



# Making Field Recordings Useful: Online Tools for Accessing a Corpus of Recordings

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# Overview

- ❖ Background
- ❖ Northern Pomo
- ❖ Northern Pomo Language Tools
- ❖ Design and Technical Decisions
- ❖ Open-Source Template of these Tools



**Background**

# Motivation



- Many field recordings and field notes collected over 25 years on a language now dormant...
- Desire to make these resources accessible to the community of the descendants
- Language revitalization is very difficult...
- Ultimately, we decided to place on a website...

# Goals

To make these resources...

- ❖ Widely accessible

- Access by phones, tablets, or computers.

- ❖ Easily accessible

- Structure the resources
- Retrieve relevant materials

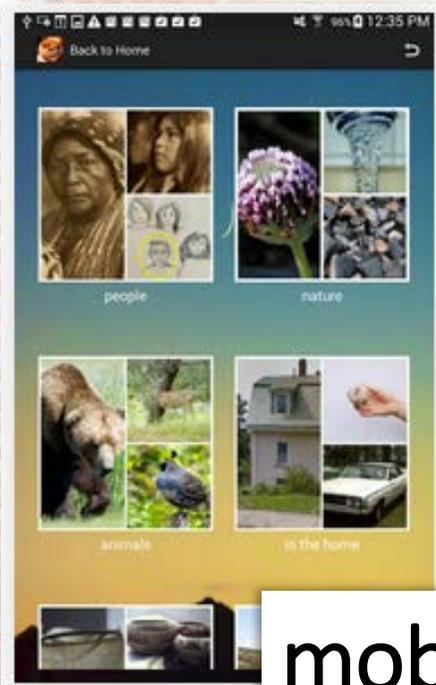
- ❖ Useful for many purposes

# The process...

1. Creating Mobile apps
2. Creating Online Tools



Making them into open-source templates



mobile app



northern pomo  
language tools

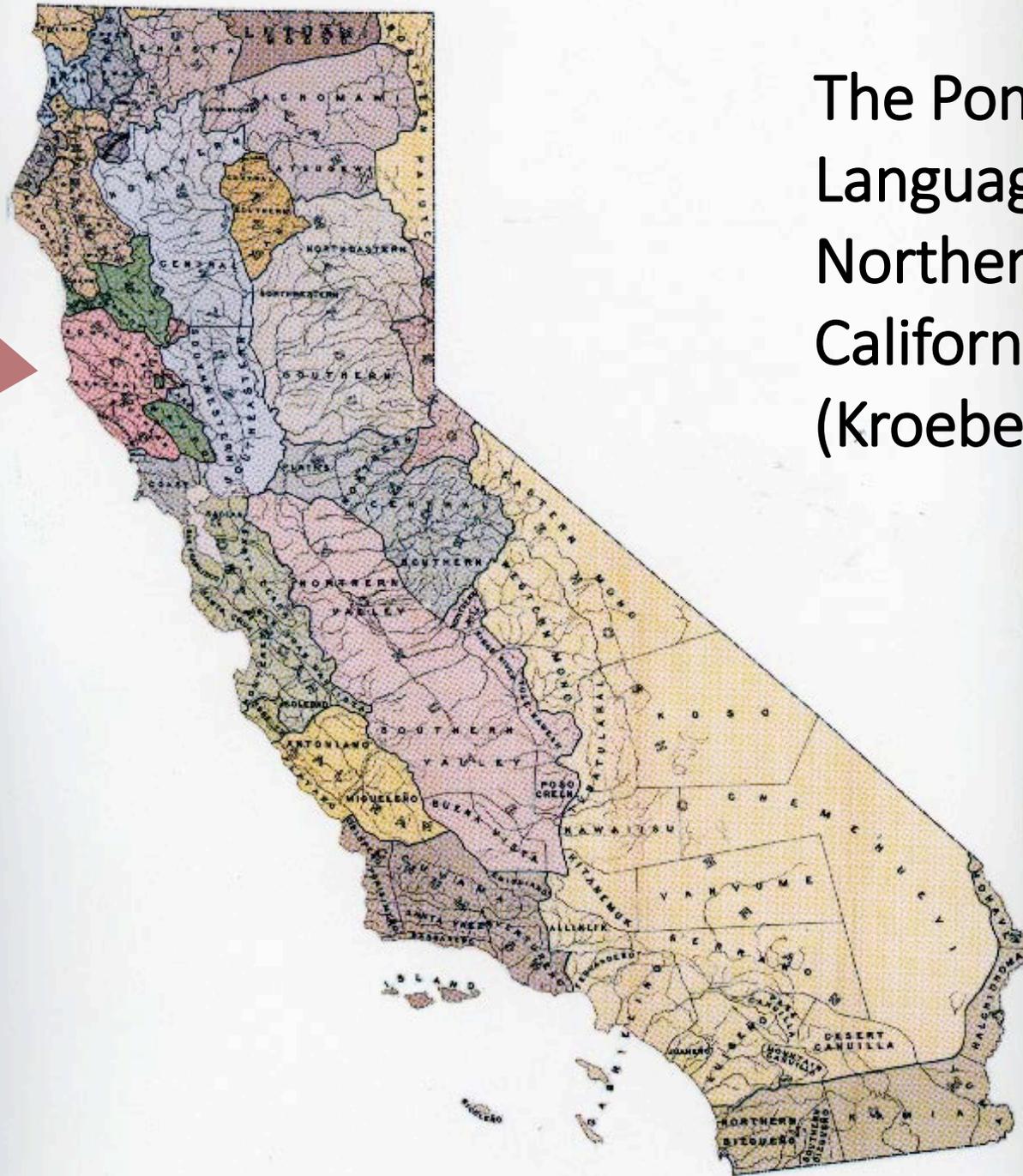
how to use the website  
about the language  
links to mobile apps  
sounds and letters  
everyday expressions  
talking dictionary  
phrasicon  
stories and texts

website



# Northern Pomo

The Pomoan Languages in Northern California (Kroeber, 1925)





Edna Campbell Guerrero



Elenor Stevenson Gonzales

# Situation today...

- Currently no living fluent speakers.
- But, there is still a community that identifies with the language.
- EGIDS Level 9: Dormant:  
“The language serves as a reminder of heritage identity for an ethnic community, but no one has more than symbolic proficiency.”

A large, round, woven basket made of dark brown material, possibly bark or wood, with a heart-shaped object (possibly a piece of wood or a leaf) resting inside. The basket is set against a background of green foliage. The text "Northern Pomo Language Tools" is overlaid on the right side of the basket.

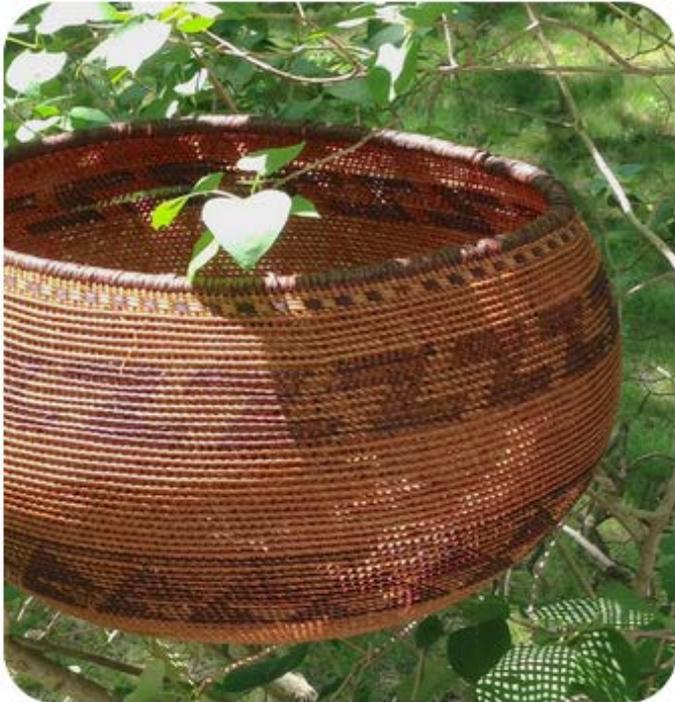
# Northern Pomo Language Tools



## northern pomo language tools

how to use the website  
about the language  
links to mobile apps  
sounds and letters  
everyday expressions  
talking dictionary  
phrasicon  
stories and texts  
contact

- Exploring a language may be overwhelming...
- Variety of different entryways into the language.
- Start top-down, or create your own path.



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# How to Use the Website

On this website you will find a variety of different entryways into the Northern Pomo language. For many people, exploring a new language can be overwhelming, so take it one step at a time. There is no right or wrong way to use these materials. You do not have to use all of the sections, and you do not have to use them in any particular order!

**Word and Pictures** An easy way in to these materials is through the **mobile apps**. Using your phone or a tablet you can scroll through pictures. Tap on the picture to hear the word spoken by an elder who was a fluent speaker, and to see how the word is written.

To download the Android or iOS version of the app, click the "Links to Mobile Apps" on the Main Menu page of the website.



**Sounds and letters** After you have gotten used to listening to Northern Pomo words, you may want to learn more about how they are written. You may also have noticed that there are many sounds in Northern Pomo that don't occur in English. In the "Sounds and Letters" section you can get more practice in hearing the sounds and saying them.

There are three parts to the Sounds and Letters section. The first is a chart that allows you to click on a letter and hear the corresponding sound.

Click on a letter to listen to the corresponding sound. (Note: it may take a few seconds to hear the sound, depending on your internet speed.)

ʔ	a	ac	b	ch
ch'	d	e	ec	h
i	ic	j	k	k'
k <sup>h</sup>	l	m	n	o
oc	p	p'	p <sup>h</sup>	s
sh	t	t'	t <sup>h</sup>	t <sup>h</sup>
t'	t <sup>h</sup>	ts	ts'	u
uc	w	x	y	

➤ Some users may want to be oriented about the different sections of the website.

## About the Language



The Pomo basket on the main page and subsequent pages was made by Clara Williams in 1943, of white sedge and red bud, with a silver willow frame.

Northern Pomo, one of seven distinct Pomo languages, was spoken in Northern California for thousands of years. Because of conquest and colonization by European settlers and government language policies, the language is no longer fluently spoken. This website is part of a project to archive and make available materials on the Northern Pomo language to support revitalization efforts.



These materials include voice recordings of the late Edna Campbell Guerrero and Elenor Stevenson Gonzales (pictured below), both native speakers of Northern Pomo.



Pictured above (left to right): Edna Campbell Guerrero; Elenor Stevenson Gonzales

These materials would not exist without their patience, dedication, and hard work. The recordings were made by Catherine O'Connor between 1979 and 2005.

Edna Campbell Guerrero lived in Potter Valley until her death in 1995. Her father's mother was from Sherwood Valley, in a band called *shibal dano po?ma?*. Her mother had relatives from all over the area, including Ukiah and to the south. Elenor Stevenson Gonzales was an elder of the Pinoleville Rancheria. In her later years she lived in Santa Rosa with her daughter and grandchildren until her death in 2005.

The current project is supported in part by a grant from the NEH/NSF Documenting Endangered Languages program (FN-50107-12) to Catherine O'Connor, which is gratefully acknowledged. Views expressed in this material are the work of the authors and do not necessarily reflect the views of the U.S. National Science Foundation or the National Endowment for the Humanities. This material may not be sold and no charges may be made for its use.

➤ About the language, where it is spoken and its speakers.



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## Links to Mobile App

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As a first step towards learning the Northern Pomo language, you might like to look at a mobile app that will introduce you to 85 Northern Pomo words with pictures. The app contains sound files by fluent speakers Edna Campbell Guerrero and Elenor Stevenson Gonzales. The words can be studied within one of 7 categories (food, nature, people, places, animals, in the home, traditional objects) or across the entire set of 85 words.

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## Download

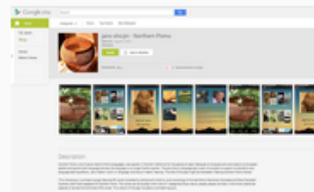
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Clicking on the images below will bring you to the download page of the app.



### iOS App

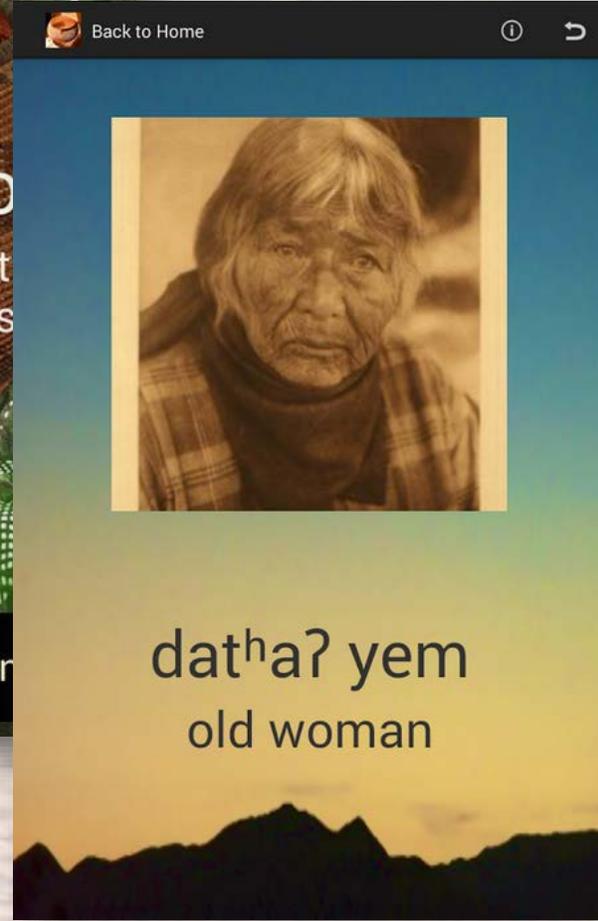
Currently, only the iPad version of the app is available. The iPhone version soon to come!



### Android App

The Android version of the app is available and contains a quiz function as well.

➤ Links bringing you to the mobile apps.



➤ Introductory word-learning app featuring 85 words.

➤ Presented at an earlier talk today...

- (Besides the mobile apps), these are the main components for incorporating field recordings...



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Click on a letter to listen to the corresponding sound. (Note: it may take a few seconds to hear the sound, depending on your internet speed.)

ʔ	a	a:	b	ch
ch'	d	e	e:	h
i	i:	j	k	k'
k <sup>h</sup>	l	m	n	o
o:	p	p'	p <sup>h</sup>	s
sh	t	t' 	t <sup>h</sup>	t̚
t̚	t̚ <sup>h</sup>	ts	ts'	u
u:	w	x	y	

- Learners may want to hear more about the sounds and how they're written.
- Matrix of sounds...
- Clicking on the letter lets you hear the corresponding sound.

ha

mouth

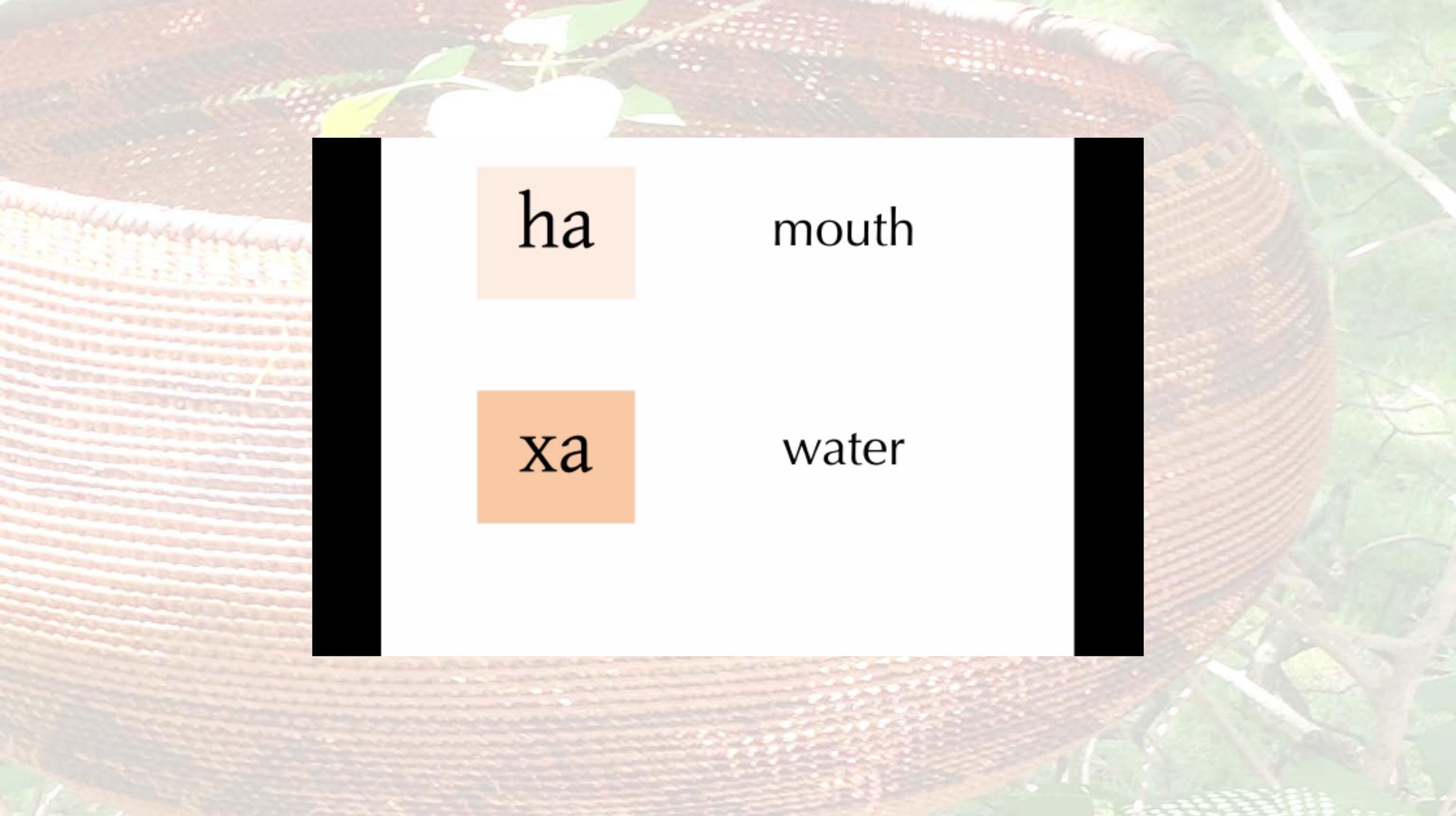
xa

water

0:55

1:45

- Videos training learners linguistically significant sounds.
- Recordings of native speakers saying the similar words with contrasting sounds.



ha

mouth

xa

water



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# Everyday Expressions

On this page you will find links to short videos explaining some common expressions.

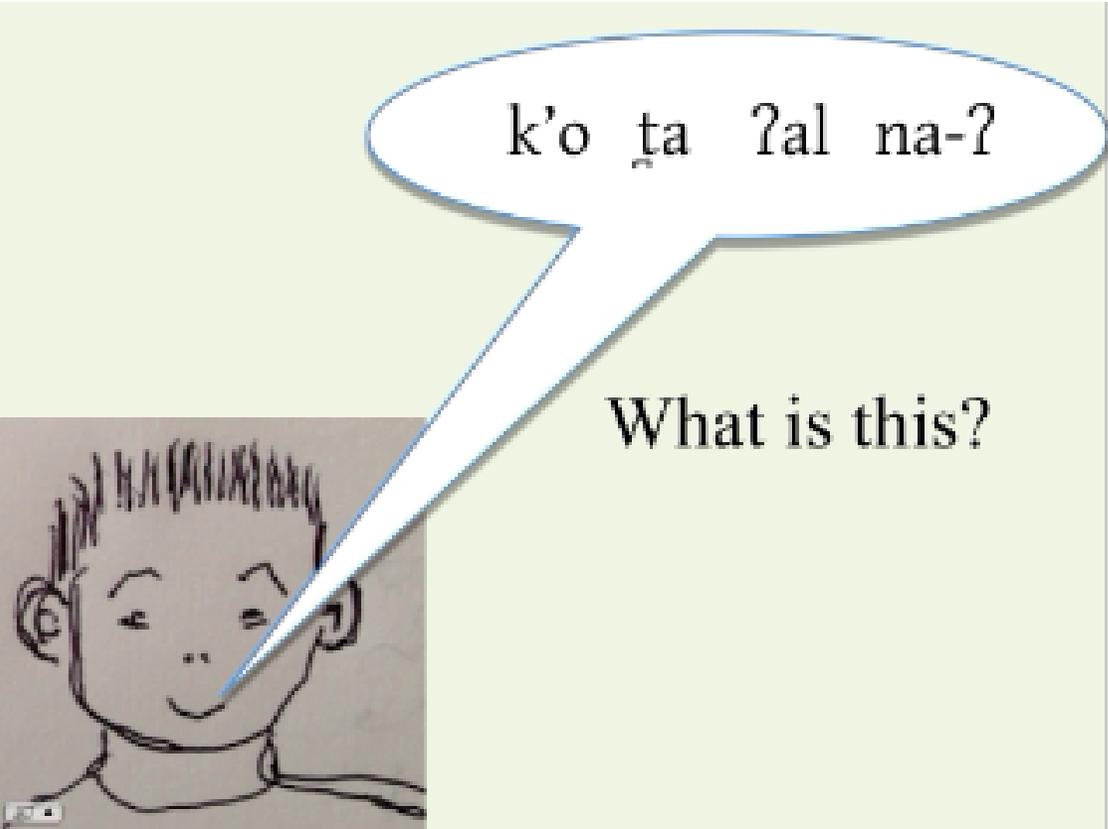
**"What is this?" "That is..."**

Watch

**"Whatcha doing?"**

Watch

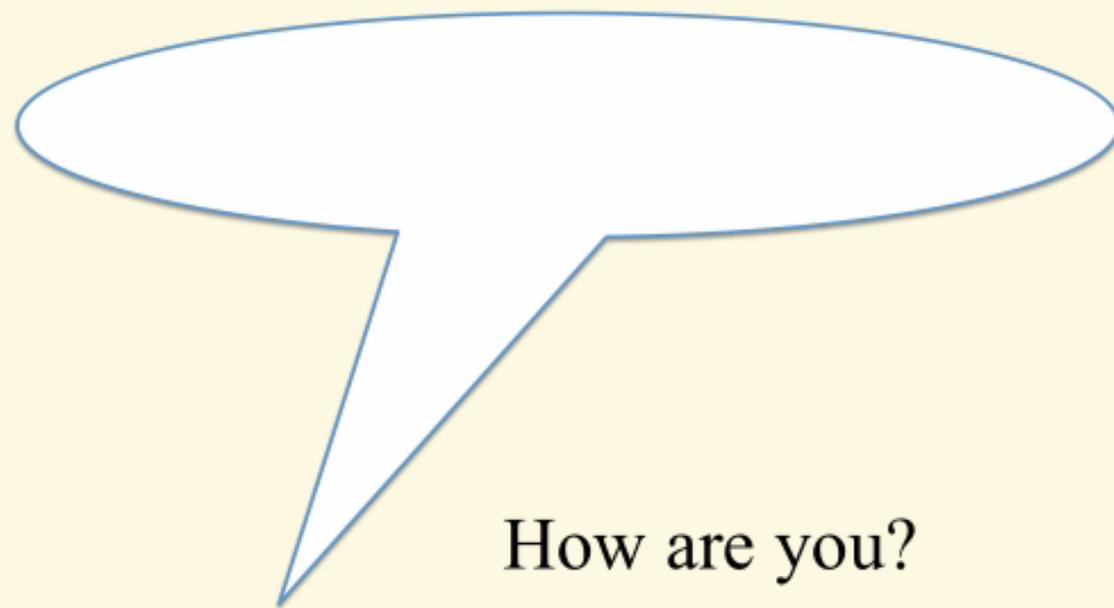
- Learners may want to learn expressions used on a day to day basis.



k'o ta ?al na-?

What is this?

- Short videos that break down the expressions.
- Learners get to hear a fluent speaker saying that expression.
- Encourage repetition of the utterance.



How are you?



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## Northern Pomo Stories and Texts

During the 1960s, Eero Vihman, a linguist at U.C. Berkeley, studied the Northern Pomo language. He worked with Annie Lake and Edna Campbell Guerrero. The stories and texts on this page were recorded during his work with Edna Campbell Guerrero. Later, during the 1980s and 1990s, Catherine O'Connor worked with Mrs. Guerrero to translate the stories and texts into English. Here we include a recording of each story or text, presented in a video with subtitles. We provide a brief description of each one, and include a printable version with the Northern Pomo words and the English translation on opposite pages.

Image: Coyote Valley Band of Pomo Indians; Caltrans 1953, courtesy of Eddie F. Knight

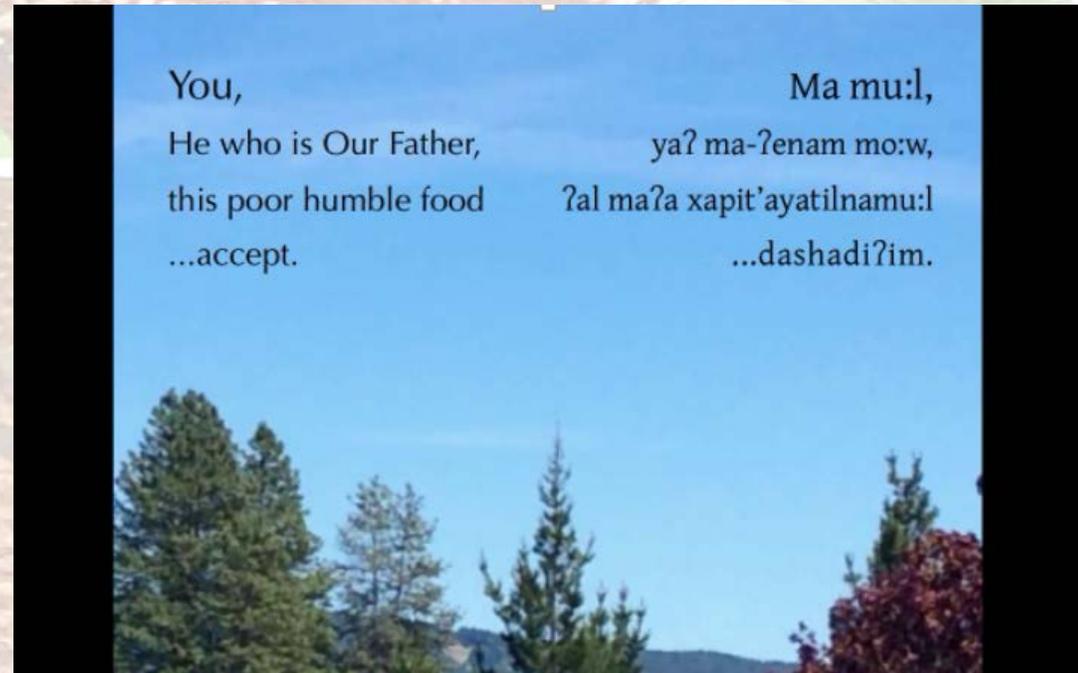


- Small set of around ten monologues by Edna Campbell Guerrero, recorded 1963.
- Include narratives and monologues about cultural practices and personal experiences.

# One approach...

- Videos of narratives with Northern Pomo and English translation.

ma mu:l you that	You,
ya? ma?e nam mo:w our father the he	Our Father,
?al ma?a xap <sup>h</sup> it'ayatil nam mul this food pitiful the that	this poor, humble food,
dashadi?im accept	accept.
to: xap <sup>h</sup> it'am me pity	Have pity on me,
xap <sup>h</sup> it'aya k <sup>h</sup> e ?a: na be pitied will I be	I am to be pitied.



- “Lyrics” appear on screen as the speaker is telling the story.
- There is also an accompanying text below that can be printed out.



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# Talking Dictionary...

## Northern Pomo Online Talking Dictionary

English to Northern Pomo

a b c d e f g h i j k l m n o p q r s t u v w x y z

Northern Pomo to English

? b ch ch' d h j k k' k<sup>h</sup> l m n p p' p<sup>h</sup> s sh t t' t<sup>h</sup> t̥ t̥' t̥<sup>h</sup> ts ts' x y

English

You can type in Northern Pomo letters by clicking on the arrow to the right of the submit button.



# Phrasicon...

## Northern Pomo Online Phrasicon

English Word Lookup

a b c d e f g h i j k l m n o p q r s t u v w x y z

Northern Pomo Word Lookup

? b ch ch' d h j k k' k<sup>h</sup> l m n p p' p<sup>h</sup> s sh t t' t<sup>h</sup> t̥ t̥' t̥<sup>h</sup> ts ts' x y

English



Type word...

Submit



Hyper Search

You can type in Northern Pomo letters by clicking on the arrow to the right of the submit button.



# Northern Pomo Online Talking Dictionary

English to Northern Pomo

a b c d e f g h i j k l m n o p q r s t u v w x y z

Northern Pomo to English

? b ch ch' d h j k k' k<sup>h</sup> l m n p p' p<sup>h</sup> s sh t t' t<sup>h</sup> t̥ t̥' t̥<sup>h</sup> ts ts' x y

English

You can type in Northern Pomo letters by clicking on the arrow to the right of the submit button.



**water**

**xa**

*noun* water

Example phrases (phrasicon)

ES  0:02 0:02

AL  0:02 0:02

EC  0:03 0:03

- Dictionary entries displayed in tabular format.
- Link from Talking Dictionary to Phrasicon entries containing that head word.
- Recordings and initials of the multiple speakers.

? b ch ch' d h j k k' k<sup>h</sup> l m n p p' p<sup>h</sup> s sh t t' t<sup>h</sup> t̥ t̥' t̥<sup>h</sup> ts ts' x y

English  Submit

You can type in Northern Pomo letters by clicking on the arrow to the right of the submit button.



water  
**xa**  
*noun* water

Example phrases (phrasicon)

ES	<input type="text" value="0:00"/> 0:02
AL	<input type="text" value="0:00"/> 0:02
EC	<input type="text" value="0:00"/> 0:03

xa jo: k'ala:n

xa	jo:	k'ala:n
water	for	dying

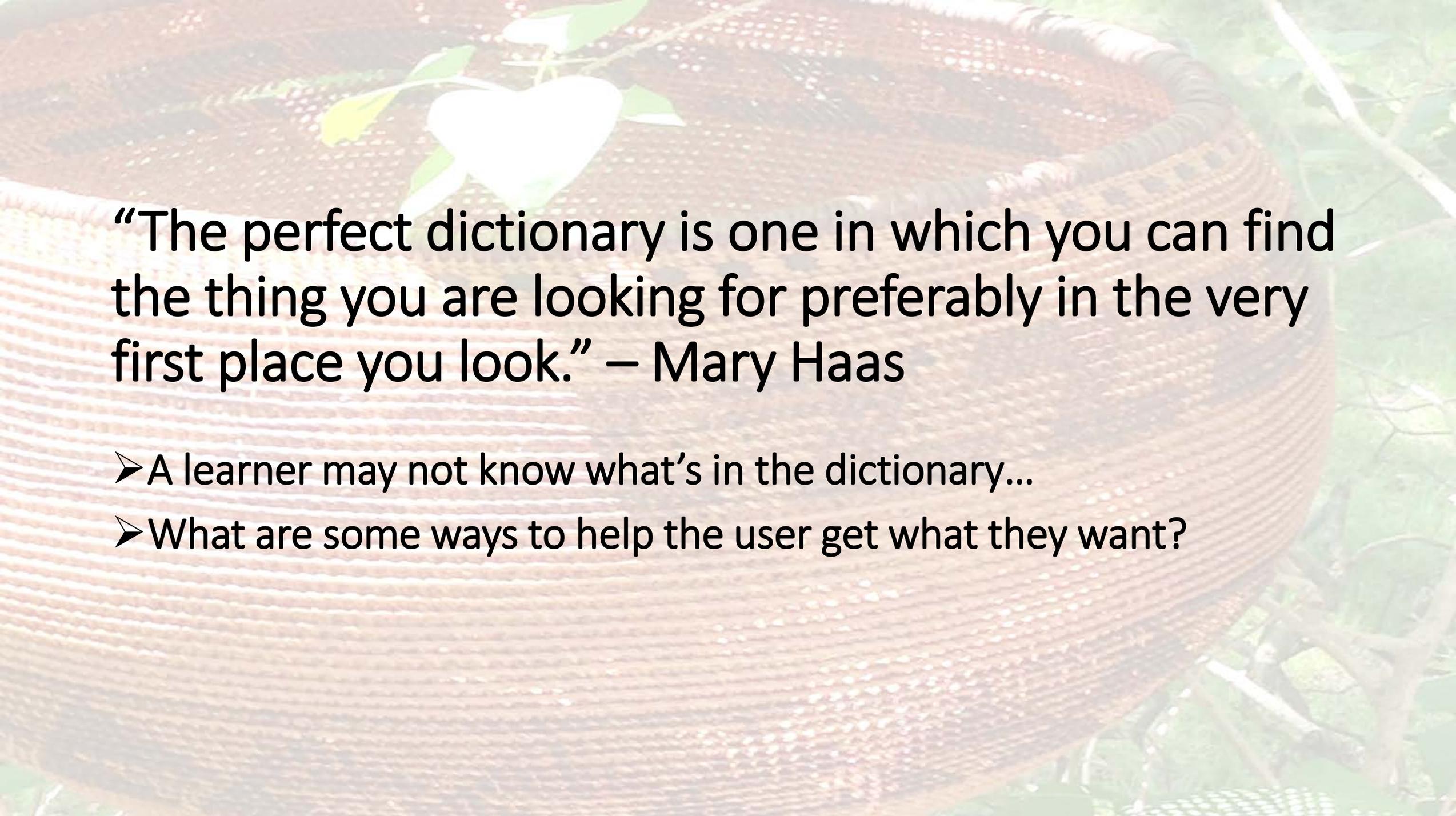
*dying for water*

0:00 0:01

- Entries in the Phrasicon in interlinear gloss format.
  - First layer: sentence or phrase in Northern Pomo
  - Second layer: morpheme
  - Third layer: English gloss
  - Fourth layer: English translation
- Linkage between Talking Dictionary and Phrasicon works both ways.



# Design and Technical Decisions



“The perfect dictionary is one in which you can find the thing you are looking for preferably in the very first place you look.” – Mary Haas

- A learner may not know what's in the dictionary...
- What are some ways to help the user get what they want?

# Scenario 1:

- Learner wants to know what the Northern Pomo word is for “brother” ...
- In Northern Pomo, the language distinguishes between “older brother”, “younger brother” ...there is no one word for “brother”

# Organizing search term...

## ➤ Searching for “brother” ...

[Back to Main Menu](#)

Phrasicon

### Northern Pomo Online Talking Dictionary

English to Northern Pomo

a b c d e f g h i j k l m n o p q r s t u v w x y z

Northern Pomo to English

? b ch ch' d h j k k' k<sup>h</sup> l m n p p' p<sup>h</sup> s sh t t' t<sup>h</sup> t̥ t̥' t̥<sup>h</sup> ts ts' x y

English

You can type in Northern Pomo letters by clicking on the arrow to the right of the submit button.



#### About the dictionary

This Online Talking Dictionary contains words from the Northern Pomo language. Most entries are spoken by fluent speakers Edna Campbell Guerrero, Elenor Stevenson Gonzales, and Annie Lake. Each dictionary entry contains a sound file of the word, and the speaker's initials beside

## Scenario 2:

- Learner wants to know the Northern Pomo word for “dogs” ...
- In general, Northern Pomo does not distinguish between singular and plural nouns.

# Stemmer

- We used a technique, called a *stemmer*, that can look for the singular rather than the plural.
- Searching for “dogs” will return no result...
- An option to try an ‘Extended Search’ that stems the search query.
- Searches again with “dog” ...

# Persistent Search Conundrum:

- User doesn't know what to search in Northern Pomo, they will be searching in English.
- User search for the word "old" ...
  - Should "older" be returned?
- But if the user searches for the word "man"
  - Should "manner" be returned?

# Search rules...

- Search for “old” should return “older”
- Search for “man” should not return “manner”
- How to get around this issue?
- We implemented an ad-hoc search rule...

# There are many persistent problems...

- Perhaps we should be talking about these kinds of issues as a field...
- Resource design principles and best practices.

A large, round, woven basket made of brown and tan fibers, featuring a decorative pattern of dark brown diamonds. Inside the basket, a white heart-shaped object is placed on a bed of green leaves. The basket is set against a background of lush green foliage and tree branches.

# Open-Source Templates



# Language XYZ

~~how to use the website~~

about the language

~~links to mobile apps~~

~~sounds and letters~~

everyday expressions

talking dictionary

phrasicon

~~stories and texts~~

contact

# Current beta tests...



Outils  
d'apprentissage de  
la Langue Medumba

sur ces matériaux  
les mots  
contact

- Medumba, a Grassfields Bantoid language, spoken in Cameroon.

- Lachixío Zapotec, an indigenous language of Oaxaca, Mexico, with Mark Sicoli.

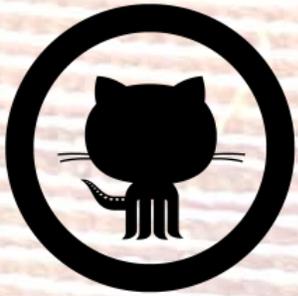


# Our suggestion...

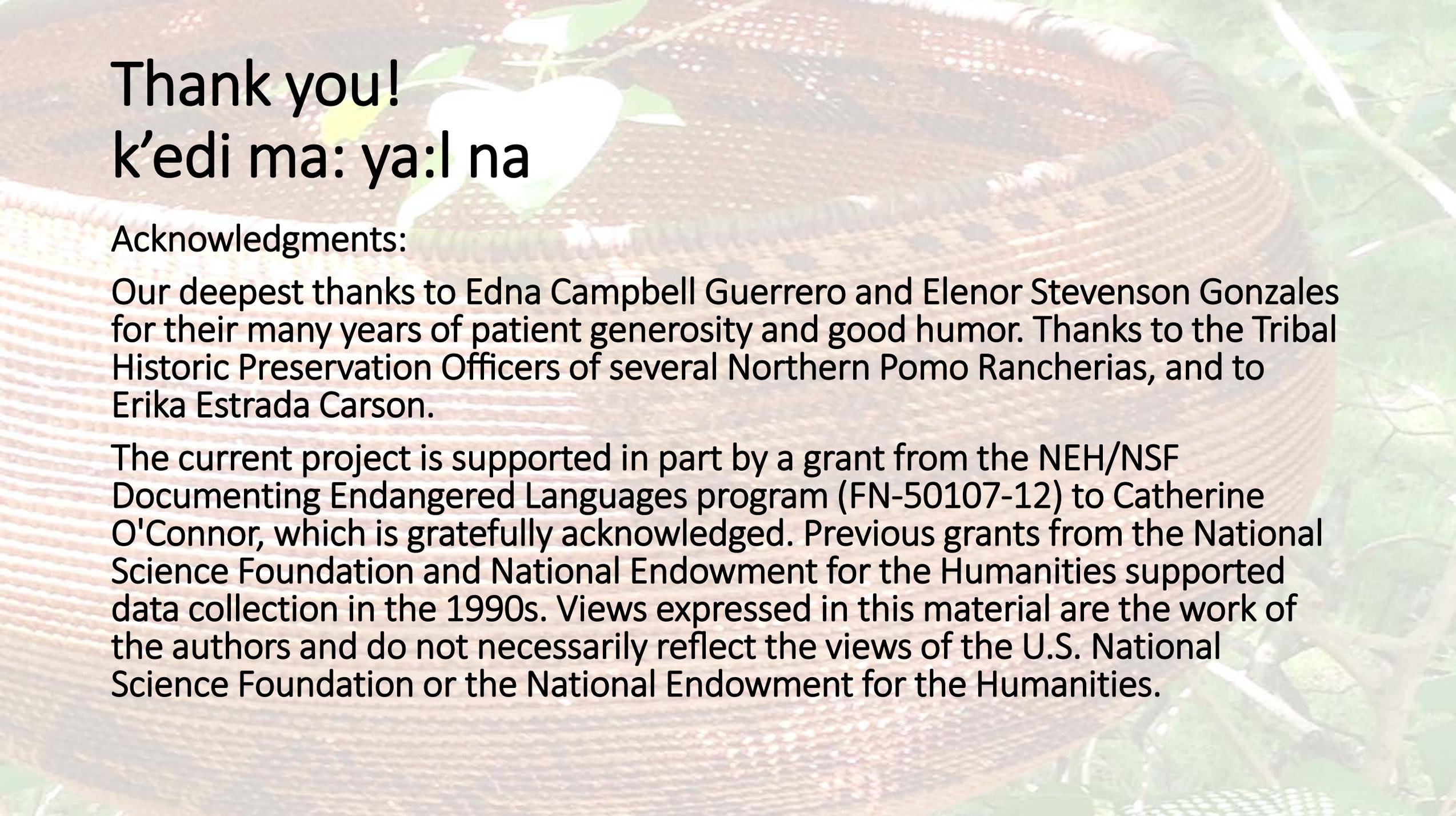
- Your team have a “coding competent” member who’s not afraid of looking into the code.
- Do not necessarily need to know to program, but should be able to follow directions in the documentation.
- Knowing how to program is helpful.

# Where to download...

❖ <http://eddersko.com/template/>



Github: eddersko



Thank you!  
k'edi ma: ya:l na

Acknowledgments:

Our deepest thanks to Edna Campbell Guerrero and Elenor Stevenson Gonzales for their many years of patient generosity and good humor. Thanks to the Tribal Historic Preservation Officers of several Northern Pomo Rancherias, and to Erika Estrada Carson.

The current project is supported in part by a grant from the NEH/NSF Documenting Endangered Languages program (FN-50107-12) to Catherine O'Connor, which is gratefully acknowledged. Previous grants from the National Science Foundation and National Endowment for the Humanities supported data collection in the 1990s. Views expressed in this material are the work of the authors and do not necessarily reflect the views of the U.S. National Science Foundation or the National Endowment for the Humanities.