

# Toolbox 1

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# With gratitude

- Albert Bickford, Toolbox instructor for InField 2008, 2010 & CoLang 2012
- Neil Brinneman, Shoebox instructor 2003
- Shoebox/Toolbox Field Linguist' s Toolbox Google Group
- Schoolmates at University of Oregon, especially Connie Dickinson

# Course Goals

- Review of Toolbox for use in creating lexical databases
- Introduction to connections to the topics related to dictionary projects (workflow, lexicography, community involvement)
- Information about how to learn more and get help after this class
- Study of how Toolbox is part of the Karuk dictionary project
- Other related software

# Getting to know each other

- What languages and projects are you working on with Toolbox?
- Did you bring your own computer and your own data to work with?
- Will you be using Toolbox on the computers in Watson 419? If so, I need to ask Jari to install the New Project Package.
- What are your current Toolbox-related questions or learning goals?
- Will someone else be setting up your project for you, or do you need to do it yourself?

# Logistics

- Main class: Tuesday June 19 to Friday June 22  
2:15 to 3:45 PM
- Location of Class: 419 Watson Library
- Possibilities for consultation outside of class

# Course Outline

- June 19, Tuesday
  - Introductions to our Toolbox projects
  - Discussion of the parts and preparation behind every Toolbox Project
    - Language Encoding (orthography, sort order)
    - Database Type development
    - Workflow
    - Project Management
  - Toolbox life cycle, considerations for migrating data

# Course Outline 2

- June 20, Wednesday

- Database types, continued

- Establishing a data structure / cheatsheet

- What are your fields? What rules do they require?

- Documenting all decisions that you make about your workflow, whether you work alone or as part of a team

- Getting to work – Using Toolbox

- June 21, Thursday

- More on Using Toolbox – Based on class need & interest

# Course Outline 3

- Friday, June 22
  - Related software (operating systems, Microsoft Word, Windows virtualization software for Mac users, backup software, etc.)
  - Outputting data
    - For online and print use (dictionaries, wordlists made with filters)
    - Working with a publisher or a printer



# Karuk Toolbox Project

- Started in November 2003
- Took 2-week course at JAARS
- William Bright data and participation
- Nailing down the language encoding and revising it in 2009
- Publication of a printed dictionary (2005) and an online dictionary (ongoing with UC Berkeley Linguistics)

# Toolbox Project Preparation

- Before data entry can start, you need to ‘teach’ Toolbox some things about your project.
  - Language Encoding
    - Orthography
    - Sort Order
    - Unicode compatibility

# Language Encoding Features

- The order for sorting (using that script).
- Upper and lower case forms of the characters (if any).
- Special groupings of characters, variables, which are useful in examining or searching the data.
- A font to represent the character shapes.
- Often, a special keyboard to facilitate entering the characters.

# Exercise: Creating your sort order

- What is the order of your writing system?
- Will your audience expect it to sort as English does, or will they expect some other sort order?

# Language Encoding

## Karuk\_2009

**Sort Order Properties**

Name:

Description:

Note: characters are separated by spaces.

OK Cancel Help

Primary characters (one group per line)

A Á Â Ã a á â ã  
Ch ch  
E É Ê e é ê  
F f  
H h  
I Í Î i î  
K k  
M m  
N n  
O Ó Ô o ó ô

Secondary characters ordered before unmarked primaries

Secondary characters ordered after

☐ Secondary characters follow their corresponding primaries

Ignore characters

- ! ( ) '

# Toolbox Project Preparation

- Database type
  - What types of information do you want to keep track of?
  - MDF – the Multi-Dictionary Formatter
    - What is it?
      - A database type that can function as a data structure standard and a data content standard
    - Read
      - MDFFields Toolbox Project and then read recommended parts of
      - MDF\_2000.pdf

# Toolbox Project Preparation

- Database type
  - What is your data structure?
  - What are your rules about entering data?
  - Do you keep a ~~cheatsheet~~ data structure and a notebook?
  - Karuk examples in Word and in Notebook

# What are databases & database types?

In Toolbox, databases  
can be:

dictionaries

one text or a collection  
of texts

In Toolbox, a database  
type is a file that:

includes a collection of  
properties that  
defines various fields  
of the database and  
some of the methods  
used for manipulating  
records.



# More about database types

- A Dictionary database type might contain:
  - A recommended set of Field Markers
  - Filters used for finding particular records in a lexicon (eg, all nouns, a particular morpheme, words with homonyms, etc)
  - The Date Stamp field marker \dt

# Making your own Dictionary type

- You can & should make a database type for your language by copying the MDF type and modifying the copy (see Karuk MDF)

# Fields in a Dictionary Database

karuk_dictionary.db	
<ul style="list-style-type: none"> <li>\lx Lexeme</li> <li>. \hm Homonym number</li> <li>. \lc Citation form</li> <li>. \a *</li> <li>. \a *</li> <li>. \a *</li> <li>. \a *</li> <li>. \u *</li> <li>. . \ps Part of speech</li> <li>. . . \va Variant form(s)</li> <li>. . . \ge Gloss (E)</li> <li>. . . \re Reversal (E)</li> <li>. . . \de Definition (E)</li> <li>. . . \lt Literally</li> <li>. . . \sc Scientific name</li> <li>. . . \so Source</li> <li>. . . \rf Reference</li> <li>. . . . \xv Example (v)</li> <li>. . . . . \xe Example free trans. (E)</li> <li>. . . . \ue Usage (E)</li> <li>. . . . \cf Cross-reference</li> <li>. . . . \ce Cross-ref. gloss (E)</li> <li>. . . . \sd Semantic domain</li> <li>. . . . \nt Notes (general)</li> <li>. . . . \ng Notes (grammar)</li> <li>. \dt Date (last edited)</li> </ul>	<p>imus 2</p> <p>imuus imuus muus múus</p> <p>v</p> <p>look_at</p> <p>to look at</p> <p>WB 609, p.346 KS 14. Pack-baskets (PM/JPH/JF) 011 vaa uum páyyaas'ara'iin kinimuustiheesh. Humankind will look at us here.</p> <p>Bound stem; occurs only with suffixes.</p> <p>10/May/2005</p>

# What fields might I use?

- See the list of all MDF fields pp. 13-39, *Making Dictionaries, a guide to lexicography and MDF*.
- Take time before you start making lots of entries into your database to, otherwise you might have to either correct them by hand or have someone write a CC Table to correct all the records.

# Exercise: Choose field markers & make a cheatsheet

- Basic minimum set
- \lx - Lexeme
- \a - Alternate form
- \u - Underlying form
- \ps - Part of speech
- \ge - Gloss
- \de - Definition
- \sd - Semantic domain
- \nt - Notes
- \dt - Date Last Edited

# An example data structure

	#Pattern for Template
\lx Karuk Lexeme	
\hm Homonym number	
\lc Citation form	
\a Alternate form	
\u Underlying form	
\ps Part of speech	
\va Variant form(s)	
\ge Gloss (E)	
\re Reversal (E)	
\de Definition (E)	
\lt Literally	
\sc Scientific name	
\so Source	
\rf Reference	
\xv Example (v)	
\xe Example free trans. (E)	
\rf Reference	
\xv Example (v)	
\xe Example free trans. (E)	
\ue Usage (E)	
\cf Cross-reference	
\ce Cross-ref. gloss (E)	
\sd Semantic domain	
\nt Notes (general)	
\ng Notes (grammar)	
\dt Date (last edited)	30/ Jun/ 2010
\num ID number	

# Toolbox Project Preparation

- Workflow matters
  - Do you work by yourself?
  - Are you working on a team?

# Toolbox Project Preparation

- Project management
  - Printed dictionaries have front and backmatter
  - Online dictionaries have websites with supplemental text, graphics and sound files
  - How will you keep track of master files, working files, passwords, contact information, and other valuable records?



# Toolbox Project Preparation

- Toolbox life cycle
  - “Toolbox is nearing the end of its life-cycle.” Albert Bickford, SIL, June 2008.
  - So Toolbox must be really near the end here in 2012?
    - “the [Toolbox] programmer is still active...working on a kind of large new feature which is taking its own sweet time...Our assignment for the foreseeable future is Toolbox. All programs and people are mortal, but we are doing our best to keep ourselves and Toolbox among the living.” Toolbox Support. May 1, 2012  
<http://groups.google.com/group/shoeboxtoolbox-field-linguists-toolbox/>
  - For now, I will keep using Toolbox, keeping my eye out for the day that it can't be run on contemporary computers/operating systems and support dries up.

# End of Day 1?

- Suggestions & adjustments for following days based on student need and preparation for Toolbox 2.
- Work on Language Encodings and Database Types

# Day 2

- Work on Language Encodings and Database Types
- Database types & workflow matters, continued
  - Establishing a data structure / cheatsheet
    - What are your fields? What rules do they require?
    - What does the MDF book say about your chosen fields?
    - What if, 5,000 records in, you want to add new fields?
    - Documenting all decisions that you make about your workflow, whether you work alone or as part of a team
- Dictionary work Google Doc

# On the Computer

- Go to the Project menu > Language Encodings...
- Select the vernacular Language Encoding and click the Copy button.
- Type your sort order into the Primary Characters box.

# What to include in your Toolbox data structure

## Information in a dictionary entry

- **Lexical/Semantic** – about the word and its meaning, how the word relates to other words in the language
- **Phonological/Phonetic** – pronunciation information
- **Grammatical** – paradigm forms, suppletion, gender/class information, etc
- **Social** – usage contexts, register, dialect, etc
- **Encyclopedic** – information about the item in the real world (e.g. how it's made, where it lives, etc)
- **Historical** – etymology of the word, is it a loan, etc
- **Source** – where the words came from

# Helpful Information

- Scientific Names <http://www.itis.gov/>
- Toolbox  
<http://www.sil.org/computing/toolbox/>
- SuperDuper! – for backup on the Mac  
<http://www.shirt-pocket.com/SuperDuper/SuperDuperDescription.html>
- (Carbon Copy Cloner) another backup solution for Mac

# Day 3

- June 21, Thursday

- Filtering data

- Helps with analysis and problem solving

- Let's set some up and use them

- Collaboration documents

- Data structure matters continued

- Related software (operating systems, Microsoft Word, Windows virtualization software for Mac users, backup software, etc.)

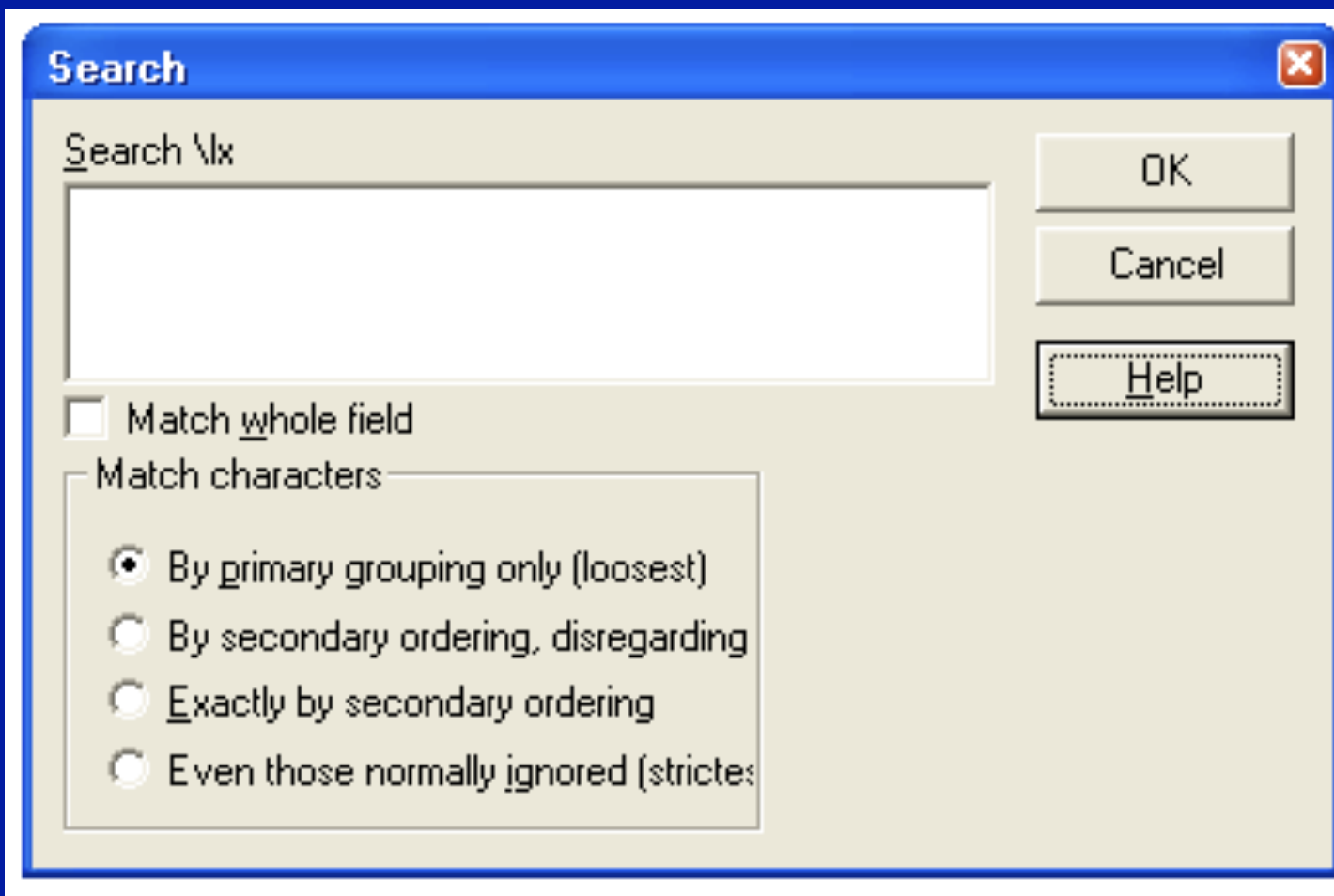
# Filters, Finding and Searching

- Find & Search are two different things in Toolbox

Search	Find
Locates only at the beginning of a field.	Locates anywhere in a field
Locates only in the field sorted by.	Any sorting is possible, but it is best to sort by the first field of the entry. <sup>19</sup>
Searches the entire database.	Hunts through the data only from the cursor forward (or back). Can be restricted to look within a single record.
Displays a list when it matches more than one item.	Travels linearly through the data, displaying matches as it comes to them.
Gives the option to match the whole <i>field</i> .	Gives the option to match the whole <i>word</i> .



# Search



A screenshot of a 'Search' dialog box. The dialog has a title bar with the word 'Search' and a close button. Inside, there is a text input field with the placeholder text 'Search \lx'. To the right of the input field are three buttons: 'OK', 'Cancel', and 'Help'. Below the input field is a checkbox labeled 'Match whole field'. Below that is a group box titled 'Match characters' containing four radio button options: 'By prietary grouping only (loosest)', 'By secondary ordering, disregarding', 'Exactly by secondary ordering', and 'Even those normally ignored (strictest)'. The 'Help' button is highlighted with a dashed border.

Search \lx

OK

Cancel

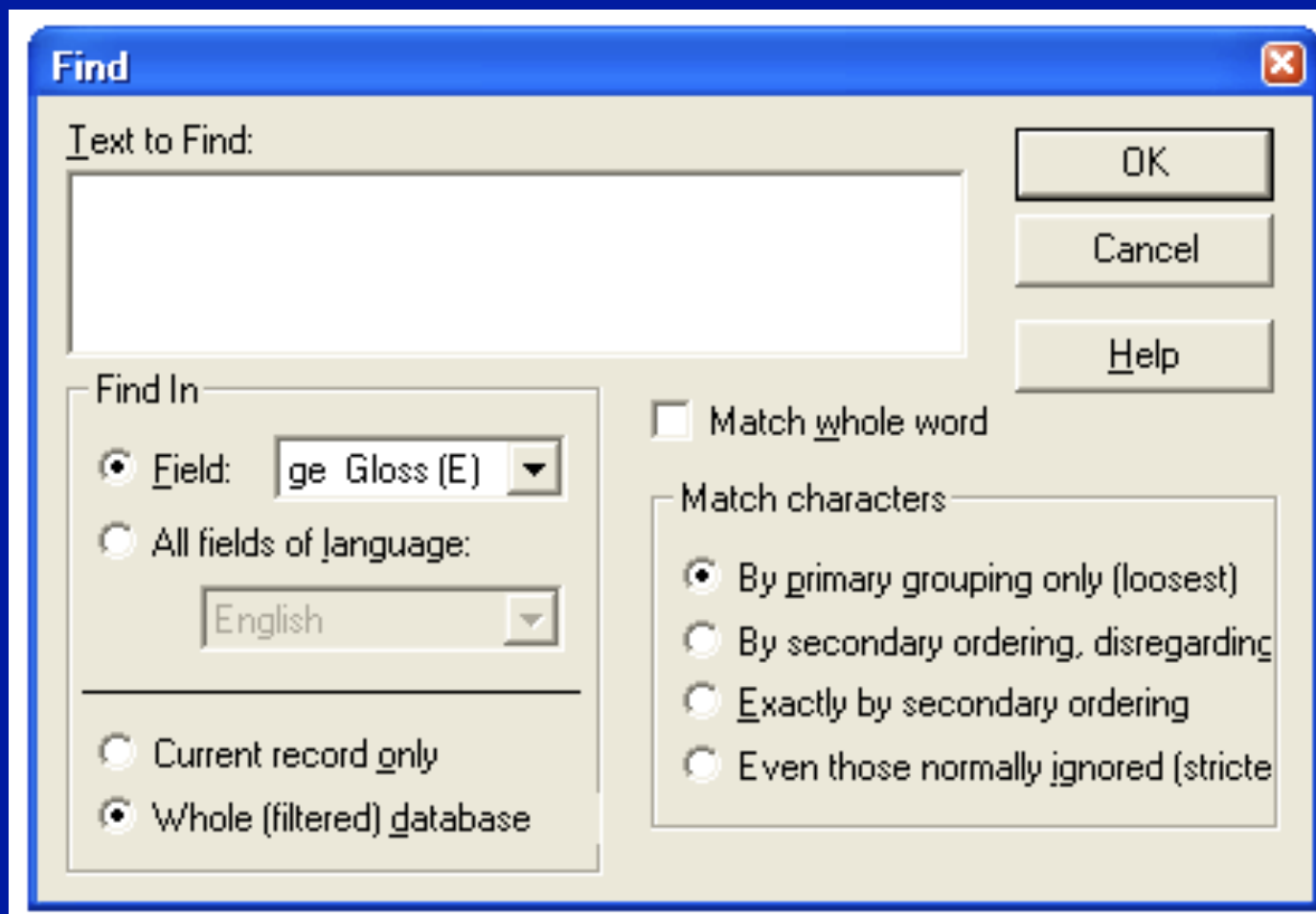
Help

☐ Match whole field

Match characters

- ☒ By prietary grouping only (loosest)
- ☐ By secondary ordering, disregarding
- ☐ Exactly by secondary ordering
- ☐ Even those normally ignored (strictest)

# Find



The image shows a 'Find' dialog box with a blue title bar and a close button. It contains a 'Text to Find' input field, three buttons (OK, Cancel, Help), and search options. The 'Find In' section has two radio buttons: 'Field' (selected) and 'All fields of language'. The 'Field' option has a dropdown menu showing 'ge Gloss (E)'. The 'All fields of language' option has a dropdown menu showing 'English'. Below these are two more radio buttons: 'Current record only' and 'Whole (filtered) database' (selected). To the right of the 'Find In' section is a checkbox for 'Match whole word'. Below that is a 'Match characters' section with four radio buttons: 'By primary grouping only (loosest)' (selected), 'By secondary ordering, disregarding', 'Exactly by secondary ordering', and 'Even those normally ignored (strict)'. The dialog box is set against a blue background.

**Find**

Text to Find:

OK

Cancel

Help

Find In

☒ Field: ge Gloss (E)

☐ All fields of language: English

☐ Current record only

☒ Whole (filtered) database

☐ Match whole word

Match characters

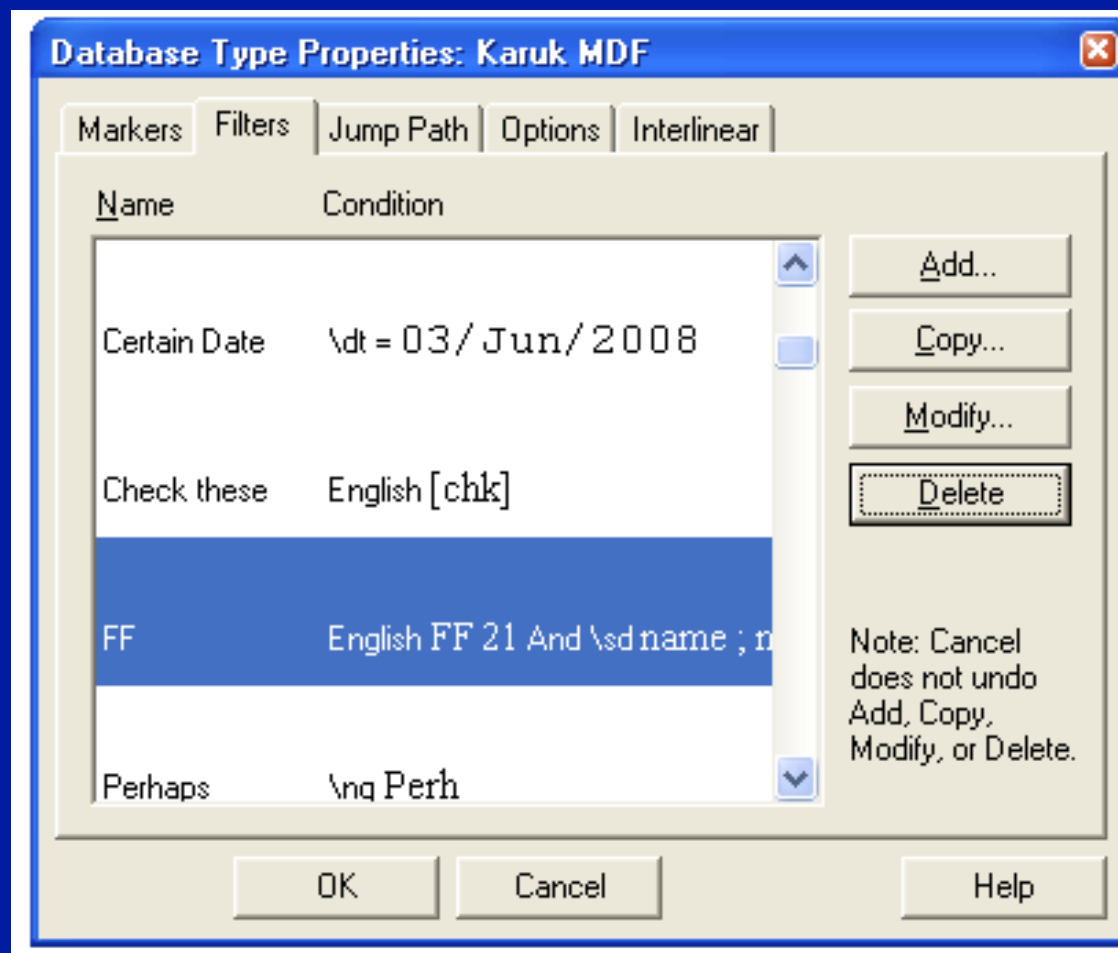
☒ By primary grouping only (loosest)

☐ By secondary ordering, disregarding

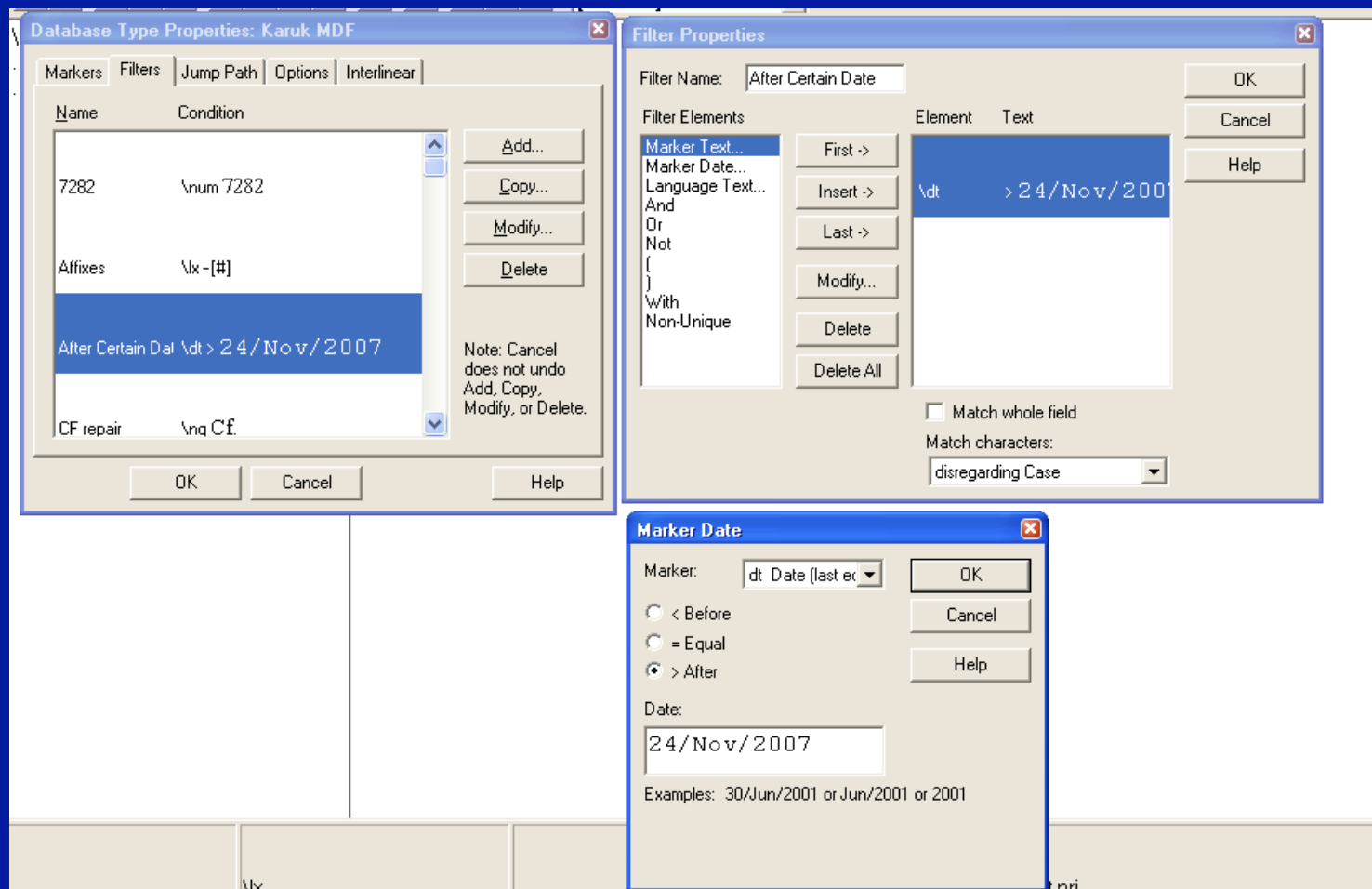
☐ Exactly by secondary ordering

☐ Even those normally ignored (strict)

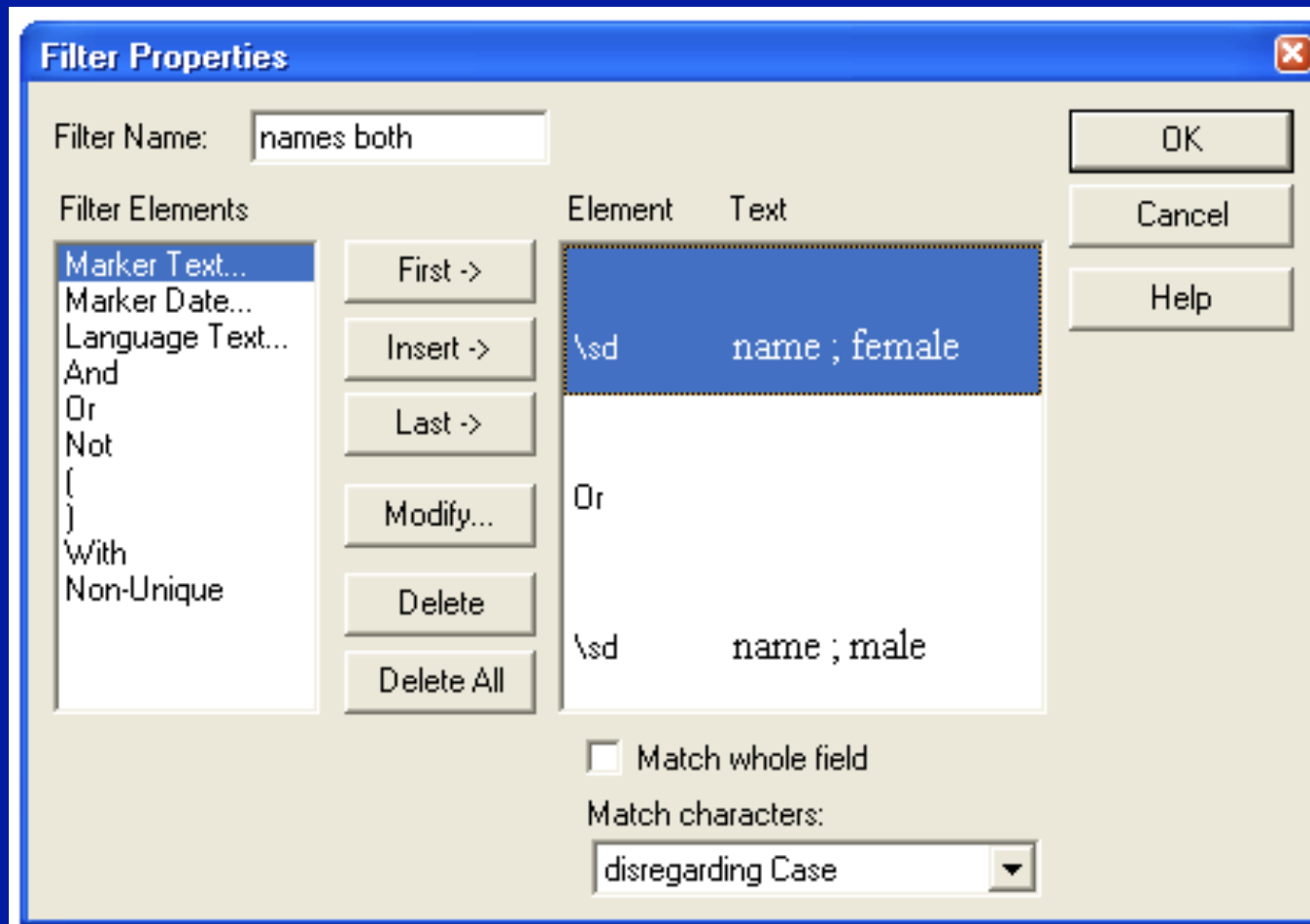
# Filter



# Workflow Filter: All Records after a certain date



# High Interest (and multi-part) Filter: All Personal Names



# Day 4

- Friday, June 22
  - Outputting data
    - For online and print use (dictionaries, wordlists made with filters)
    - Working with a publisher or a printer
  - User testing
    - Does your main audience like your work?

# Outputting Data: Print

- Word list – using a filter
  - Choose a \sd – Semantic Domain filter and output a word list.
- Whole database
  - Karuk to English
  - English to Karuk

# Outputting Data: Filtered Word List

The screenshot shows a linguistic data application interface. On the left is a list of field codes. The main area displays the data for the word 'áatikir'. A 'Filter Properties' dialog box is open, showing the filter 'semantic domain' with the element '\sd' and text 'household' selected.

Field Code	Value
\lx Karuk Lexeme	áatikir
\hm Homonym number	
\lc Citation form	áatikir / atikira-
\a Alternate form	
\u Underlying form	N
\ps Part of speech	
\va Variant form(s)	
\ge Gloss (E)	burden_basket
\re Reversal (E)	
\de Definition (E)	burden basket
\lt Literally	
\sc Scientific name	
\so Source	JPH ethno ? :240
\rf Reference	
\xv Example (v)	
\xe Example free trans. (E)	
\ue Usage (E)	
\cf Cross-reference	
\ce Cross-ref. gloss (E)	
\cf Cross-reference	
\ce Cross-ref. gloss (E)	
\cf Cross-reference	
\ce Cross-ref. gloss (E)	
\sd Semantic domain	household ; basketry
\nt Notes (general)	Equiv. to átimnam.
\ng Notes (grammar)	G754.9, G761.
\dt Date (last edited)	08/Apr/2008
\num ID number	62

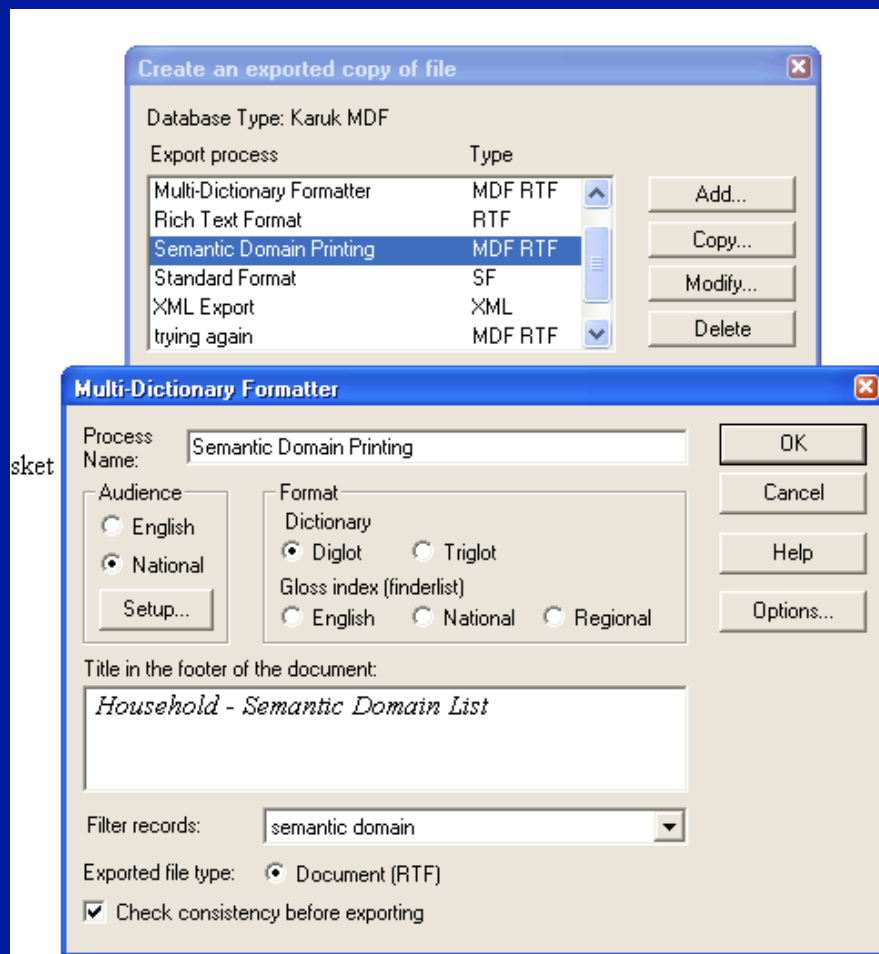
**Filter Properties Dialog:**

- Filter Name: semantic domain
- Filter Elements:
  - Marker Text... (Selected)
  - Marker Date...
  - Language Text...
  - And
  - Or
  - Not
  - (
  - )
  - With
  - Non-Unique
- Buttons: First ->, Insert ->, Last ->, Modify..., Delete, Delete All
- Table:
 

Element	Text
\sd	household
- Match whole field: ☐
- Match characters: disregarding Case



# Outputting Data: Filtered Word List



# Outputting Data: Filtered Word List

**Multi-Dictionary Formatter Options**

Dictionary

Select Fields to be Excluded...

☒ Sort by citation form

☐ Include lexeme with citation form

☒ Include example sentences

☒ Include notes

☐ Include regional with national

☐ Include non-MDF fields

Gloss index (finderlist)

☒ Include part of speech

OK

Cancel

Help

Marker hierarchy:

Document formatting

☒ Headwords in the header

☒ Date in the footer

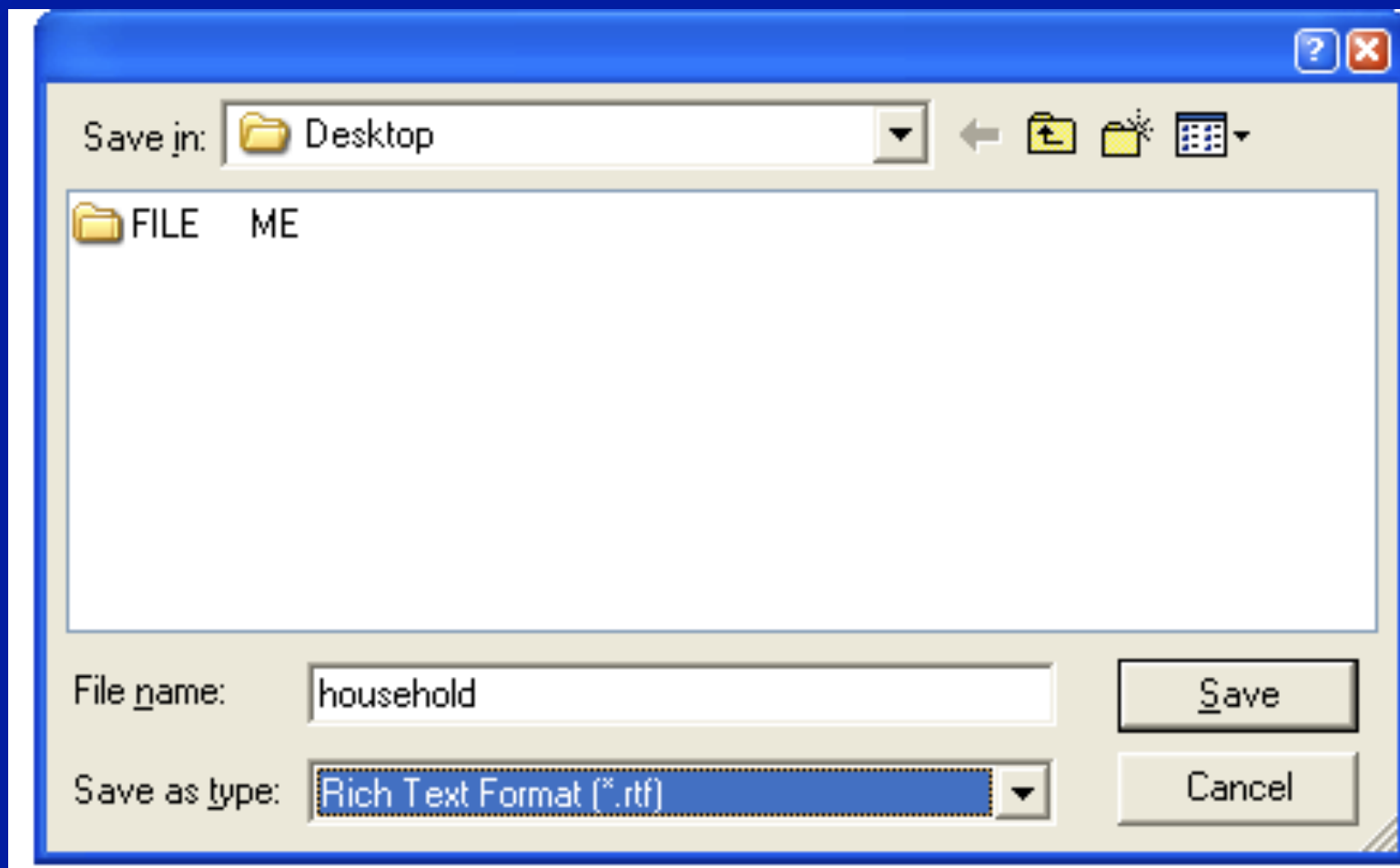
☐ Total number of entries

Page Setup...

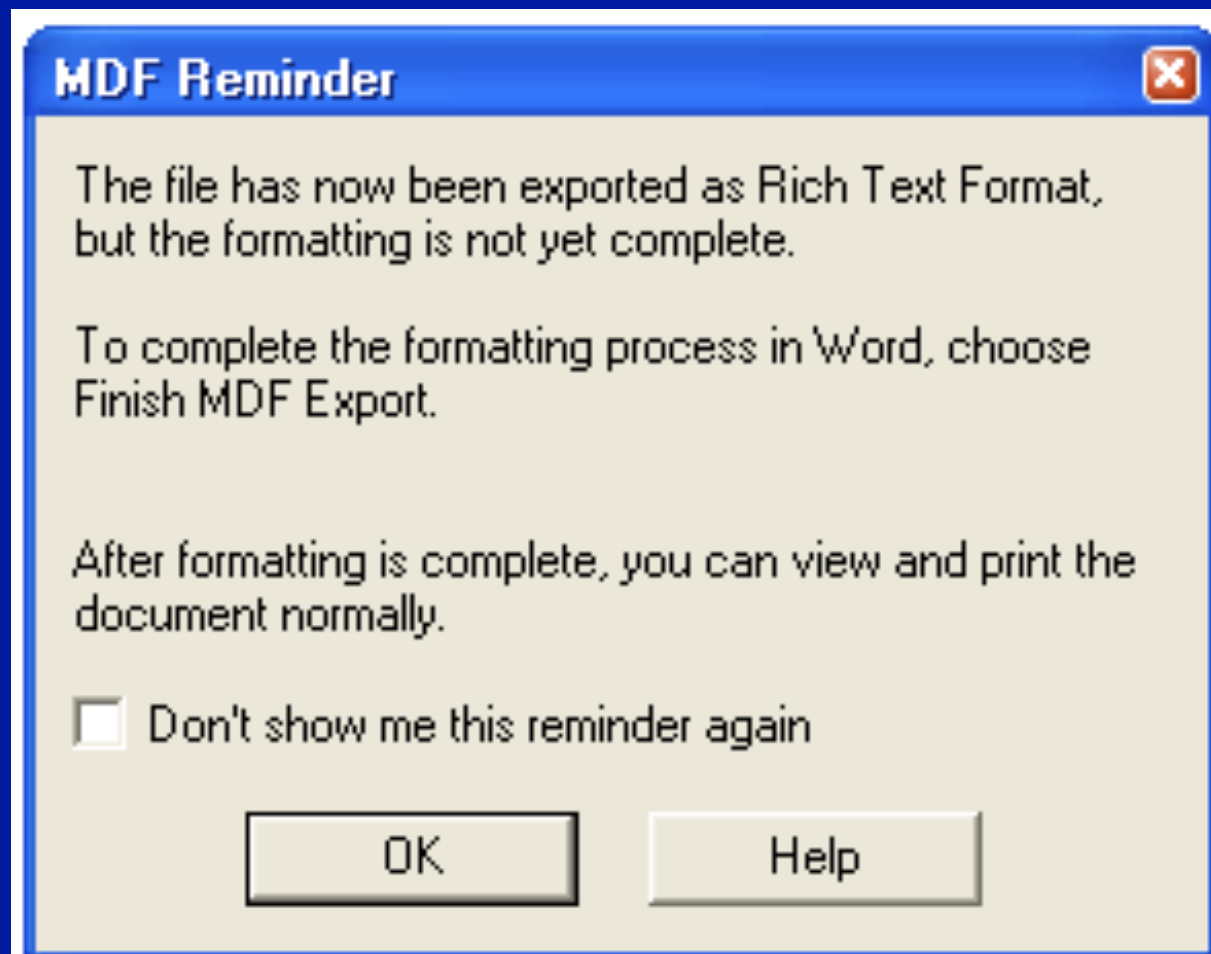
Web page copyright:

Next process in chain (optional)

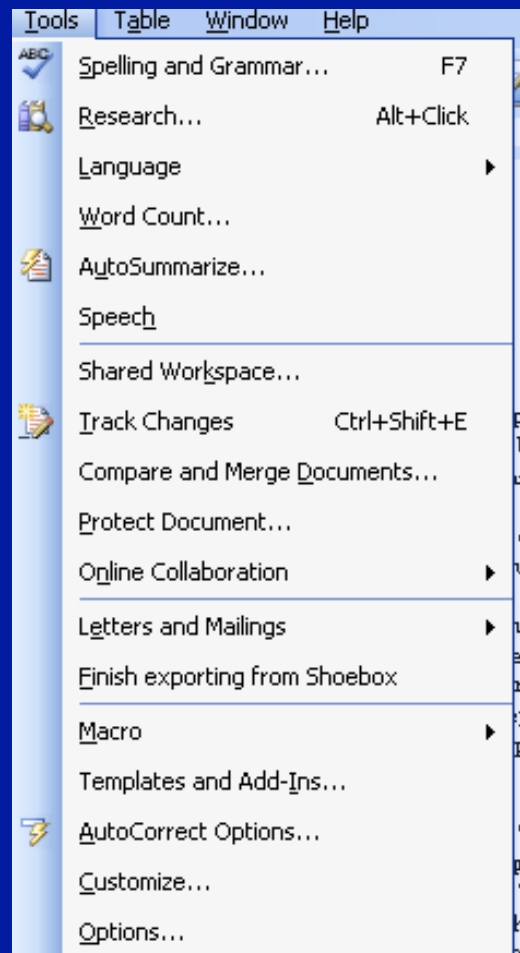
# Outputting Data: Filtered Word List



# Outputting Data: Filtered Word List



# Outputting Data: Filtered Word List



# Outputting Data: Filtered Word List

household\_Karuk\_to\_English - Microsoft Word

File Edit View Insert Format Tools Table Window Help

Type a question for help

85%

Times New Roman 10 B I U

1 2 3 4 5 6 7

á' kuma'irish innváram

A - a

á' kuma'irish upstairs. *Lit.* 'above floor'.  
 áatúkir / áatúkira- burden basket. *See:* áatí 'to carry in a burden basket'; -kír (f) 'instrumental'; -a ~ 0 'Deverbative'. *Note:* Equiv. to áimnam./  
 afikúvnaamich outhouse, bathroom. *Lit.* 'little excrement-house'. *See:* afikúvraam 'toilet'; -ich 'Diminutive'.  
 afikúvraam out-house, toilet. *Lit.* 'shit-house'. *See:* áaf 'excrement'; ákúvraam 'house'. *Note:* Dimin. is afikúvnaamich./  
 ahúkyáaram fireplace (in a house), chimney. *Lit.* 'fire-making place'. *See:* áah 'fire'; íkyav 'to make'; -raam 'place'.  
 ahíram fireplace, specifically for ceremonial purpose. *Lit.* 'burning place'. *Ref:* KT 125b.14 xás útechúp xás ahíramak úyundúth pamuxváah. Then he picked him up and held his head in the fireplace. *See:* áah, 'to handle fire'; áah 'fire'. *Note:* Locative is ahíramak./  
 ahupakúvnaam wooden washing bowl. *See:* áhup 'wood'; palcúvva 'to wash one's hands'; -rav 'in'. *Note:* JPH: 'would call'.  
 aptúrilh scratching stick, made of bone; comb.  
 arará'aan Indian string. *Lit.* 'Indian string'. *See:* áan 'string'.

Ch - ch

chivcháatar / chivcháatara- door (of living house); doorknob. *Lit.* 'door-closing instrument'. *Note:* Equiv. to chivcháakur, chivcháakuráam./

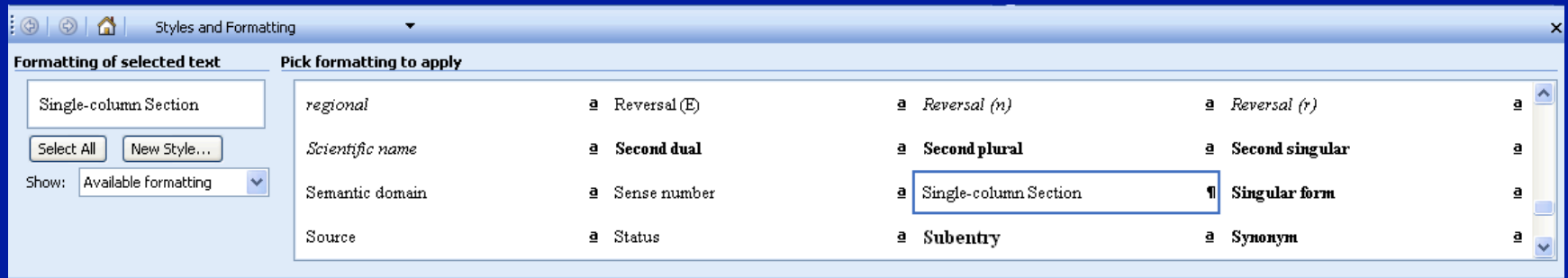
I - i

íheerahasipnunk tobacco basket (O'Neale, p. 40). *Note:* Equiv. to ulsipnuk./  
 írish floor. *Ref:* TK 97.7 karu háazi ínish vára 'piercing-through instrument'.  
 íkrupkúrilhar / íkrupkúrilvara- awl (used not for basketry, but for sewing buckskin etc.).

asa'asaxúkih kind of rock used for smoothing arrows. *Lit.* 'rock-file'. *See:* as 'rock'; asaxúkih 'file'.  
 asaxúkih file (tool). *Lit.* 'rock-rough'.  
 asiktaamnam bucket, originally made of buckskin. *Lit.* 'carrying water in'. *Note:* JPH has as'iktaamnam; also pufik'as'iktaamnam./  
 asinnváram bed. *Lit.* 'sleeping-place'.  
 asiparisiluráam dish cupboard. *Lit.* 'dish putting-down place'.  
 asiptaylútluráam dish cupboard. *Lit.* 'dish-lying place'.  
 atinákír / atinákira- rock used as a hand-hold for climbing out of house.  
 avahéekúvnaamich pantry. *Lit.* 'little food-house'.  
 axichéethvar / axichéethvara- mat to hold a baby, made of everlasting flower and iris twine. *Lit.* 'baby-mat'. *Note:* Equiv. to ithkamahyanaram'axichéethvar, with ithkamahyanaram'everlasting flower'.  
 axúrlúh Indian purse, an elk horn case for holding small objects.

# Outputting Data: Filtered Word List

To adjust the styles and formatting:



# Outputting Data: English to Karuk

**Multi-Dictionary Formatter**

Process Name:

**Audience**

☒ English  
☐ National

**Format**

Dictionary  
☐ Diglot ☐ Iriglot  
Gloss index (finderlist)  
☒ English ☐ National ☐ Regional

Title in the footer of the document:

Filter records:

Exported file type: ☒ Document (RTF)  
☐ Check consistency before exporting



# Outputting Data: English to Karuk

The screenshot shows a software window with a menu bar (Tools, Table, Window, Help) and a toolbar. The 'Tools' menu is open, displaying options like 'Spelling and Grammar...', 'Research...', 'Language', 'Word Count...', 'AutoSummarize...', 'Speech', 'Shared Workspace...', 'Track Changes', 'Compare and Merge Documents...', 'Protect Document...', 'Online Collaboration', 'Letters and Mailings', 'Finish exporting from Shoebox', 'Macro', 'Templates and Add-Ins...', 'AutoCorrect Options...', 'Customize...', and 'Options...'. The main window displays a list of Karuk words and their English meanings, organized by initial letter.

**A - a**

LOC takirraam.  
pukirihvar / ikupkuvihvara.

**B - b**

xtuuy.  
athouse N ma'timich.  
xtuuy.  
N tinvaap.  
y LOC takirraam.  
theerahasipnuuk.  
nivnaamich.  
nvaram.  
akvutvar / sichakvutvara.  
s.

boat for washing hands N pakxuyvarar /  
pakxuyvarara.  
boiling stone N iparishaha;  
N paxah'as / paxah'asa.  
bottle; glass N sak'asip.  
broom N tatuyshurar / tatuyshurara.  
bucket N asiktaammam.  
burden basket N aatikir / atikira-.

**C - c**

chimney LOC ahikyaraam.  
comb N aptih.  
comforter N matusavaas.  
corner of house pit N kixunipaa.

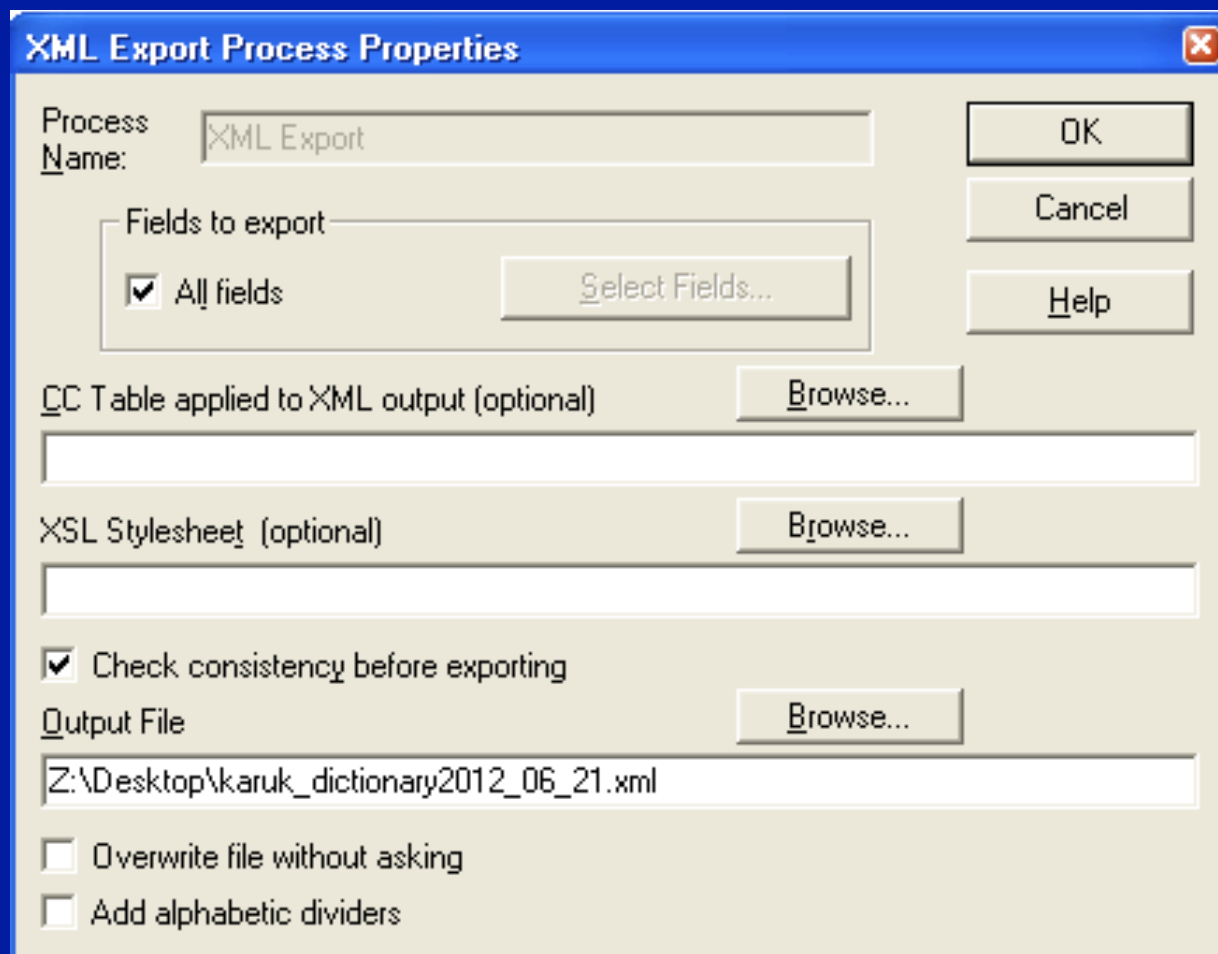
cup N iishram;  
N iishravaha.

**D - d**

dish cupboard N asipsarishihraam;  
N asipayhihiraam.  
doctor's apron N pavirutva.

door N chivchakar / chivchakara.  
drying rack N thivakar / thivakara.

# Outputting Data: XML format



The image shows a Windows-style dialog box titled "XML Export Process Properties". It contains several fields and checkboxes for configuring an XML export process. The "Process Name" field is set to "XML Export". Under "Fields to export", the "All fields" checkbox is checked, and there is a "Select Fields..." button. There are two "Browse..." buttons for optional "CC Table" and "XSL Stylesheet". The "Check consistency before exporting" checkbox is checked. The "Output File" field shows the path "Z:\Desktop\karuk\_dictionary2012\_06\_21.xml". At the bottom, there are two unchecked checkboxes: "Overwrite file without asking" and "Add alphabetic dividers". On the right side, there are three buttons: "OK", "Cancel", and "Help".

XML Export Process Properties

Process Name: XML Export

Fields to export

☒ All fields [Select Fields...](#)

CC Table applied to XML output (optional) [Browse...](#)

XSL Stylesheet (optional) [Browse...](#)

☒ Check consistency before exporting

Output File [Browse...](#)

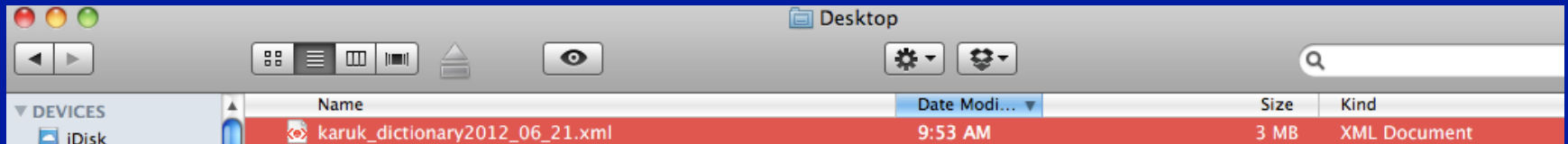
Z:\Desktop\karuk\_dictionary2012\_06\_21.xml

☐ Overwrite file without asking

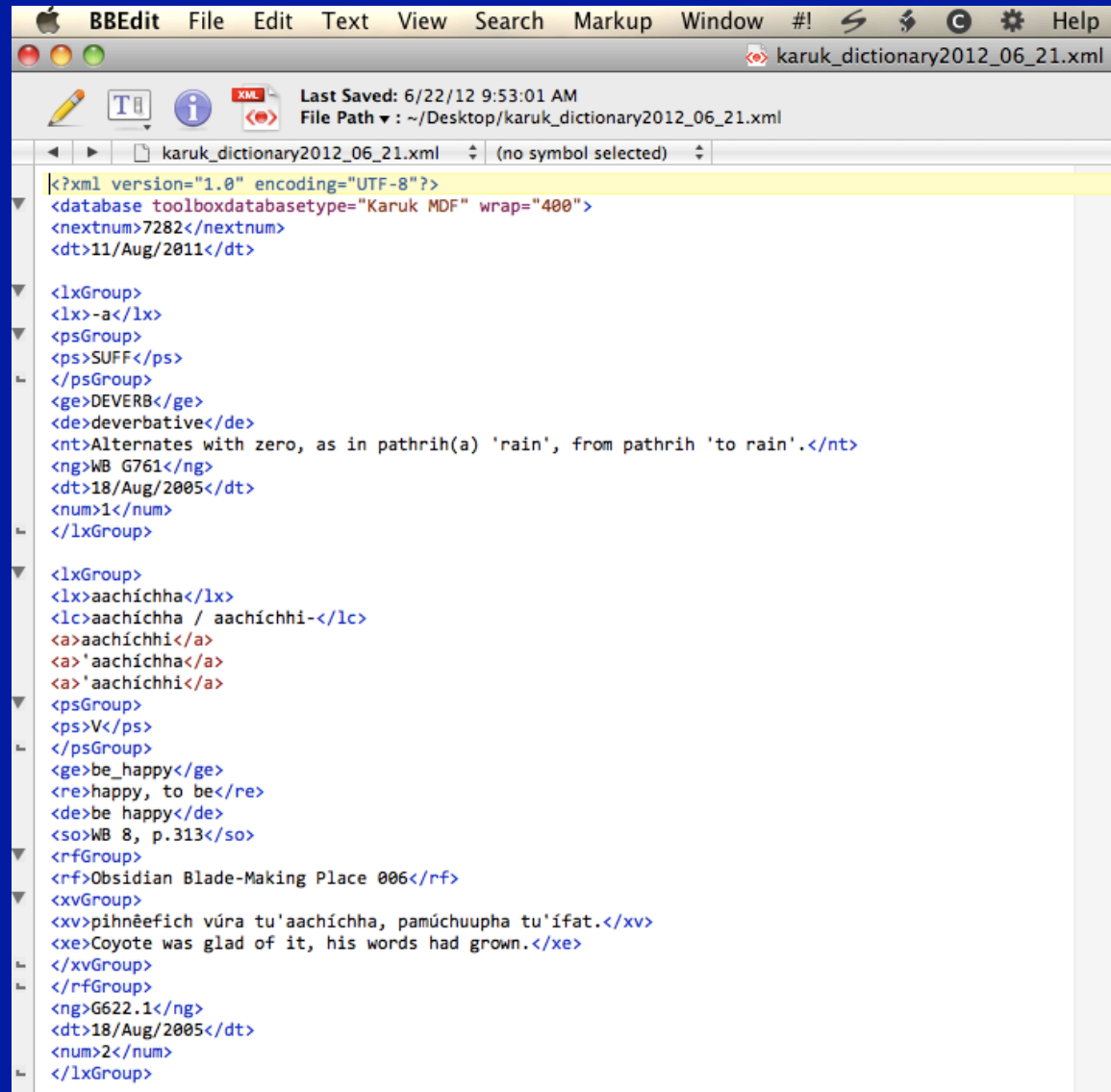
☐ Add alphabetic dividers

OK Cancel Help

# Outputting Data: XML format



# Outputting Data: XML format



The screenshot shows the BBEdit application window with the file 'karuk\_dictionary2012\_06\_21.xml' open. The XML content is as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<database toolboxdatatype="Karuk MDF" wrap="400">
  <nextnum>7282</nextnum>
  <dt>11/Aug/2011</dt>

  <lxGroup>
    <lx>-a</lx>
  </lxGroup>
  <psGroup>
    <ps>SUFF</ps>
  </psGroup>
  <ge>DEVERB</ge>
  <de>deverbative</de>
  <nt>Alternates with zero, as in pathrih(a) 'rain', from pathrih 'to rain'.</nt>
  <ng>WB G761</ng>
  <dt>18/Aug/2005</dt>
  <num>1</num>
</lxGroup>

  <lxGroup>
    <lx>aachíchha</lx>
    <lc>aachíchha / aachíchhi-</lc>
    <a>aachíchhi</a>
    <a>'aachíchha</a>
    <a>'aachíchhi</a>
  </lxGroup>
  <psGroup>
    <ps>V</ps>
  </psGroup>
  <ge>be_happy</ge>
  <re>happy, to be</re>
  <de>be happy</de>
  <so>WB 8, p.313</so>
  <rfGroup>
    <rf>Obsidian Blade-Making Place 006</rf>
  </rfGroup>
  <xvGroup>
    <xv>pihnēefich vúra tu'aachíchha, pamúchuupha tu'ifat.</xv>
    <xe>Coyote was glad of it, his words had grown.</xe>
  </xvGroup>
</rfGroup>
<ng>G622.1</ng>
<dt>18/Aug/2005</dt>
<num>2</num>
</lxGroup>
```

# Outputting Data: XML to online

<http://dictionary.karuk.org/>

## Karuk Dictionary

by William Bright and Susan Gehr  
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Your search: Karuk **aachíchha** (including **aachichha**) | [New search](#)

### Search Index

2 result(s)

**aachíchha** / **aachíchhi**- be happy  
**aachíchhar** / **aachichhara**- happy

### Dictionary Entry

lexicon ID #2 | revised 18 Aug 2005

**aachíchha** / **aachíchhi**- • v • be happy.

*Source:* WB 8, p.313

*Grammatical note:* G622.1

### Text examples

Display mode: sentence | [word](#) | [gloss](#)

- **xás tu'aachíchha patóo pma pamú'aramah.**  
And he was happy when he saw his child.  
| *Source:* Julia Starritt, "Coyote Marries His Own Daughter" (WB16) | [read full text](#)
- **tá ní'aachíchha patá na'ée pamipákurih.**  
I'm glad that you gave me your song.  
| *Source:* Nettie Reuben, "Coyote Trades Songs" (WB7) | [read full text](#)

# Working with a publisher or printer

- Find out their technical requirements
- Provide them with the format they require. In the case of my first printer, it was hard copy.
- See also “10. Completing the dictionary” from *Making dictionaries: a guide to lexicography and MDF*.

# User testing

- *Tools for Language Revitalization: The Online Karuk and Yurok Dictionaries.*  
Unpublished paper written for SJSU's LIBR 202: Information Retrieval.
- Dictionaries can have advisory boards, which could be a community's language committee or a subset of that committee.
  - Reviewing sections of the dictionary, handling questions or disagreements, discussing 'new words'

# Yôotva!

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