Documenting, analyzing, and teaching the grammar of direction in Karuk

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- These slides: linguistics.berkeley.edu/~karuk/resources/icldc-2015.pdf
Outline

Background
- The Karuk language
- Database and web interface

Directionals
- Grammatical overview
- Pedagogical challenges
- Pedagogical approaches: A smuggler’s guide

Conclusion
Karuk (aka “Karok”): northwestern California, along the Klamath River

(The word karuk means “upriver”.)
The Karuk language

- Contexts
  - Geography: spoken along the middle Klamath River
  - Classification: isolate within alleged Hokan group
The Karuk language

▶ Contexts
  ▶ Geography: spoken along the middle Klamath River
  ▶ Classification: isolate within alleged Hokan group

▶ Vitality
  ▶ 1850: estimated 1800-2700 speakers
  ▶ 1950: estimated 100 speakers (Bright 1957)
  ▶ 2015: <10 first-language speakers, 20-50 learners and L2 users
The Karuk language

- **Contexts**
  - Geography: spoken along the middle Klamath River
  - Classification: isolate within alleged Hokan group

- **Vitality**
  - 1850: estimated 1800-2700 speakers
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  - 2015: <10 first-language speakers, 20-50 learners and L2 users

- **Teaching**
  - 2-3 fluent L2 users
  - Teachers: most are learners
  - Where: 2-3 elementary and high schools; community classes
Karuk text corpus

- Database as of January 2015
  - 150 texts containing 23,511 words in 6,167 clauses
  - texts recorded in work with numerous elders by A. L. Kroeber, J. P. Harrington, Jaime de Angulo & Lucy Freeland, William Bright, Monica Macaulay, and the present authors
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- Genres
  - traditional narratives, medicine texts
  - anecdotes, personal history
  - procedural texts, descriptions
  - conversation
  - documentation sessions: responses to visual prompts (avoiding English), responses to translation tasks (elicitation)
Vina Smith in 2013

Photo: Florrine Super
Karuk lexicon database

- History
  - 138-page lexicon in Bright’s *The Karok language* (1957)
  - converted to Shoebox by Susan Gehr & William Bright
  - converted to XML format in 2000s; now a mySQL database
Karuk lexicon database

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Karuk lexicon database

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  - words in texts are parsed morphologically
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- **Scope**
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- All lexicon and text resources are for (and are actively used by) academic and community researchers, learners, and teachers.
Florrine Super in 2013

fâat ivíshtaanti?

pa'áama nivíshtaanti.

pay hum ivíshtaanti?
“Karuk Dictionary and Texts” online: Home page

Karuk Dictionary and Texts

A collaboration between the Karuk Tribe and the University of California, Berkeley

Dictionary  Sentences & Texts  Our Project  Audio Thesaurus  Abbreviations & Links

Search the Dictionary, Sentences, and Texts

Karuk: __________________ (☐ exact matches only)
Accent is ignored. To find ê, type é or e.

English: __________________

Meaning: __________________ (dictionary searches only)

Grammatical category: __________________ (dictionary searches only)

☐ Dictionary search
☐ Sentence and text search
☐ Audio only (only shows results with audio)

Search  Clear Form

(http://linguistics.berkeley.edu/~karuk)
“Karuk Dictionary and Texts” : Dictionary search run

Karuk Dictionary
by William Bright and Susan Gehr (© Karuk Tribe)

Your search: English run | New search
Index order: alphabetical | text frequency

Search Index
1-50 of 92 result(s)
Previous 50 | Next 50

árikka to run inside
árihipaa to run inland
íhméahr / íhméahr- (plural) to run (used of salmon, as well as of creatures with legs)
íhmárafak / íhmárafaku- (pl.) to run down from uphill
íhmárafuruk (pl.) to run indoors
íhmáraurik (salmon) to run into a creek
íhmárapithva / íhmárapithvu- (pl.) to run around
íhmáramnni (pl.) to run into
íhmáramishu (pl.) to run out
íhmáramooov (pl.) to run upstream from here
íhmárapurup / íhmárapuru- (pl.) to run downstream from here
íhmárapuruk (pl.) to run outdoors
íhmárapisip / íhmárapispec- (pl.) to start to run
íhmárawva / íhmárawvu- (pl.) to run to there
íhmárawver / íhmárawvera- (pl.) to run in through
íhmárawvarak (pl.) to run downstream from here
íhmárawvarayva / íhmárawvarayvu- (pl.) to run around indoors
íhmárawiš / íhmárawiru- (pl.) to stop running
íhmáur (pl.) to come running
íhmáunii (pl.) to run downhillward from here
íhmárapišhuk (liquid) to run out
íkbuni to be a ridge running away downhill
íkhuripaa 2 ridge running inland; in particular, Steinacher Ridge, near Katimin
íkhuruov / íkhurouva- 1 ridge running upriver
íkhuvey / íkhuvev- to grunt
íkrihrirovova to be a steep slope running upriverward
íkrihruv / íkrihruv- to slope running downstream from here
íkuroov / íkurooov- 3 ridge running upriver
íkviip / íkviip- to run (used of salmon, as well as creatures with legs)
íkviipaa runner
"Karuk Dictionary and Texts": Dictionary frequency sort

Karuk Dictionary

by William Bright and Susan Gehr (© Karuk Tribe)

Your search: English run | New search
Index order: alphabetical | text frequency

Search Index
1-50 of 92 result(s)
Previous 50 | Next 50

<table>
<thead>
<tr>
<th>ikvip / ikvirip-</th>
<th>to run (used of salmon, as well as creatures with legs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ikviriprup / ikviriprupu-</td>
<td>to run off downriver</td>
</tr>
<tr>
<td>ikviripship / ikvirishipriv-</td>
<td>to start to run</td>
</tr>
<tr>
<td>ithvip / ithvirip-</td>
<td>(two people) to run</td>
</tr>
<tr>
<td>ikviripmu / ikviripmu-</td>
<td>to run to (a destination)</td>
</tr>
<tr>
<td>ikviripunih</td>
<td>to run away downhill</td>
</tr>
<tr>
<td>irurav / irurama-</td>
<td>(pl.) to run away</td>
</tr>
<tr>
<td>ithrilsh / ithrilshhin-</td>
<td>to set (liquid) down; (liquid) to run together</td>
</tr>
<tr>
<td>ihmar / ihmara-</td>
<td>(plural) to run (used of salmon, as well as of creatures with legs)</td>
</tr>
<tr>
<td>ihmaravu / ihmaravu-</td>
<td>(pl.) to run to there</td>
</tr>
<tr>
<td>ihmaravarak</td>
<td>(pl.) to run downstream from here</td>
</tr>
<tr>
<td>ikviriproov / ikviriproovu-</td>
<td>to run upriver from here</td>
</tr>
<tr>
<td>ihmaraaroov</td>
<td>(pl.) to run upstream from here</td>
</tr>
<tr>
<td>ihmararup / ihmararupu-</td>
<td>(pl.) to run downstream from here</td>
</tr>
<tr>
<td>ikvipaan</td>
<td>runner</td>
</tr>
<tr>
<td>ikviripraa</td>
<td>to run up from uphill; to run up from downriver</td>
</tr>
<tr>
<td>ikviripvarak</td>
<td>to run down from upriver</td>
</tr>
<tr>
<td>iirimami</td>
<td>to drip into, (liquid) to run into</td>
</tr>
<tr>
<td>ishipyaraa</td>
<td>(pl.) to run in through</td>
</tr>
<tr>
<td>ithviripma / ithviripmu-</td>
<td>(pl.) to run to</td>
</tr>
<tr>
<td>ithviripraa</td>
<td>2 (two) to run up from downriver</td>
</tr>
<tr>
<td>ithviripunih</td>
<td>(two people) to run away downhill</td>
</tr>
<tr>
<td>ithviripuraa</td>
<td>(two) to run uphill from here</td>
</tr>
<tr>
<td>ithviripvarak</td>
<td>(two people) to run down from upriver</td>
</tr>
<tr>
<td>árîhkaa</td>
<td>to run inside</td>
</tr>
</tbody>
</table>
“Karuk Dictionary and Texts”: *ikvíripma*

**Search Index**
1-50 of 92 result(s)
Previous 50 | Next 50

**Dictionary Entry**
Lexicon ID #2203 | revised Nov 12 2014

*ikvíripma / ikvíripmu- • v • to run to (a destination)*

*Derivation:* [ikvíripma](#)
- *run-to*

*Source:* KV

*Grammatical note:* Cf. *-ma (a/u) 'to' (G753.10).

- *tuypshireek kúuk ikvíripmi*. Run to the hill! [Reference: KM 24.38]
- *kári xás tárupak kúna kúuk ukvíripma*. Then Grizzly ran over to the hatch door. [Reference: KS44. Grizzly and hazelnuts 036]

**Sentence examples (5)**

Display mode: sentence | word | word components

1. *iínáak tuikvíripma.*
   - He is running into the house.
   - Source: Vina Smith, Sentences about spatial relations (VS-13) | [read full text]
   - Spoken by Vina Smith | [Download] | [Play]

2. *xás yuráíkhufu uokkivíripma xás “nan’ifuth thufkaam kam’árihish.”*
   - And when he ran to Bluff Creek, then (he said) "Let it become a big creek behind me!"
   - Source: Julia Starrit, "Coyote Goes to a War Dance" (WB_KL-06) | [read full text]

3. *xás xóoxhirak uikvíripma.*
   - And he ran to Martin's Ferry.
   - Source: Julia Starrit, "Coyote Goes to a War Dance" (WB_KL-06) | [read full text]

4. *pasúntápan kunícìkh, kúük tóó uikvíripma, xás kvcívúra tsúffik píshíp.*
   - When they picked acorns, they would run there, and she would pick them all first.
   - Source: Julia Starrit, "The Bear and the Deer" (WB_KL-32) | [read full text]

5. *xás sáruk astíp kúuk uikvíripma.*
   - And she ran down to the river-bank.
   - Source: Julia Starrit, "The Bear and the Deer" (WB_KL-32) | [read full text]
Search Index
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**Background**
**Directionals**
**Conclusion**

**The Karuk language**
**Database and web interface**

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**“Karuk Dictionary and Texts”: Examples glossed**

**Dictionary Entry**
lexicon ID #2203 | revised Nov 2014

**ikviripma / ikviripmu-** • v • to run to (a destination)

*Derivation:* **ikvip-** run-to

*Source:* KV

*Grammatical note:* Cf. -ma (a/u) 'to' (G753.10).

- **tuypishpreek kūuk ikviripmi.** Run to the hill! [*Reference: KM 24.38*]
- **kāri xās tárapak kūna kūuk ukviripma.** Then Grizzly ran over to the hatch door. [*Reference: KS44. Grizzly and hazelnuts 035*]

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**Sentence examples (5)**

Display mode: sentence | word | word components

1. **ināak t-u-ikvipma**
   indoors PERF-3s(>3)-run.to
   He is running into the house.
   | Source: Vina Smith, Sentences about spatial relations (VS-13) | read full text
   | Spoken by Vina Smith | Download | Play

2. **xās yurúghtuuf p-go-ikvipma**
   then Bluff Creek NOMZ-3s(>3)-run.to
   than 1sPOSS-behind creek-large 3s(>3)-become
   And when he ran to Bluff Creek, then (he said) "Let it become a big creek behind me!"
   | Source: Julia Starratt, “Coyote Goes to a War Dance” (WB_KL-06) | read full text

3. **xās xōoxhirak u-ikvipma**
   than Martin's Ferry 3s(>3)-run.to
   And he ran to Martin's Ferry.
   | Source: Julia Starratt, “Coyote Goes to a War Dance” (WB_KL-06) | read full text
Julia Starritt, "Coyote Goes to a War Dance" (1957)


Project identifier: WB_KL-06

Text display mode: paragraph | sentence | word | word components

[1] pihneofich va a kāan mukrīhraam pihneofthuf'ipan.
Coyote's fishery was there at the end of Wilder Gulch.

He was always fishing there.

And he heard it, there was going to be a war dance.

A lot of people were going to come.

And two Orleans girls lived there.

And nobody had seen them.

[7] xās kunpīip " payēem xāsīk chī kinmāheesh."
And they said, "Now we are going to see them."

And Coyote had never yet seen them either.

[9] xās upiip " minik nīkyavunāa."
“Karuk Dictionary and Texts”: Text display glossed

Julia Starritt, "Coyote Goes to a War Dance" (1957)


Project identifier: WB_KL-06

Text display mode: paragraph | sentence | word | word components

[1] pihnêefich vaa káan mu-krihraam pihnêefthuf'-ipan
coyote so there 3sPOSS-fishing.platform Wilder.Gulch-end
Coyote's fishery was there at the end of Wilder Gulch.

then there always Intensive 3s(>3)-go.fishing-to-DUR
He was always fishing there.

then PERF-3s(>3)-hear soon 3s(>3)-war.dance-having-DENOM-FUT
And he heard it, there was going to be a war dance.

then human-much soon 3pl(>3s)-come.(pl.)-FUT
A lot of people were going to come.

[5] xás káan panamnih'ífápiit áxak kun'-iin
then there Orleans.girl two 3pl(>3s)-(two).be
And two Orleans girls lived there.

[6] xás pu'akara'-iin kín-maah-tih-ap
then nobody-TOPC 3pl>3pl-see-DUR-NEG
And nobody had seen them.
Dictionary search: -ríámnih ‘into a container’

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**Dictionary Entry**

lexicon ID #5175 | revised May 16 2013

-ríámnih • SUFF • in, into a container

**Derivatives (9)**

- askíámnih "to reach into (a container)"
- asip'akramnihan "young boy assistant in the Orleans world-renewal ceremony (Kroeber & Gifford, p. 7)"
- ihmárámnih "(pl.) to run into"
- lhúramnih "to put one's head in"
- liúramnih "to put one's head in"
- likúlmnahnih "to fall in"
- likúlmnahnihm "to drop something in"
- lpsáramnih "to bring (a person) into"
- ihshíakramnih "to jump into"

*Grammatical note: WB 753.13*

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**Sentence examples (8)**

Display mode: sentence | word | word components

1. páah-ak  ú-skasakramnih  xás  ithyár-uk  u-witkar
   boat-locative 3s(>3)-jump. into then across 3s(>3)-row.across
   He jumped into a boat, and he paddled across-river.
   | Source: Mamie Offield, "Coyote's Journey" (WB_KL-05) | read full text

2. xás  kun-plip  chhilí  nu-píkaan  chhilí  óok  kun-eethivhaaneen  nu-pípas-ramnih-1
   then 3p(>3s)-say  soon 1p(>3)-go get  soon here 3sPOSB-land 1pl(>3)-take.(person),home-into-IMPER
   And they said, "Let's go get her, let's bring her back into this world!"
   | Source: Mamie Offield, "How Deer Meat Was Lost and Regained" (WB_KL-33) | read full text

3. púvay-óok  u-pípas-ramnih-ánik  pa-púufich
   you see here 3s(>3)-take.(person),home-into-ANC the-deer
   So he brought Deer back here.
   | Source: Mamie Offield, "How Deer Meat Was Lost and Regained" (WB_KL-33) | read full text

4. tā  kun-gáan-samnih-va  pa-nukún-'up
   PERF 3p(>3s)-carry.(things)-into-PL.ACT the-3pl.POSS-possession
   They put their possessions in (the boats).
   | Source: Kettle Reuben, "The Boy from Itúkuk" (WB_KL-57) | read full text
Dictionary search: *ishkakrámnih* ‘jump into (a container)’

Karuk Dictionary

by William Bright and Susan Gehr (© Karuk Tribe)

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**Dictionary Entry**

**ishkáakramnih** • V • to jump into

*Derivation:* *ishkak-rámnih*

*jump-into*

*Note:* Cf. -ramníh 'into' (G753.13)

- *ta’itam pihnēefich upishkaakramniheen.* Then Coyote jumped back in (the boat). [*Reference:* KT 140.6 ]

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**Sentence example (1)**

Display mode: sentence | word | word components

1. *páahik úskaakramnih, xás ithyáruk uvítkar.*
   He jumped into a boat, and he paddled across-river.

* Source: Mamie Offield, "Coyote's Journey" (WB_KL-05) | read full text
Why directionals?

- Frequency

  12 of the 40 highest-frequency Karuk verbs contain directionals
Why directionals?

- Frequency
- Typology

‘Landau & Jackendoff (1993) … predict[ed] that there would be no preposition or spatial relator encoding featural properties of objects, e.g. none meaning “through a cigar-shaped object” … But the Californian language Karuk has precisely such a spatial verbal prefix [sic], meaning “in through a tubular space” (Evans & Levinson 2009)
Why directionals?

- Frequency
- Typology
- Sociocultural salience in a riverine ecology

\[\text{va\text{a} kú\text{th} sâam u-saam-núpu-tih} \]
that because.of down 3SG-flow-downstream.from.here-DUR

\[\text{káru vaa kúth áama u-kvírip-raa-tih} \]
also that because.of salmon 3SG-run-up.from.downriver-DUR

"That’s why (the water) flows downstream, and that’s why salmon run up the river."

(Mamie Offield, WB_KL-17)
Klamath River (in Karuk territory)
Karuk agglutinating verbal morphology

1. pu=na-’ísh-eesh-ara
   NEG=1S(>3)-drink-FUT-NEG
   “I won’t drink.”  (Nettie Reuben, WB_KL-01)

2. nee-shkáx-ishrih-math-eesh
   2S/3S>1S-be.quiet-down-CAUS-FUT
   “It will stop me.”  (Mamie Offield, WB_KL-45)

3. t-u-p-aatí-furuk
   PERF-3SG>3-ITER-carry.in.a.burden.basket-into.enclosed.space
   “She carried him back indoors.”  (Nettie Reuben, WB_KL-59)
Karuk verb structure (cf. Bright 1957)

- Prefixes
  - Agreement prefixes + iterative *ip*- ‘again’ + manner *kupa*- ‘so’ + event-internal pluractional reduplication

- ~60 suffixes
  - Derivational (5 position classes)
    - Class 1 (mobile): event-external pluractional *-va*
    - Class 2: several less productive suffixes
    - Class 3: *directionals*
    - Class 4: associated motion, benefactive, causative, etc.
    - Class 5: essive *-ahi* (valence-changing)
  - Inflectional (7 position classes)
    - Collective plural *-naa*, diminutive *-ach*
    - Tense-aspect: durative *-tih*, future *-avish*, past *-at*, etc.
    - Imperative *-i*, inverse *-ap*, negative *-ara*
Class 3 directional suffixes (Bright 1957)

- **Unpaired suffixes**
  - -kírih ‘in, onto fire’, -ku ‘onto a vertical surface’, -kúrih ‘into water’, -path ‘around in a circle’, -rañ ‘in(to)’, -rip ‘off, out’, -ruprin ‘through’, -suru ‘off, away’

- **Paired suffixes**

  - -mu "thither"
  - -rupu "hence downriverward"
  - -unih "down from a considerable height; hence downhillward"
  - -ura "up to a considerable height; hence uphillward"
  - -rú:vu "hence upriverward"
  - -sip(riv) "up to the height of a man or less"
  - -kaθ "hence across a body of water"

  - -kara "horizontally away from the center of a body of water"
  - -kara "into one’s mouth"
  - -rámnih "into a container"
  - -vára "in through a tubular space"
  - -ruprih "in through a solid"
  - -fúruk "into an enclosed space"
  - -vrin "in opposite directions"
  - -várayva "here and there within an enclosed space"

  - : -ra "thither"
  - : -ra "hither from downriver"
  - : -ra "hither from downhill"
  - : -faku "hither from uphill"
  - : -vára "hither from upriver"
  - : -iš(rih) "down from the height of a man or less"
  - : -rina "hither from across a body of water"
  - : -ríPa "horizontally toward the center of a body of water"
  - : -ríPa "out of one’s mouth"
  - : -ríṣuk "out of a container"
  - : -kiv "out through a tubular space"
  - : -rípra "out through a solid"
  - : -ríPuk "out of an enclosed space"
  - : -tunva "toward each other"
  - : -θuna "here and there in an open area"
Class 3 paired directional suffixes: A close-up

▶ Deictic specification

-\textit{mu} "thither"
-\textit{rupu} "hence downriverward"
-\textit{unih} "down from a considerable height; hence downhillward"
-\textit{ura} "up to a considerable height; hence uphillward"
-\textit{rō·vu} "hence upriverward"
-\textit{si}(ri)v "up to the height of a man or less"
-\textit{kaθ} "hence across a body of water"

: -\textit{ra} "hither"
: -\textit{ra} "hither from downriver"
: -\textit{ra} "hither from downhill"
: -\textit{faku} "hither from uphill"
: -\textit{vārak} "hither from upriver"
: -\textit{iš(ri)h} "down from the height of a man or less"
: -\textit{rina} "hither from across a body of water"

▶ Ground specification

-\textit{kara} "horizontally away from the center of a body of water"
:-\textit{rā} "horizontally toward the center of a body of water"
-\textit{kara} "into one's mouth"
-\textit{rānrih} "into a container"
-\textit{vāra} "in through a tubular space"
-\textit{rūprīh} "in through a solid"
-\textit{fūrūk} "into an enclosed space"

: -\textit{rīPa} "out of one's mouth"
: -\textit{rūsuk} "out of a container"
: -\textit{ki} "out through a tubular space"
: -\textit{rūpra} "out through a solid"
: -\textit{rūPuk} "out of an enclosed space"

▶ Miscellaneous

-\textit{vri} "in opposite directions"
-\textit{vārayva} "here and there within an enclosed space"

: -\textit{tun} "toward each other"
: -\textit{ṣuna} "here and there in an open area"
Semantic and syntactic analysis


(6) Classification of directional suffixes
I. Directionals: do not add argument
II. Applicatives: add argument
   A. Simple applicatives (Path)
   B. Applicative + object (Path + Ground): add and conflate argument
      1. Applicative + object; category of ground generically specified
      2. Applicative + object; ground as medium generically specified
      3. Applicative + object; ground specified
   C. Applicative + object (Path + Ground): add/conflate deictic argument

- Examples

- I: -ishrih ‘down (from a person’s height)’
- IIA. -suri ‘off’
- IIB(1). -ramnih ‘into a container’
- IIC(1): Distal goal. -mu ‘to there’
- IIC(3): Proximal goal + path. -faku ‘to here from uphill’
Challenge 1: Semantic complexity

Some more complex things may be easier to learn!

▶ Simplicity may correspond to generality of usage
  ▶ Syntactic simplicity: fewer features, required arguments
  ▶ Semantic simplicity: general meaning, less topological specificity

This may in turn yield difficulty in learning and teaching.

▶ Trade-off: analytic complexity ≠ pedagogical complexity
Challenge 2: Translation non-equivalence

General directionals correspond only imperfectly to English general-purpose prepositions. Mismatches are bidirectional:

- **-mu ‘thither’:** ikfuk ‘crawl’ → **ikfúuk-mu** ‘crawl to’
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- **-mu** ‘thither’: ikfuk ‘crawl’ $\rightarrow$ ikfúuk-mu ‘crawl to’
- **ikyiũ** ‘fall’ $\rightarrow$ ikyii-mu ‘reach’

\[
\text{káan ú-kyii-m-eesh} \\
\text{there 3SG-fall-towards-FUT}
\]

“It will reach there.” (DF 07)
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  “It will reach there.”

- Other Karuk suffixes
  
  - **-ûunish**: *chuph-ûunish* ‘talk to’, *ikvît.h-ûunish* ‘dream about’, *pikshayv-ûunish* ‘tell lies to’
  
  - Benefactive **-ih**: *ikyviichv-ih* ‘work for’; *iktáv-ih* ‘hand to’ (iktáv ‘hold’), *ikyéeh* ‘make for’ (ikyav ‘make’), *pakurîihv-ih* ‘sing to’
Challenge 3: Sociocultural changes

- Many elder speakers and community members live outside traditional Karuk land, e.g. where the riverine landscape is not salient.
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- Many elder speakers and community members live outside traditional Karuk land, e.g. where the riverine landscape is not salient.
- Even on the Klamath River, modern communication and transportation are not so river-oriented.
- Some of the less common directionals are used rarely if at all by today’s elders.
Pedagogical approaches: A smuggler’s guide

- Smuggle grammar into life (adapted from L. Hinton)
- Break down grammatical patterns into pragmatic contexts that are determined by semantically coherent neighborhoods: local coherence maxima
- Comparisons from yesterday:
  - Grenoble (2015) on situational contexts for language learning
  - Cox (2015) on paradigmatic learning in complex morphology

We encourage situational paradigms!
Example 1: Inside and outside

A semantically specific pair

- **furuk** ‘into an enclosure (e.g. house)’

1. kári xás kun-p-ihmára-furuk iínâak
   and and 3PL-ITER-run.PL-into.enclosure indoors
   ‘Then they ran back indoors.’  (Nettie Reuben, WB_KL-11)

2. xás chavúra u-’árih-furuk
   and eventually 3SG-jump-into.enclosure
   ‘Then eventually she jumped in (her lair).’
   (Julia Starritt, WB_KL-32)

- **rupuk** ‘out of an enclosure (e.g. house)’

3. pa=kéevniikich u-’árih-rupuk
   the=old.woman 3SG-jump-out.of.enclosure
   ‘The old woman jumped out.’  (Lottie Beck, WB_KL-18)
Example 2: Down and up

▶ Motion without -ish(rih) ‘down’

1. xás vúra xára p=óo-kyiv
   and INTNS long.time COMP=3SG-fall
   ‘It was a long time that he fell.’ (Mamie Offield, WB_KL-09)

▶ Motion with -ish(rih) ‘down’

2. kári xás u-kyív-isher òapun
   and and 3SG-fall-down ground
   ‘And (Grizzly) fell to the ground.’ (Nettie Reuben, WB_KL-34)

3. tá ni-kyív-isher
   PERF 1SG-fall-down
   ‘I fell down.’ (Lucille Albers, LA-02)
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- Analogously
  - -sip(riv) ‘up’
  - transitive frames
  - aspectual uses: ‘down’ > resultative, ‘up’ > inceptive
Example 3: Nonalternating -mu verbs

Some very common verbs contain -mu but do not alternate with simpler forms.

▷ uumu ‘arrive’
▷ vâaramu ‘go away, leave’
   Dual iyâaramu ‘go, leave’
   (Plural has different morphology)
▷ ñipmu ‘return, arrive (there) again, go back’

These select for a Goal complement.
Example 4: Alternating -mu verbs

- **Location context**
  - \( \text{pa=}’ávansa úuth u-ví-tih} \)
  \( \text{the=}\text{man out.in.water 3SG-paddle-DUR} \)
  ‘The man is paddling out in the water.’
  - \( \text{pá=}paa úuth u-thívruuh-tih} \)
  \( \text{the=}\text{boat out.in.water 3SG-float-DUR} \)
  ‘The boat is floating out in the water.’

- **Goal context**
  - \( \text{chavúra } \text{yíiv tá kun-víit-ma} \)
  \( \text{eventually far PERF 3PL-paddle-towards} \)
  ‘Eventually they paddled a long way.’
  - \( \text{chavúra kaanvári u-thívruuh-ma} \)
  \( \text{eventually around.there 3PL-float-towards} \)
  ‘Eventually he floated to that vicinity.’
Conclusion: Teaching directionals

For any complex grammatical categories:

- Identify local coherence maxima:
  - pragmatic or situational contexts where semantically coherent patterns can be identified and contrasted with paradigmatically opposed contexts.
  - Cf. teaching the German accusative vs. dative, or Greek or Latin cases by sub-pattern — ‘dative of disadvantage’, etc.

- It is helpful to know:
  - what is frequent and what is infrequent in usage
  - what all the derivatives are, all the examples of all the derivatives, or all the examples of just one derivative

Our database and web interface have been useful tools.
Yôotva!

References cited


► Cox, Christopher. 2015. From technical to teachable: Teaching morphology without templates. Presentation yesterday at ICLDC 4, Honolulu.


► Grenoble, Lenore. 2015. The hitchhiker’s guide to documentation: Communicative practices, cultural competence and proficiency guidelines. Presentation yesterday at ICLDC 4, Honolulu.