, useful data sets. This was an easy and enjoyable task for speakers and produced a modest conversational corpus that, due to its rich content and structure, is also valuable for other researchers. The conversational form meant that there was a wide variety of data for analysis, even in short stretches of conversation like that shown in (1). For example, this conversation excerpt contains opportunities to study the intonation and morphosyntax of topic tracking ('the boy' in line 1, and its subsequent expression), focus marking (e.g. 'TWO trout' in line 5), yes-no questions (line 4), discourse-driven shifts in transitivity (compare the verb 'proud' in lines 6-7), and reduplication (compare the verb 'rodfish' in lines 1-2), among other phenomena.

⁵ The following abbreviations are not found in the standard Leipzig list of gloss abbreviations: '- ' = affix, '= ' = clitic, AUT = autonomous (intransitive suffix), CLEFT = cleft predicate, CNSQ = consequential (contrary to expectation), CPD = compound, DIM = diminutive, DIR = directive (transitive suffix), EMPH = emphatic, EVID = evidential, EXIS = existence, INCH = inchoative, MDL = middle (intransitive suffix), NCM = non-control middle, RED = reduplicant, REL = relational (transitive suffix), STAT = stative, WH = wh-expression.

In addition, such conversational texts are extremely useful for language learners and educators: there is a clear context (a series of photographs), and a contained task (discussion of the photographs). The recorded language data together with the photographs can therefore be rapidly converted into a self-contained language lesson. Depending on the subject matter, this type of activity can be adapted for a variety of vocabulary and structural lessons, simply by varying the content of the photographs.

4.1.2 CONS. We will present cons in two categories: inherent drawbacks of each technique, and additional considerations that may vary with the fieldwork context.⁶

The guided conversation technique that we used has a number of inherent drawbacks. First, the theoretical linguistic data is less targeted than in single sentence elicitation tasks. Moreover, the elicitor has little control over the resulting data (beyond the use of certain vocabulary items shown in the images). In terms of analysis, real speech is difficult to transcribe and analyse, so it requires considerable linguistic training in the language of study, and is time-consuming to transcribe even for a semi-fluent linguist.

There are additional drawbacks that may arise in specific fieldwork contexts. First, this technique requires two fluent and mobile speakers, and this may be problematic in some endangered language communities. Secondly, since we are working with visual stimuli, elder speakers need to have good enough eyesight to study the materials. This consideration applies as a con to all of the methodologies that we discuss in the remainder of the paper, and will thus not be mentioned specifically in each Con section below. Finally, if intending to convert the pictures and collected sound data into educational material, elicitors need to consider copyright of the images used. If the images are used simply as a tool to collect audio recordings, with no intent to publish them, then suitable images can be easily found on the internet with search engines such as Google Images. On the other hand, if the images are intended for later use in educational material or perhaps in research publications, linguists will need to create their own photographs or use images from a royalty free source. Both of these latter options are fairly inexpensive and straightforward, so copyright should not pose a serious obstacle here, but it may require additional time to assemble suitable materials.

4.2 TASK ORIENTED CONVERSATION. Task oriented conversation has been used as a technique in much experimental work in non-indigenous languages. In this methodology, speakers are given a task to do, usually some sort of game or problem that requires asking each other questions to successfully achieve a goal. A well-known example is the Map Task (e.g. Anderson et al. 1991; Lickley et al. 2005; Queen 2001), in which one speaker has a map hidden from the second speaker; the second speaker must then ask questions in order to correctly place objects or draw a route onto their own version of the map. One attempt at applying this task with a hand-drawn map is discussed in §5.2.

Another example of task-oriented conversation is the well-known children's game 20 Questions. One speaker thinks of some object (for example, an animal), and the second speaker must ask yes/no questions to determine what animal the first speaker has in mind (e.g. "Is it a mammal? Does it eat meat?" etc.). The objective is to guess the correct object

⁶ We thank an anonymous reviewer for offering this suggestion and helping clarify our discussion.

with as few questions as possible, and no more than 20. Since we were interested in having more control over the context and lexical items used, we used a commercially available version of this game called Guess Who™ to generate yes/no question-answer pairs. In this game, Player 1 has a series of cards depicting the heads of different people, and they select one of these cards. Player 2 has an identical set of cards, and must guess which person card their opponent has selected by asking yes/no questions like “Is it a man? Is he wearing a hat? Does he have brown hair?” and so on.

The following is an example of yes/no questions generated by having speakers of Nlhe7kepmxcín play the Guess Who™ game. The data reveal two syntactic strategies for forming yes/no questions, either through the use of a second position clitic *n'* (lines 1, 3, 9), or through the use of an embedding predicate *ke?* ‘is it the case that’ (lines 5, 7), which takes a nominalized clause as its complement.

(2) Yes/no questions during task-oriented dialogue (playing a guessing game).

- | | | |
|----|--|----|
| A: | ʔes-típtept-ʔ-qín=n'=wiʔ=xé? tk=smútec. | 1 |
| | STAT-black-CPD-hair=Q=EMPH=DEM OBL.IRR=woman | |
| | ‘Does the woman have dark hair?’ | |
| B: | heʔáy. | 2 |
| | yes | |
| | ‘Yes.’ | |
| A: | smútec=n' xéʔe. | 3 |
| | woman=Q DEM | |
| | ‘Is it a woman?’ | |
| B: | tetéʔe. | 4 |
| | NEG | |
| | ‘No.’ | |
| A: | ké? k=es-n-ʔx ^w -ús-tn=s. | 5 |
| | is.it.the.case COMP=NMLZ.have-LOC-encircle-face-INS=3SG.POSS | |
| | ‘Does he have glasses?’ | |
| B: | tetéʔe. | 6 |
| | NEG | |
| | ‘No.’ | |
| A: | ké? k=es-ceq ^w -qín=s xéʔe. | 7 |
| | is.it.the.case COMP=NMLZ.STAT-red-hair=3SG.POSS DEM | |
| | ‘Does he have red hair?’ | |
| B: | tetéʔe. | 8 |
| | NEG | |
| | ‘No.’ | |
| A: | ʔes-sup-cín=n'=xéʔe. | 9 |
| | STAT-hairy-face=Q=DEM | |
| | ‘Does he have a beard?’ | |
| B: | heʔáy. | 10 |
| | yes | |
| | ‘Yes.’ | |

4.2.1 PROS. This task successfully generated spontaneous yes/no question and answer data. Speakers enjoyed playing the game and were free to use their imagination and language. The lexical items were generally very common and familiar to speakers, relating to facial features, colours, and items of jewelry or clothing. The task produced a series of short, complete questions, allowing for the investigation of yes/no question and answer prosody and morphosyntax.

Because questions were short and the context was once again clear, the data collected in this task lends itself well to transfer to an educational activity on yes/no questions. Such activities are useful in the classroom for both younger and older learners. For more advanced younger speakers, teaching this game to their elders may be a good exercise in language use and provide a source of pride in sharing knowledge.

4.2.2 CONS. Inherent drawbacks of the yes/no question task included the following. In terms of the resulting data, this game task generates fewer tokens than traditional single sentence elicitation within the same time period, because speakers pause to think about their strategy during the game. During the game, noisy pieces or manipulation of the game pieces (or too much excitement) can interfere with the quality of the recording.

Additional considerations that may vary with the fieldwork context are that elders may not be familiar with the game, which will require the researcher to teach it, and most likely in the ambient rather than the target language.

4.3 STORYBOARDING. The final methodology for producing spontaneous speech presented here is storyboarding. Storyboarding is achieved by presenting the speakers with consecutive drawings of a story, much as movies are storyboarded. The speakers are then asked to tell the story.

The example below comes from a story about a snake that is swimming in the watering ditch of the family garden (this story was based on the childhood experiences of a speaker of Nlhe7kepmxcín). The Nlhe7kepmxcín dialogue in (3) relates to a sequence from the story shown in the storyboard images in figure 1. The images show a snake appearing and jumping into the watering ditch by grandfather's feet (images 1-2), and then swimming past the potatoes (image 3).

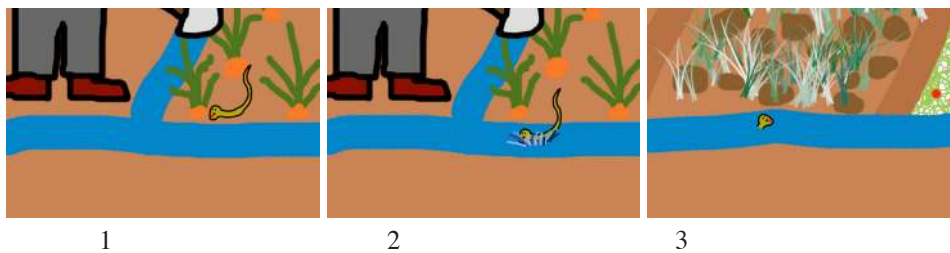


FIGURE 1. Storyboard images about a snake appearing and entering a garden ditch.

- (3)
- A: kíc-e-t-m t=e=sméyx.
arrive.location-DRV-TR-3OBJ.INDF.SBJ OBL=DET=snake
'A snake showed up.'
- B: ʔx^w-ə'p e=sméyx.
escape-INCH DET=snake
'The snake is running away.'
- A: ʂtqólʂ. [the 3rd image in Fig. 1 shows the snake swimming by potatoes]
potato
'Potatoes.'
nám'=xeʔ e=s=y'és ʔéx
much=DEM COMP=NMLZ=good=3SG.POSS IPFV
e=s=cúw=s n=e ... [breath] sand.
COMP=NMLZ=make=3SG.POSS in=DET ... [breath] sand
'It works really well to grow them in ... sand.'

This technique is useful for recording conversations between two speakers, but is also very practical for eliciting single speaker stories with speakers who are not natural storytellers, or are unfamiliar with traditional oral stories (as discussed in §3.2). The speaker looks over the individual scenes, and constructs a general story. When the speaker is comfortable, the recording begins. Finally, the storyboards can be constructed to target complex linguistic phenomena (see Totem Fields Storyboards 2013 for some examples of publicly available, linguistically oriented storyboards).

4.3.1 PROS. Speakers enjoy the story, and the drawings themselves often inspire a response. While the story is completely spontaneous, the lexical items are controlled to some extent. The individual scenes can also be used to elicit questions or discussion and scenes can be rearranged or supplemented to create different stories. The pictures together with the resulting narrative can be combined to form useful language curriculum materials.

Storyboarding is successfully being used for generating both theoretical linguistic elicitation materials (Burton & Matthewson 2011) as well as teaching materials (see for example, the Elizabeth Herring Collection and Stó:lō Nation 2004).

Drawing as opposed to real life photos seem to work best for this task. This is good news, in that anyone can draw a simple image. The quality of the drawing is not critical—stick figures can work wonderfully for triggering the imagination and representing complex storylines. For example, the (rather rudimentary) drawing below was one of a series of notecards used to successfully elicit a story from a single speaker.



FIGURE 2. Notecard from a story about borrowing a car.

We tried three techniques for presenting the images: (i) as sequential note cards that the speakers could turn over at their own pace, (ii) as a sequence of scanned drawings assembled into a movie and presented on a portable computer, and (iii) as a sequence of scanned images presented in an image presentation program (e.g. Preview, PowerPoint) at the speakers' own pace. In terms of the three methods we used to present the storyboards, some speakers felt that viewing hard copies of the drawings was preferable to watching a movie version presented on the computer. They remarked that they had longer to think about the story and could move through the images at their own pace when they had actual drawings in front of them. Using hard copies of drawings means that elicitors do not need to scan drawings and create movie files, and it also removes the need to have a power supply for a computer on which to present the movie files. This can be an advantage in remote fieldwork contexts where power supplies may not be readily available. One drawback is that the materials may require more post-production (scanning, digitization) in order to make them useful for curriculum materials.

Some speakers viewing the storyboard as a movie file felt rushed by the timing of the image changes, and did not have enough time to talk about each drawing before the next one was presented. We wanted to overcome these obstacles but maintain a computer-based presentation, because digital images have other advantages: they can be immediately used in various multimedia applications when developing educational tools, and they can be cheaply and rapidly shared with many different users. We therefore shifted to presenting digital storyboard drawings in a simple image viewing application like Preview. Images could be viewed sequentially, and at the speakers' own pace, just like in the hard copy presentation. In addition, this meant that drawings created in computer programs (like Adobe Photoshop) could be used immediately, without having to print hard copies or developing movie files. For drawings created by hand, a hard copy presentation thus seemed the most straightforward; for digitally created drawings, sequential presentation on a computer was most straightforward.

4.3.2 CONS. Storyboarding, relative to other data-gathering techniques, has several inherent drawbacks. First, the materials can be time-consuming to produce. Even if one is a talented artist, getting the drawings just right in order to convey the action can be chal-

lenging. Secondly, while the storyboard technique successfully produced spontaneous language data for us, there was little control over much of the content beyond lexical items portrayed in the images, and the basic plotline.

Furthermore, it is sometimes difficult to tell whether speakers are using the pictures as a prompt to tell a story (as intended), or describing what's going on in the picture. The Nlhe7kepmxcín dialogue in (4) is a clear case of a speaker describing the pictures, rather than telling the story shown in the pictures (the storyboard was based on the childhood fishing experiences of one of the language consultants; a sample image from the sequence is shown in figure 3). Evidence that this is description includes the use of the interjection particle *tíy* meaning 'hey, look!' in line 1; failing to immediately recall where the character in the story is going (line 4); and overtly asking what the character in the storyboard is doing (line 5).

(4) Describing the pictures in a storyboard

- | | | | | | |
|----|---|------------------|------------------|--------------------------|---|
| A: | k ^w ák ^w -s-t-ne | ʔéyʔ ʔe? | tíy | ʔ=sqyéytn, | 1 |
| | carry-CAUS-TR-3O-1SG.SBJ | now there | hey.look | DET=salmon | |
| | 'Look, I'm carrying the fish now.' | | | | |
| | ne? | n=e=nc'esqáx aʔ. | | | 2 |
| | there | in=DET=horse | | | |
| | 'on to the horse.' | | | | |
| B: | heʔáy. | | | | 3 |
| | 'Yes.' | | | | |
| A: | p'én't=kn | ʔéyʔ we? | wu-hén' ... | e=n-kz'é. | 4 |
| | return=1SG.SBJ | now there | to-which:: ... | DET=1SG.POSS-grandmother | |
| | 'Now I'm going back somewhere ... (to) my grandmother.' | | | | |
| | hm! kén-m=kn | ʔéyʔ. | | | 5 |
| | hm! what.happen-MDL=1SG.SBJ | now | | | |
| | 'Hm! What am I doing now?' | | | | |
| B: | x ^w úy'=k ^w | ʔk'íw-ix | n=e=nc'esqáx aʔ. | | 6 |
| | FUT=2SG.SBJ | climb-AUT | in=DET=horse | | |
| | 'You're going to climb on the horse!' | | | | |



FIGURE 3. Carrying the sack full of fish that grandmother caught to the horse.

It is unclear what kind of effect description versus storytelling might have on discourse structure and intonation, though both types of discourse produce fluid speech. The question of how many pictures to present at once also affects the flow and potentially some focus elements of the story.

4.4 SPONTANEOUS CONVERSATION TECHNIQUES: SUMMARY. In sum, spontaneous conversation elicitation can be a great way to generate a large corpus of data for theoretical analysis, while creating an integrated package of audio and visual materials that may be used for non-linguistic purposes. On the down side, the majority of our techniques require two relatively mobile speakers with reasonable eyesight, and the elicitor does not have much control over the structure and content of the data. The partly scripted conversation methodologies laid out in the next section offer similar advantages for curriculum development as well as more control over the resulting data for the linguist elicitor.

5. PARTLY SCRIPTED CONVERSATION. Partly scripted techniques differ from those used to gather spontaneous speech by being more flexible on the one hand and more constrained on the other. They are more flexible in that the elicitor can take the role of the second conversation partner in cases where only one speaker is available (the elicitor must have some familiarity with the language). They are more constrained because one half of the conversation is determined in advance, meaning that the elicitor has control over the lexical items and potentially some control over the expected structures. For example, in the first example presented below, the lexical items, the forms of questions, and even the order in which questions/answers occur are all under the control of the elicitor.

5.1 SLIDE SHOW. Our data collection objective here was to analyze pitch differences in answers to different kinds of questions. In the slide show task, a pair of speakers (or one speaker and the elicitor) sit together. Speaker 1 has scripted questions which they ask while a slide show is presented to Speaker 2. Speaker 2 watches the slide show and answers Speaker 1's questions based on what he or she sees. Because we were working in oral language communities in which speakers are literate in English, we had our Speaker 1 translate questions from English into the target language. In contexts in which speakers can read local language orthography, the scripted questions can be written directly in the target language. Alternatively, a second slide show with images might be used to prompt Speaker 1.

By controlling the lexical content and form of the questions, the elicitor has some control over the resulting language data. For example, in the St'át'imcets example (5), we were interested in recording yes/no questions and their responses – responses that would include focus on a number term like *pépla7* 'one' in (6). Thus, Speaker 1 translated a yes/no question, prompting Speaker 2 to reply with a yes or no response; the picture of just a single dog resulted in a focus construction where *pépla7* 'one' occupies the sentence-initial focus position.

(5) Speaker 1 translates ‘Did he see any dogs?’

Ats’x-en-ás=ha	ku=sqáxa7 ⁷
see-TR-3OBJ.3SBJ=Q	DET=dog

Speaker 2 sees:



FIGURE 4.

(6) Speaker 2 answers:

Iy,	pépla7	ti=sqáx7=a	áts’x-n-as.
yes	one	DET=dog=EXIS	see-TR-3OBJ.3SBJ

‘Yes, he saw one dog.’

We used slide shows made from photographs, as in figure 4, or from digitally drawn images, as in figure 5. Digitally drawn images allowed us greater control over the content of the image. In the next example, we created drawn characters representing our speakers when they were younger, and used these images in order to ask wh-questions that prompted 1st or 2nd person responses to the wh-terms. Figure 5 shows a slide that accompanied the scripted question in Nlhe7kepmxcín (7A), and prompted the reply in (7B).

⁷ The data are given here in St’át’imcets orthography.

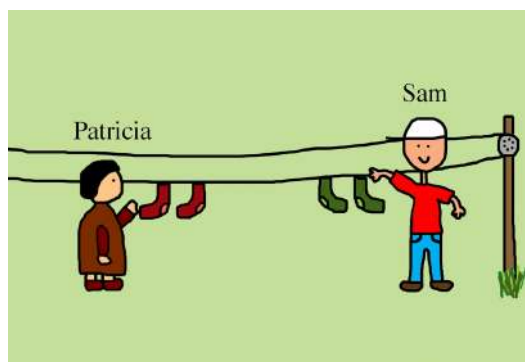


FIGURE 5. A slide about hanging socks up to dry

- (7) A: swét ne? k=ex ʔóq^w-s-t-mus
 who DEM COMP=IPFV hang-CAUS-TR-3OBJ.SBJEXT
 e=ʂtákn-s, te=s=ʔéx=s k'éx-es.
 DET=sock-3POSS, OBL=NMLZ=IPFV=3SG.POSS dry-TR.3OBJ.3SBJ
 'Who is hanging their socks out to dry?'
- B: uh, c'é e=ʂám ʔéx ʔóq^w-n-es,
 uh, CLEFT DET=Sam IPFV hang-DRV-3OBJ.3SBJ,
 ʔóq^w-s-es ne? e=s, e=ʂtákn-s.
 hang-CAUS-DRV.3OBJ.3SUBJ there DET=NMLZ, DET=sock-3POSS
 'Uh, it's Sam that is hanging them, he's hanging his, his socks there.'
 ncéwe?, nwén' u=ci? ʔóq^w-s-ne
 1SG.EMPH, already to=there hang-CAUS-DRV.3OBJ.1SG.SUBJ
 e=n, e=n-ʂtákn.
 DET=1SG.POSS, DET=1SG.POSS-sock
 'Me, I already hung up my, my socks.'

5.1.1 PROS. If the linguist is competent in the target language, then he or she can play the part of Speaker 1, asking the scripted questions. Thus, this technique requires only one fluent speaker, an advantage in endangered language communities where it may be difficult to get two or more elderly speakers together at the same time. Since questions are scripted ahead of time, the elicitor has control over half the data, but is still able to prompt natural, spontaneous responses to questions. A slideshow of images, which have been randomized for work with different speakers, is a good way to mimic the sort of read lists used in much laboratory phonetic work, while still producing natural conversation. Phonetic analysis requires a high number of repeated, similar tokens, which can be difficult to generate using natural conversation or texts. Having speakers respond to a series of questions over one or more sessions can generate a large number of controlled tokens while still maintaining natural fluency.

Once responses have been recorded and transcribed, they may be used for educational purposes in conjunction with the same slides that were used to make the language recordings. This is valuable because the context used during the language elicitation with the

linguist can be straightforwardly incorporated into language teaching materials or lessons; clearly seeing the context makes learning the content, such as the question-answers pairs that accompany the slides in the figures above, easier and more relevant.

5.1.2 CONS. There are a number of potential problems inherent to the task we used here. Perhaps most importantly, in cases where Speaker 1 is translating from English (or another local language in which they are literate), translation introduces a potential for unnatural slow-downs in the flow of this task. It is a complex skill to translate on the fly. For example, when conducting the task in (6) with a speaker for the first time, sixteen of the forty-two questions produced by one speaker resulted in long disfluency pauses. This could be alleviated through a period of practice trials before recording, in which Speaker 1 is asked to practice translating the questions before starting the slide show with Speaker 2. In our experience, speakers also become much better at translation tasks like this with continued experience; we see fewer disfluencies in speakers who have done tasks like this many times during years of fieldwork.

While the elicitor can control the content of the slide and the form of the question, the responses can vary considerably, and in ways that may be unexpected. For example, it is clear from B's response in (7) that she interpreted the image to show that Sam was currently hanging up his socks, while Patricia had already done so. This was unintended: the image had been meant to show both Sam and Patricia hanging up their socks, and thus prompt a response that included a translation equivalent for 'also' (e.g. 'Patricia is hanging up her socks, and so is Sam'), but this was not achieved. On the other hand, this response did furnish interesting data on the marking of progressive and perfective events.

In some instances, questioners may stray from their script, thus straying from the intended target language data. However, usually such straying is a good thing, as interest in the materials shows that speakers are engaged in these tasks, and capable of producing very fluent natural language data. An Nlhe7kepmxcín example is shown in (8). Here, speakers are responding to seeing a recurring character, Pam, in the slide show image (figure 6). Normally, Pam is depicted as frowning and angry, so they are amused to find her smiling; Speaker A sets aside her scripted question to comment on Pam, which results in the dialogue shown in (8).



FIGURE 6. A recurring character, Pam, is unexpectedly smiling

(8) Straying from the script to produce spontaneous dialogue

- A: [laughing]
 ?s-q'wíʕ' ?éyʔ!
 STAT-smile now
 'She's smiling now!'
- B: y'é=nke=ne? k=sx'áwkʷ-s ?éyʔ e=Pám,
 good=EVID=there IRR=heart-3SG.POSS now DET=Pam,
 'I guess Pam is happy now,'
 ?e=s=cw-úm=s.
 and=NMLZ=work-MDL=3SG.POSS
 'she is working.'
- A: céqʷ-cn-me=nke tífy.
 red-mouth-MDL=EVID hey.look
 'Look, I guess she put lipstick on.'
- B: [laughter]
 he?áy!
 yes
 'Yes!'

Finally, this technique requires literacy on the part of Speaker 1; it may be that this condition is not met for some fluent elderly speakers in endangered language contexts. While this is not an inherent problem of this method, it may arise in specific fieldwork contexts.

5.2 THE PUT TASK. Our second partly scripted task was designed to elicit echo questions (e.g. “Put it *where?*”). This task required the speaker to ‘put’ items onto a board by following the elicitor’s instructions. This was a variation of the task-oriented conversational method discussed in §4.2, but with one half of the conversation controlled by the elicitor. Thus, for the Put Task, one speaker and the elicitor are present. The speaker is presented with a board with colored picture squares (figure 7), and a number of tokens of different colors (such as the cats in figure 8):

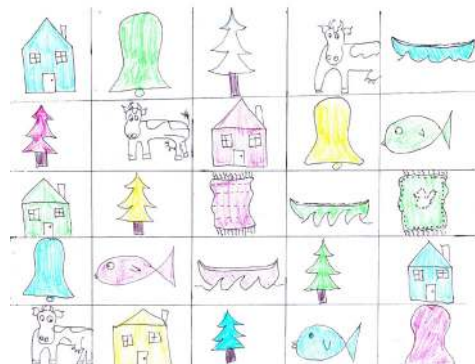


FIGURE 7. A game board for the Put Task

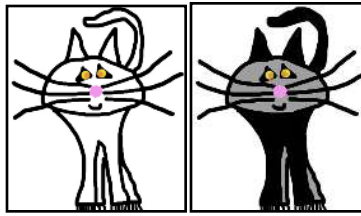


FIGURE 8. Tokens for putting on the game board

The elicitor then gives confusing, unclear or mumbled instructions, so that the speaker asks questions for clarification. The game board was also designed with plenty of opportunity for confusion, that would prompt clarifying questions on the part of the speaker: note the trees of different colors, the poorly drawn bells, and the fact that the words for blanket ([ʃlapʰ]) and tree ([ʃyap]) are near rhymes in the target language (St'át'imcets). The task resulted in natural, spontaneous echo questions in which the speaker sought clarification, as in (9-10).

(9) Speaker hears:

Lhúm-un	ti=máw=a	l=ti	qwezqwáz=a	ts'úqwaz'.
put-TR	DET=cat=EXIS	LOC=DET	blue=EXIS	fish
'Put the cat on the blue fish.'				

(10) Response 1:

Ti	nká7=a	maw?
DET	WH=EXIS	cat
'Which cat?'		

(11) Response 2:

L=ti	stám'=a!?
LOC=DET	WH=EXIS
'On the what!?'	

5.2.1 PROS. This task was a modification of the Map Task (Anderson et al. 1991, Lickley et al. 2005, Queen 2001), which we originally employed, in which the speaker was asked to navigate around a map. The Map Task, however, was a complete failure for us as an elicitation tool for the goal of eliciting echo questions, which prompted us to modify our methodology and switch to the Put Task. It is worth briefly reviewing why a Map Task failed. First, the vocabulary for the Map Task was challenging for both elicitor and speaker. This, coupled with the fact that elicitor-drawn maps (and perhaps real maps, too) can be difficult to interpret, resulted in the speaker becoming increasingly frustrated. The levels of frustration, confusion and disfluency were such that little target language data was recorded. Navigating with maps in this way was just not culturally relevant for these speakers, which made the Map Task unsuccessful here.

On the other hand, the Put Task was far more successful in producing questions. It used more familiar lexical items and directives. By adjusting the methodology to include

mumbled or unclear directions, the goal of eliciting natural clarification questions was easily achieved. The speaker enjoyed the task and did not become frustrated at the elicitor's deliberately poor pronunciation. This may be the one time when an elicitor can take advantage of their poor pronunciation – it is expected by the speaker, and results in natural attempts to clarify what was said! The Put Task produced a small but useful corpus of the target echo questions and came with a clear context in which they were used.

Because the elicitor gave the directives for the speaker to follow, the task can be completed with just the elicitor and a single fluent speaker. Moreover, since the task is oral, it requires no literacy on the part of the speaker, though it does require good eyesight.

This methodology and the recorded language data are easily adaptable to a range of language learners in the language classroom. The Put Task results in natural language recordings of echo questions that can be used in the classroom to model the target construction, and, being game-oriented, this is a fun activity for language learners. The mumbled and unclear directions and confusing pictures can be replaced by clearer instructions and pictures for beginner learners, or left in place as an added challenge for more advanced learners. A matching game based on the Put Task was successfully used in a St'át'imcets language classroom for a community that had no such resources of its own. The game required groups of learners to construct family units of cartoon characters (to practice kinship terms). It turned out that the younger learners were more familiar with the characters, while the elders were more familiar with lexical items and the directives required to play the game. Both types of learners worked wonderfully well together to accomplish the task.

5.2.2 CONS. There are a number of inherent problems specific to this task. Given its deliberate use of unclear language and requests, the Put Task requires a speaker with some degree of patience. Some speakers may become frustrated with the confusing instructions. Preparing the tokens and the game board requires the elicitor to have some drawing skills (though poor drawing skills may actually be an advantage for this task, as unclear drawings will prompt more echo questions) and require a moderate amount of time to prepare and test.

5.3 ANIMATION. Our final example of a partly scripted technique is interactive animation. Our animation task was designed to collect data to compare new information (presentational) focus with contrastive focus. In this task, speakers respond to animated, speaking characters, having been told to “help these guys learn Nlhe7kepmxcín.” To get our characters to speak, we recorded the target questions ourselves, and then raised the fundamental frequency of the recordings to make them cartoon-like, using Praat (Boersma & Weenink 2007). We then animated a mouth opening and closing over the playing audio. Each question was presented as a single slide using Microsoft PowerPoint.

In the animation in figure 9, the green character asks in Nlhe7kepmxcín, “What's this?” and the speaker responds, “That's a chicken,” shown in (12). Once the speaker has responded, the elicitor or speaker advances the PowerPoint presentation to the next animated slide.

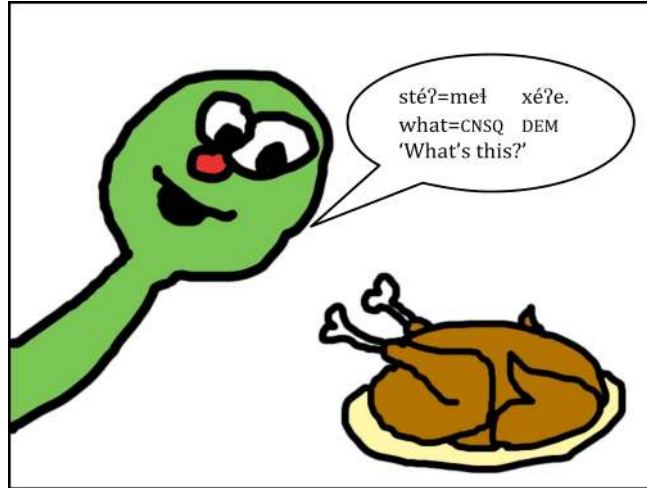


FIGURE 9. An animated slide

- (12) cíkñ xé?e.
 chicken DEM
 'That's a chicken.'

5.3.1 PROS. Importantly, speakers find this activity a lot of fun, which contributes to spontaneous, natural language produced during the recordings. This technique works really well and quickly generates a sizeable, controlled data set. The elicitor creates the questions, so is able to control for lexical content, grammatical structure of the question, and context. This control allows any number of theoretical questions to be targeted by the animation technique, by varying the content of the speech produced by the animated characters. Because the stimulus is presented visually and orally, it does not involve any reading and thus produces fluid conversational responses. Finally, because half of the dialogue is incorporated into the animated presentation, this task requires only one fluent speaker. Once created, the animation is adaptable to different languages and/or different elicitation objectives.

We had been concerned that using the elicitor's own voice to record the animated characters' dialogues might result in speech that differed from typical first language speech because it involved one non-fluent speaker (the animated character) paired with a fluent speaker. In other words, we were worried about a 'speaking to a foreigner' syndrome. However, we were unable to detect any prosodic or morphosyntactic differences between the forms produced in the animation task, as compared to forms produced in spontaneous dialogue between two fluent speakers. For example, the Nlhe7kepmxcín utterance shown in (13), produced during an animation task, is morphologically and syntactically complex, well beyond the level of a beginner speaker, and the language consultant has not slowed down her production in any way.

- (13) ó, tetéʔ=xeʔ k=seplíl=s. ʔéplɿ xéʔe.
 oh, NEG=DEM COMP=NMLZ.bread=3SG.POSS. apple DEM.
 c'ém'm'=meł e=péyeʔ e=seplíl.
 CLEFT=EMPH=CNSQ DET=one DET=bread
 'Oh, that's not bread. Those are apples. The bread is that other thing.'

We think there are four reasons why the speech produced in this task was so comparable to spontaneous dialogue: (i) packaging our recorded speech as animated character speech masked the source of the recordings (ourselves, second language speakers), (ii) the questions that we recorded were very simple, so we were able to produce close approximations to first language speech, (iii) since the animated characters were described as 'learning the language,' they were not expected to be perfect, and (iv) speakers found the animated characters so enjoyable that they responded to them as they would in a natural language context – rapidly and fluently.

We had considered an alternative which would overcome any potential 'speaking to a foreigner' syndrome, namely to use recordings of fluent speakers for the speech of our animated recordings. A potential problem here was that the endangered language speech communities are so small that speakers would be faced either with their own voice or the voice of someone they knew well (even if that voice had an altered F0 to sound more cartoon-like). We thus rejected this alternative because (i) we were afraid that the speakers would recognize characteristics of their own voice or the voice of another fluent speaker in the animated speech and be distracted, and (ii) the task already worked so well with our own voices as the basis for the animated speech.

When considering the transfer of this sort of linguistic material to education, the use of animated tasks has some inherent advantages. First, the exact context of this task can be presented in the language learning classroom: the animation can simply be transferred to educational use. Secondly, the use of digital animations has the potential to be used in a web-based teaching format, or for language learning outside the classroom (e.g. on portable digital devices), which may be of considerable relevance to younger learners, thus enhancing teaching outcomes. (For example, see the numerous apps created by First Voices at <http://www.firstvoices.com/en/apps>. There have been over 7800 downloads of their dictionary and chat apps).⁸

In terms of context-specific advantages, this task can work well even with speakers whose eyesight is not good enough to complete some of our other tasks. This is because the animation can be projected onto a wall or screen, like a film, while the language data is being collected. However, this would require a portable projector.

5.3.2 CONS. Intrinsic drawbacks of animations are that they are extremely time-consuming to prepare, and require advanced computer skills on the part of the elicitor, in audio recording and manipulation, and digital animation. Because the animations move rapidly and produce such fluent speech, the recordings that are produced in these tasks also take a long time to transcribe. Completing the task in the field requires a power source.

⁸ Peter Brand, p.c.

5.4 PARTLY SCRIPTED CONVERSATIONAL TECHNIQUES: SUMMARY. In sum, partly scripted conversational methodologies require more fluency and time on the part of the elicitor when constructing the materials, but have the advantage of generating a reasonably large and partially controlled corpus for theoretical analysis. Once developed, the elicitation materials are engaging and may also be easily mobilized to the community.

6. CONCLUSION. The documentation of intonation and other prosodic characteristics of endangered indigenous languages is crucially time sensitive. Intonation plays a role in identifying prominent items in speech, grouping speech items together, conveying meaning above the segmental/lexical level, and is important for language acquisition (Speer et al. 2009). Unfortunately, the prosodic characteristics of a language are often overlooked when linguists conduct field research and, crucially, such features cannot be recovered from a textbook or grammar. As such, it is vital that the prosodic characteristics of First Nations languages be documented, analyzed, and (perhaps more importantly) transformed into learning materials.

Mixed and multi-media products are ideal for teaching and learning intonation and prosody, since audio and context can be clearly linked. We propose in this paper that eliciting language data for linguistic analysis and language curriculum materials need not be mutually exclusive. The materials can be built right into the elicitation itself in a number of creative ways. Each of the methodologies presented here can be adapted to a variety of different goals and languages. Additionally, there are advantages to using a range of these methodologies: speakers don't get bored during elicitation sessions; there is a greater chance of uncovering new or unusual structures; different tasks may be better suited to targeting different structures (e.g. the Put Task for echo questions; see also Mühlbauer 2008 on Plains Cree); and more variety during language elicitation can lead to a greater variety of resulting educational tools. We hope that presenting the methodologies that worked for us will open a dialogue about mutually beneficial elicitation material development.

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