An online multimedia dictionary of Hupa (Athabaskan)

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Presentation outline

- ## Contexts
  - Berkeley lexicon & documentation projects
- ## Databases
  - Lexicon, audio, video, photos
- ## Structure
  - How the databases fit in the web
- ## Demonstration

Berkeley online lexicon projects
(Survey of California and Other Indian Languages)

- **Yurok** (Algic, NW California)
  - Integrated multimedia database: lexicon, texts, audio, photos
  - See **linguistics.berkeley.edu/~yurok**

- **Karuk** (NW California)
  - Based on Toolbox lexicon by Susan Gehr and Bill Bright
  - See **linguistics.berkeley.edu/~karuk/karuk-lexicon.html**

- **Mono Lake Northern Paiute** (Uto-Aztecan)
  - Based on new fieldwork by Berkeley graduate students
  - See **linguistics.berkeley.edu/~paiute**

- **Southeastern Pomo** (Pomoan, Central Calif.)
  - Based on new fieldwork by Berkeley graduate students

- **Hupa** (Athabaskan, NW California)

California Indian Tribal Groups

Tolowa
Yurok
Chilula
Wiyot
Whilkut
Chimariko
Mattole
Nongatl
Lassik
Wailaki
Sinkiyone
Kato
Coast Yuki
Huchnom
Lake Miwok
Wappo
Coast Miwok

Karok
Hupa
Shasta
Modoc
Achomawi
Wintu
Atsugewi
Yana
Maidu
Nomlaki
Konkow
Yuki
Pomo
Patwin
Nisenan
Northern Paiute
Washo
Mono Lake Northern Paiute
Sierra Miwok
Costan
Northern Valley Yokuts
Mo
Fo
Owens Valley Paiute-Shosho
Western Shosho

Virtues of online language databases

- Resources are brought to users
  - Formerly, community members had to come to universities or other archives to find recordings and language material.
- Users determine what they see, how
  - Linguists, fluent speakers, and language learners may wish to see and hear very different subsets of the material.
- Materials of many different kinds can be integrated
  - On your home computer you can read dictionary entries, texts, pedagogical materials, listen to audio, look at maps, …
- Access can be controlled
  - Some communities may prefer open access, others not.
  - Some kinds of resource can be freely available, others not.
- For Athabaskan languages in particular
  - You don't have to decide if you're writing a root dictionary or a word dictionary. Users can decide what they want.

Databases

- **Lexicon**

- **Index of short audio clips**
  - Words and short phrases extracted from field recordings

- **Index of short video clips**
  - Legacy video plus new recordings made for this purpose

- **Index of pictures** (to illustrate vocabulary)

Lexicon source: *Hupa Language Dictionary*, 2nd ed., compiled by Victor Golla

bear: sa:ts' *common (black) bear (Ursus americanus)*

· **mikyow'** (or **mikyowe'**) *grizzly (Ursus horribilis)*

big: **nikya:w** *it is big, large;* **niwhkya:w** *I'm big;*

ch'ingkya:w *he is big;* **wingkyah** *it is getting big*

• **nitsa:s** *it is big around, thick (like a stick);* **niwhtsa:s** *I'm big around the waist*

break wind: **'iwhtseh** *I'm breaking wind, farting;*

ch'iwintse:t *he broke wind;* **do:-ch'itse:t** *don't break wind, no farting!*

General database format: XML

- "E**x**tensible **m**ark-up **l**anguage"
- Well-structured data, for example:

  <indented-list>

    <bullet>**Text**</bullet>
    <bullet>**More text**</bullet>

  </indented-list>

- Can be generated by Shoebox / Toolbox, Excel, Word, and other database programs
- Clear enough that you can edit it manually in a text editor if you want, or use an XML editor

Database example: Lexicon
(fragment of "hupa-lexicon.xml")

bear: sa:ts' *common (black) bear (Ursus americanus)*
·   mikyow' (or mikyowe') *grizzly (Ursus horribilis)*

```
<lxGroup sd="mammals">
    <hw>BEAR</hw>
    <id>228</id>
    <lx>sa:ts'</lx>
    <ge>common (black) bear (Ursus americanus)</ge>
  </lxGroup>
<lxGroup sd="mammals">
    <hw>BEAR</hw>
    <id>229</id>
    <lx>mikyow'</lx>
    <var>mikyowe'</var>
    <ge>grizzly (Ursus horribilis)</ge>
  </lxGroup>
```

Database example: Lexicon

big: nikya:w *it is big, large;* niwhkya:w *I'm big;*
ch'ingkya:w *he is big;* wingkyah *it is getting big*

• nitsa:s *it is big around, thick (like a stick);* niwhtsa:s
I'm big around the waist

```
<lxGroup>
   <hw>BIG</hw>
   <id>283</id>
   <pdGroup>
     <pdf>nikya:w</pdf>
     <pdge>it is big, large</pdge>
   </pdGroup>
   <pdGroup>
     <pdf>niwhkya:w</pdf>
     <pdge>I'm big</pdge>
   </pdGroup>
   <pdGroup>
     <pdf>ch'ingkya:w</pdf>
     <pdge>he is big</pdge>
   </pdGroup>
   <pdGroup>
     <pdf>wingkyah</pdf>
     <pdge>it is getting big</pdge>
   </pdGroup>
</lxGroup>
```

Encoding morphology & semantics

```
<lxGroup sd="food">
    <hw>ACORNS, CRACK</hw>
    <id>40</id>
    <pdGroup su="1sg" asp="imperf">
      <pdf>jiwa:k'iwhliwh</pdf>
      <pdge>I'm cracking acorns open</pdge>
    </pdGroup>
    <pdGroup su="1sg" asp="perf">
      <pdf>jiwa:k'e:lay</pdf>
      <pdge>I have cracked them open</pdge>
    </pdGroup>
  </lxGroup>
```

Database example: Audio index
(fragments of "hupa-audio.xml")

```
<item>
<url>http://linguistics.berkeley.edu/~hupa/Words/NedJackson/kile:xich_NJ.mp3</url>
<word>kile:xich</word>
<id>360</id>
<gloss>boy</gloss>
<speaker>Ned Jackson</speaker>
<source>LA 119</source>
</item>


<item>
<url>http://linguistics.berkeley.edu/~hupa/Words/VerdenaParker/whit'aw_VP.mp3</url>
<word>whit'aw</word>
<id>12</id>
<gloss>above me</gloss>
<speaker>Verdena Parker</speaker>
<source>VP-020906-03</source>
<audio-ref>17:50</audio-ref>
<editor>LN</editor>
</item>
```

Database example: Video index
(fragment of "paiute-video.xml")

```
<clip>
<url>http://linguistics.berkeley.edu/~hupa/Words-Video/ABALONE-SHELL DRESS B</url>
<word>xo'chik'-kya'</word>
<id>8</id>
<speaker>Billy Carpenter</speaker>
</clip>


<clip>
<url>http://linguistics.berkeley.edu/~hupa/Words-Video/deer,whiteVCD.mpg</url>
<word>k'iłixun-łixay</word>
<id>770</id>
<gloss>white deer, white deerskin</gloss>
<speaker>Verdena Parker</speaker>
<source>VP-111106-v1</source>
<video-ref>1:38</video-ref>
<editor>LN</editor>
</clip>
```

What to do with a database?

- Digital archive
  - Properly annotated, printed, maintained, a database is a permanent resource

- Transforming and querying databases
  - Program for querying and serving up the results of queries
  - Used in this process: XSL documents ("**E**xtensible **s**tylesheet **l**anguage")

XSL documents

- Formally = XML

- Contain instructions for doing stuff with other XML documents, such as (written however in computer language):

  – If e.g. you decide to change your writing system: "Find all examples of **u** under an <lx> node and transform them into **a**."

  – "If a lexicon entry contains a <sd> node that contains the text **"mammal"**, then make a new line containing certain data."
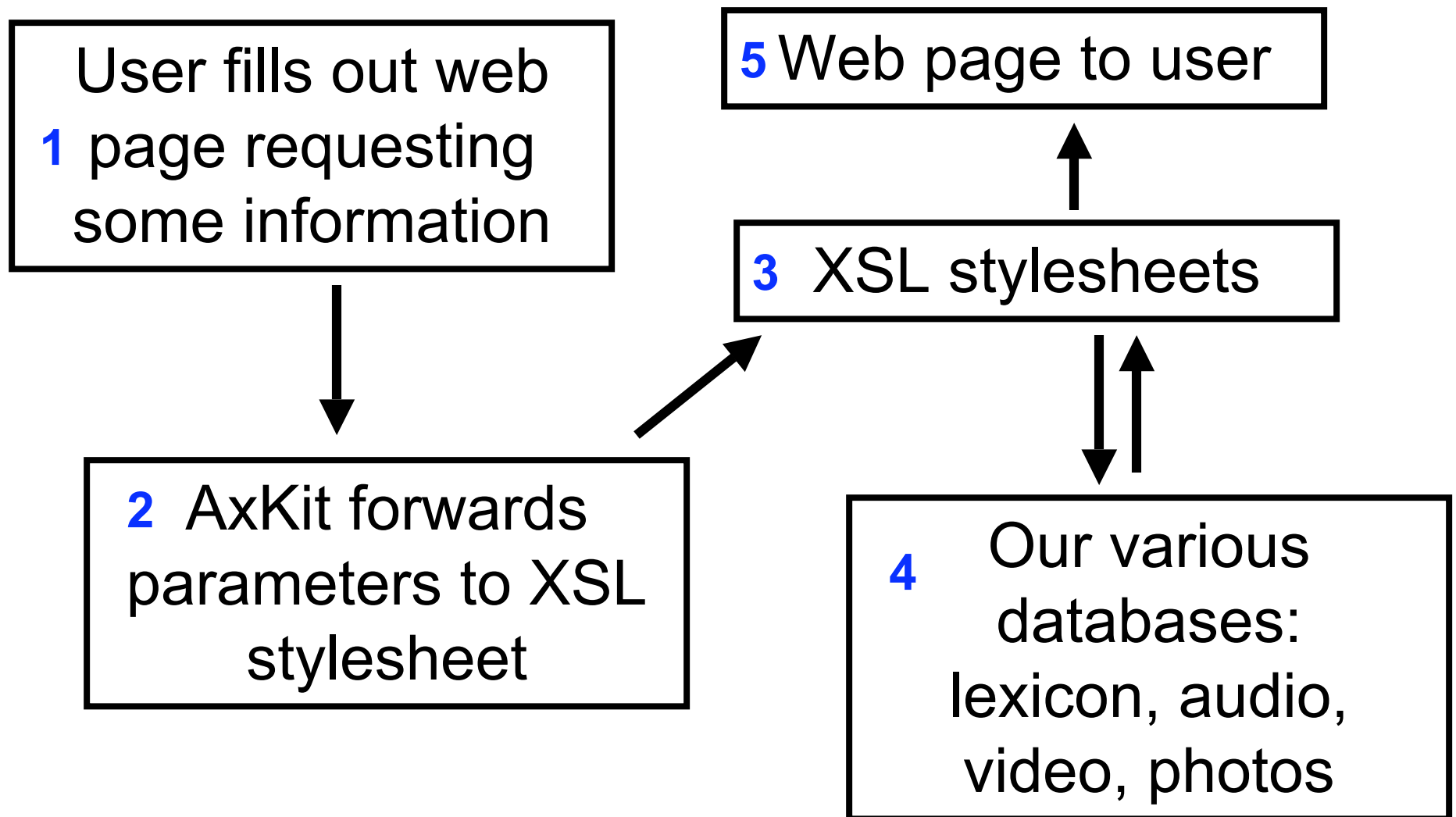
Stylesheets respond to web requests

- XSL documents contain instructions on how to format web pages given some parameters.

- A free application AxKit, installed on an Apache server, manages requests and forwards them with parameters to XSL.
  - AxKit (**axkit.org**) provides on-the-fly conversion from XML to HTML (web pages) or other formats
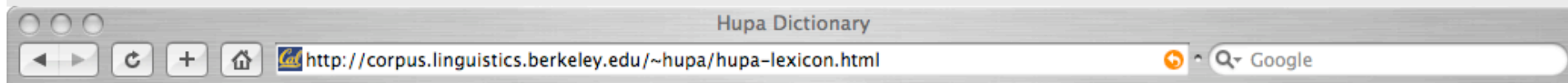
How requests are handled

- A web page request comes to the server:

  http://linguistics.berkeley.edu/~hupa/hupa-lexicon.xml?lx=ch&sd=mammals

- This really has two sub-parts: the basic web address (underlined) and a set of parameters.

- AxKit intercepts this request and knows that the output should be styled by the document **hupa-lexicon.xsl**, with the following parameter values:

  lx = ch
  sd = mammals

General flow of work

1 User fills out web page requesting some information

2 AxKit forwards parameters to XSL stylesheet

3 XSL stylesheets

4 Our various databases: lexicon, audio, video, photos

5 Web page to user

Details …

- … are somewhat technical and in some cases beyond my competence …
- … are in any case not well suited to general exposition in talk format, so …
- … you should ask me about it if you're interested.
- Bottom line: For all this you do need a server and a tech person, but most of the work you can (learn to) do yourself.

Hupa Online Multimedia Dictionary   **Contexts | Databases | Structure | Demonstration**

http://corpus.linguistics.berkeley.edu/~hupa/hupa-lexicon.html   Google

Hupa Dictionary | Na:tinixwe Mixine:whe'

© Hoopa Valley Tribal Council

Based on the *Hupa Language Dictionary* (second edition):

- compiled by Victor Golla
- edited by Ray Baldy, Louise Badgely, Ruth Beck, Calvin Carpenter, William Carpenter, Victor Golla, James Jackson, Minnie McWilliams, Elsie Ricklefs, and Herman Sherman
- editorial and technical work for this online version by Andrew Garrett, Lindsey Newbold, and Anne Pycha

This online version is very incomplete. The complete print version is also available online: http://dscholar.humboldt.edu:8080/dspace/handle/2148/48

Enter details below. To browse, leave all fields blank.

Search details

Hupa word contains:

Leave blank to include all Hupa words.

English translation contains:

Leave blank to include words with any translation.

Semantic domain:

Leave blank to include words in all semantic domains.

(Search) (Clear Form)

Hupa Dictionary

◀ ▶ | C | + | ⌂ | [Cal] http://corpus.linguistics.berkeley.edu/~hupa/hupa-lexicon.html   🔄 | Q▾ Google

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Enter details below. To browse, leave all fields blank.

Search details

Hupa word contains: [ ]
Leave blank to include all Hupa words.

English translation contains: [beat up]
Leave blank to include words with any translation.

Semantic domain: [▾]
Leave blank to include words in all semantic domains.

(Search) (Clear Form)

Hupa Online Multimedia Dictionary   **Contexts | Databases | Structure | Demonstration**

◄ ► | C | + | ⌂ | 🔒 http://corpus.linguistics.berkeley.edu/~hupa/hupa-lexicon.xml?   🔄 | Q▾ Google

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Your search: English **beat up** | New search

Search Index

k'isa'n he beats his wife up, abuses his wife, he's a wife-beater

FROM THE LEXICON (hupa-lexicon.xml)
<lxGroup>
   <hw>**ABUSE ONE'S WIFE**</hw>
   <id>**14**</id>
   <pdGroup **su="3sg" asp="imperf"**>
    <pdf>**k'isa'n**</pdf>
    <pdge>**he beats his wife up, abuses his wife,**
       he's a wife-beater</pdge>
   </pdGroup>
   <pdGroup **su="3sg" asp="perf"**>
    <pdf>**k'iwinsa'n**</pdf>
    <pdge>**he beat up his wife**</pdge>
   </pdGroup>
 </lxGroup>

FROM THE AUDIO LEXICON (hupa-audio.xml)
<item>
<url>**http://linguistics.berkeley.edu/~hupa/Words/VerdenaParker/k'iwinsa'n_VP.mp3**</url>
<word>**k'iwinsa'n**</word>
<id>**14**</id>
<gloss>**he abused his wife**</gloss>
<speaker>**Verdena Parker**</speaker>
<source>**VP-020906-03**</source>
<audio-ref>**20:59**</audio-ref>
<editor>**LN**</editor>
</item>

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Your search: English **beat up** | New search

Search Index

k'isa'n

Dictionary Entry [entry ID #14]

- IMPERFECTIVE 3SG **k'isa'n** he beats his wife up, abuses his wife, he's a wife-beater
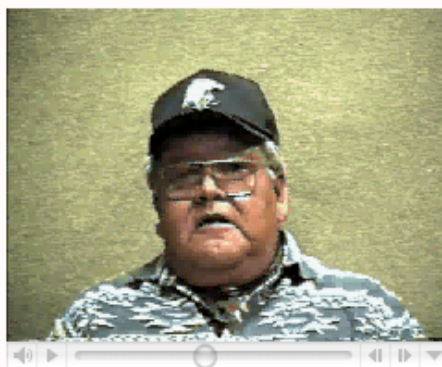- PERFECTIVE 3SG **k'iwinsa'n** he beat up his wife

Audio (click to listen)

- **k'iwinsa'n** (spoken by Verdena Parker)

Video (click to watch)

Video clips are large files (400-500K). If a clip does not open, your internet connection might be too slow or you might need to install a Quicktime plug-in.

- **k'isa'n** (spoken by Billy Carpenter)
- **k'isa'n** (spoken by M)

Hupa Dictionary | Na:tinixwe Mixine:whe'

© Hoopa Valley Tribal Council

Your search: English **beat up** | New search

Search Index

k'isa'n

Dictionary Entry [entry ID #14]

- IMPERFECTIVE 3SG **k'isa'n** he beats his wife up, abuses his wife, he's a wife-beater
- PERFECTIVE 3SG **k'iwinsa'n** he beat up his wife

Audio (click to listen)

- **k'iwinsa'n** (spoken by Verdena Parker)

Video (click to watch)

Video clips are large files (400-500K). If a clip does not open, your internet connection might be too slow or you might need to install a Quicktime plug-in.

- **k'isa'n** (spoken by Billy Carpenter)
- **k'isa'n** (spoken by M)

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Your search: English **deer** | New search

Search Index

dichwil tanned deerhide, leather, buckskin
dilqiwh forked-horn deer
dilqiwh-kyoh big forked-horned (deer)
diltsow orange-colored, brown, the color of summer deerhide
diltsow summer deerhide
diltsow-me'k'iłwal summer deerhide seed-beating burden basket
dilxich fawn, yearling; hide of a young deer
dilxich-dilma:y type of deerskin (grey deer)
diwa:n untanned deerhide (dried and ready for tanning)
k'ijiwe:xo-sita:n brisket (of deer)
k'iłixan deer (general term), specifically blacktail deer (Odocoileus hemionus); venison
k'iłixan-łiqay white deerskin
k'iłixan-me:ne:q'-nint'ik' deer's backstrap
k'iłixan-tehk'iwilky'o:ts' "Indian dumplings" (boiled deer meat mixed with dough)
k'iłxa:l freshly skinned (deer) hide
k'iłxa:l he is stretching a freshly skinned (deer)hide to dry on a drying frame
k'inanq' deer lick
k'iwhtsay' I'm drying (deerhide, salmon), seasoning (acorns, wood)
k'ixalo' a (deer's) hoof, deer-hoof rattle used by doctors (dried deer hooves, tied around a stick or bone)
k'ixas deer snare (set to catch deer)
ła'-k'itiyawh a herd of deer
mide'-xole:n cow, cattle; (archaic: buck deer or elk)
mingwiwhyo:l I'm chasing along, driving (animals, e.g. horses, cattle, pigs)
miq'it-k'iłxa:l frame on which deerhides are stretched to dry before tanning
nahxa-le:n large (and valuable) blanket made from two (deer)hides sewn together; a 'double' blanket
t'e' traditional deerhide blanket or robe, tanned with the fur left on; blanket (general term for both traditional and modern blankets)
ts'iłtin'-tł'ohł bowstring, made of twisted deer-sinew
tsang apron, made of fringed deerhide and worn in front of the skirt (kya') by women
xo'ji-t'e' traditional deerhide blanket, tanned with the fur left on
yik'iqang it (dog) barks in deer-hunting

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Your search: English **deer** | New search

Search Index

dichwil tanned deerhide, leather, buckskin
dilqiwh forked-horn deer
dilqiwh-kyoh big forked-horned (deer)
diltsow orange-colored, brown, the color of summer deerhide
diltsow summer deerhide
diltsow-me'k'iɬwal summer deerhide seed-beating burden basket
dilxich fawn, yearling; hide of a young deer
dilxich-dilma:y type of deerskin (grey deer)
diwa:n untanned deerhide (dried and ready for tanning)
k'ijiwe:xo-sita:n brisket (of deer)
k'iɬixan deer (general term), specifically blacktail deer (Odocoileus hemionus); venison
k'iɬixan-ɬiqay white deerskin
k'iɬixan-me:ne:q'-nint'ik' deer's backstrap
k'iɬixan-tehk'iwilky'o:ts' "Indian dumplings" (boiled deer meat mixed with dough)
k'iɬxa:l freshly skinned (deer) hide
k'iɬxa:l he is stretching a freshly skinned (deer)hide to dry on a drying frame
k'inanq' deer lick
k'iwhtsay' I'm drying (deerhide, salmon),

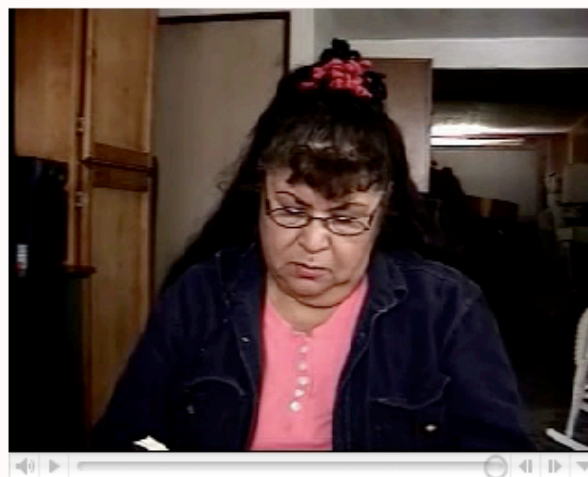## Dictionary Entry [entry ID #772]

k'ixas • deer snare (set to catch deer)

Note: archaic term

Video (click to watch)

Video clips are large files (400-500K). If a clip does not open, your internet connection might be too slow or you might need to install a Quicktime plug-in.

- **k'ixas** (spoken by Verdena Parker)

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Enter details below. To browse, leave all fields blank.

Search details

Hupa word conta
Leave blank to include

English translation c
Leave blank to includ

Semantic domain
Leave blank to include

(Search) (Clear For

| animals |
| arrows |
| baskets |
| birds |
| boats |
| body |
| ceremonies |
| clothing |
| colors |
| fish |
| fishing |
| ✓ food |
| games |
| geography |
| health |
| insects |
| kinships |
| mammals |
| modern |
| placenames |
| plants and trees |
| snakes |
| time |
| tools |

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Your search: semantic domain **food** | New search

Search Index

'e:bilos apples
'ina:wh they (nuts, acorns) are dropping
'inyeh-ky'a'awh he barbecues something by burying it and building a fire over it
'iwh'al I'm chewing it
ch'ilxan it is bitter, sour
dahtł'o:l'-mito' grape juice, wine
de'diłeh he bakes (bread, cake, etc.)
de:diwiłiq' bread, baked goods
de:diwiłiq'-łixan cake, cookies, pastries
de:nohq'it-xotse:lin' (Christian) sacramental wine
ditsik unshelled acorns
jiwa:k'iwhliwh I'm cracking acorns open
k'e:sde' lumps of acorn meal that are left over after pounding
k'idmat (water) is boiling
k'ijiwe:xo-sita:n brisket (of deer)
k'iłiwh small round cake made from ground grass seeds (archaic term)
k'iłiwhin black acorn meat
k'iłmehch boil it! cook it by boiling!
k'itast leached acorn flour, before cooking
k'itast-de:diwiłiq' acorn bread
k'itawhtsit I'm leaching acorns, soaking acorns to remove tannic acid
k'iwhdik' I'm cracking acorns, I'm pecking at something
k'iwhtsit I'm pounding acorns
k'iwinya'n acorn (general term)
k'iwitsit pounded acorns
kin-na:lma:ts' storage cask
ky'a:dawhne I'm gathering, picking up (acorns, apples, round objects)
me'-ch'iwa:t small bucket or bowl for acorn flour
me:chwilchwo:k brush used to sweep acorn flour (older term)
mił-łe:na:tsow brush for sweeping up (acorn) flour
miłto:y any basket large enough to cook in; (modern) pot, bucket
miq'it-k'iwiłiw butter
mitah-'a:'ił'e:n baking powder

Hupa Dictionary | Na:tinixwe Mixine:whe'

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Your search: semantic domain **food** | New search

Search Index

'e:bilos apples
'ina:wh they (nuts, acorns) are dropping
'inyeh-ky'a'awh he barbecues something
  by burying it and building a fire over it
'iwh'al I'm chewing it
ch'ilxan it is bitter, sour
dahtl'o:l'-mito' grape juice, wine
de'diłeh he bakes (bread, cake, etc.)
de:diwiłiq' bread, baked goods
de:diwiłiq'-łixan cake, cookies, pastries
de:nohq'it-xotse:lin' (Christian)
  sacramental wine
ditsik unshelled acorns
jiwa:k'iwhliwh I'm cracking acorns open
k'e:sde' lumps of acorn meal that are left
  over after pounding
k'idmat (water) is boiling
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k'iłiwh small round cake made from
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k'iłiwhin black acorn meat
k'iłmehch boil it! cook it by boiling!
k'itast leached acorn flour, before
  cooking
k'itast-de:diwiłiq'
k'itawhtsit I'm leaching acorns, soaking
  acorns to remove tannic acid
k'iwhdik' I'm cracking acorns, I'm
  pecking at something
k'iwhtsit I'm pounding acorns
k'iwinya'n acorn (general term)
k'iwitsit pounded acorns
kin-na:lma:ts' storage cask
ky'a:dawhne I'm gathering, picking up
  (acorns, apples, round objects)

Dictionary Entry [entry ID #22]

k'itast-de:diwiłiq' • acorn bread ['acorn dough-baked']

Video (click to watch)

Video clips are large files (400-500K). If a clip does not open, your internet connection might be too slow or you might need to install a Quicktime plug-in.

- **k'itast-de:diwiłiq** (spoken by Billy Carpenter)
- **k'itast-de:diwiłiq** (spoken by M)