

Catch and release:

caring feeding sharing of comparative data

Doug Cooper Center for Research in Computational Linguistics

today

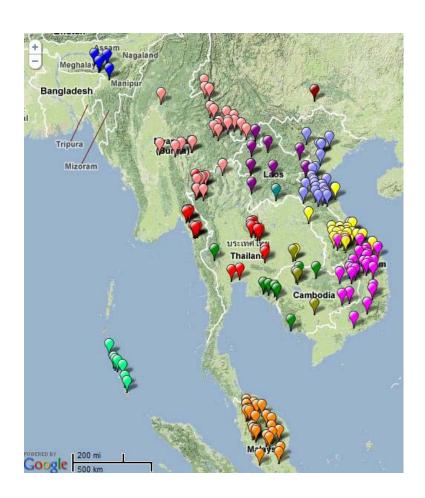
one problems

two solutions

three lessons

four questions

Part 1: Problems



Who says what why when where & how?

Mapping and managing comparative data in the MKLP

It's not just about language.

it's about data...

we're great at writing it (field notes, unpublished work). we're great at publishing it (books, articles, theses). we're great at warehousing it (libraries, archives). we're great at describing it (metadata, OLAC).

but not so good at

access navigation illumination

and websites...

very good at presenting results

not so good for testing ideas

we need to turn websites into worksites

and tools...

many systems to pour data into:

Elan, WordCorr, WordSurv....

few tools to get to know data with

and human-computer interaction...

specifying searches organizing answers

we're not building ordinary dictionaries we need extraordinary controls

and collaboration...

many conferences many publications

little anonymous unilateral cooperation

enabled by open access to data controlled access to analysis

and interoperability...

Internet

as

sprachbund

using standardized markup (TEI, GOLD, ...)
and/or Web APIs

a.k.a. "linguistic area, convergence area, diffusion area or language crossroads"

and accessibility.

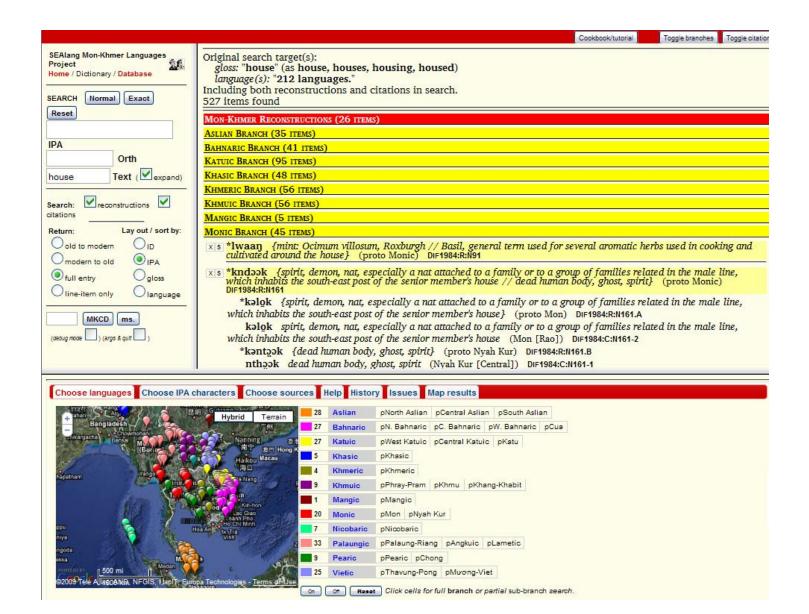
lexicography
epigraphy
endangered languages

helping ask
expert questions
without demanding
expertise in each area

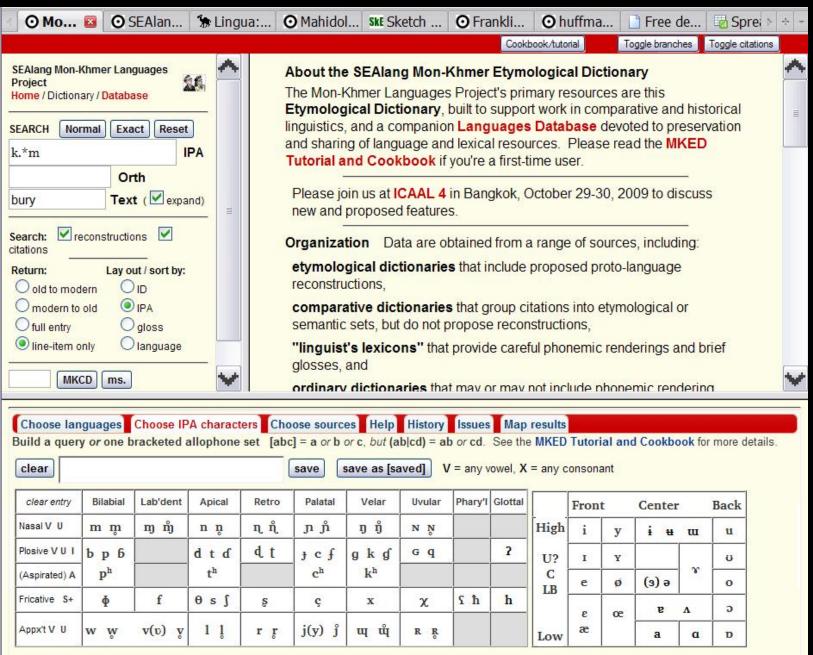
data tools websites human-computer interaction accessibility collaboration interoperability

collaborationcare data feeding websites sharing human/computer interactionf tools comparative accessibility language interoperabilitydata

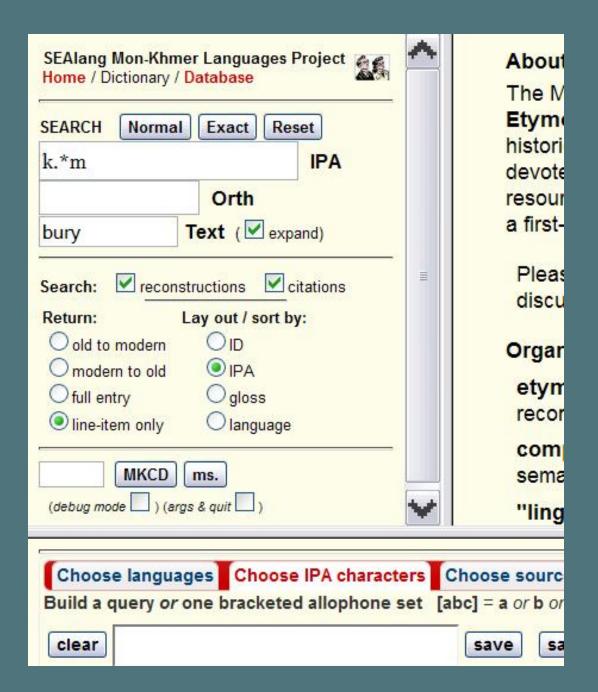
Part 2: Solutions



basic dictionary layout

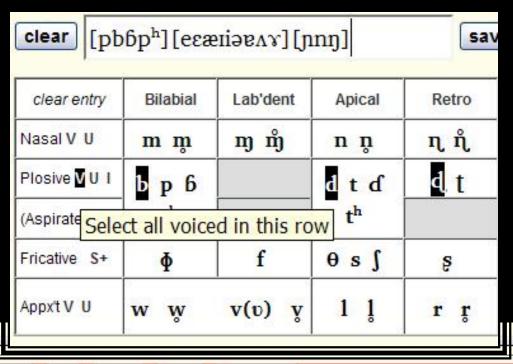


Tables are derived from IPA, but reflect typical Southeast Asian practice. Vowel layout is similar to Pullum & Ladusaw (1996), pp. 298-299.



basic dictionary controls





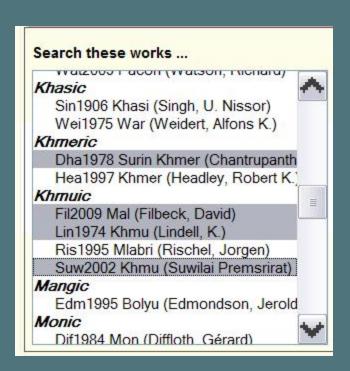
Choose languages Choose IPA characters Choose sources Help History Issues Map results

Build a query or one bracketed allophone set [abc] = a or b or c, but (ab|cd) = ab or cd. See the MKED Tutorial and Cookbook for more deta

| [pb6ph] [eεæɪiəɐʌɤ] [nnŋ] | Save | Save as [saved] | V = any vowel, X = any consonant

clear entry	Bilabial	Lab'dent	Apical	Retro	Palatal	Velar	Uvular	Phary'l	Glottal
Nasal V U	m m	ոյ ո՞յ	n ņ	ηů	ŋņ	ŋŋ	N N		
Plosive V U I	b p 6		dtd	d t	y c f	gkg	G q		3
(Aspirated) A	p ^h		th		c ^h	k ^h			
Fricative S+	ф	f	өѕ∫	ş	ç	x	χ	đ ?	h
Appxt V U	w w	ν(υ) γ	1 1	r ŗ	j(y) j	щщ	R R		

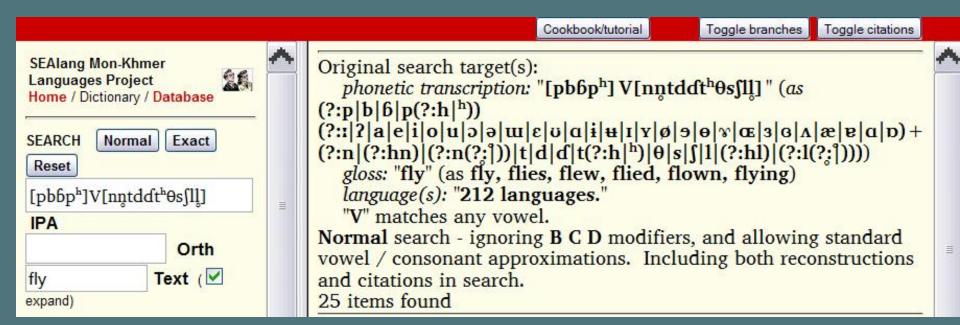
	Fro	nt	Center Back		
High	i	у	i u	ш	u
U? C LB	I	Y			Ü
	e	ø	(3) ə	3.	o
	3	œ	ខ	Λ	э
Low	æ		a	α	D



include or exclude authors and works



expanded queries



single items

```
Original search target(s):
  phonetic transcription: "k.*m" (as k.*m)
  language(s): "212 languages."
Normal search - ignoring B C D modifiers, and allowing standard vowel / consonant approximations. Inc
both reconstructions and citations in search.
1490 items found
Mon-Khmer Reconstructions (27 items)
ASLIAN BRANCH (26 ITEMS)
x s kam kam rat trap (noun) (Temiar) MEA1998:C:1255
x s kantam pənagn field crab (compound) (Kensiu) Bis1994:C:482
x s kantam crab (Kensiu) Bis1994:C:481
X S karom area underneath a house; underneath, below (noun) (Semelai) KRU2004:C:49
x s kem military camp (noun ) (Semelai) Kru2004:C:741
X s kem kem a squirrel trap (noun) (Temiar) MEA1998:C:1379
X S kennem kennem mint (noun) (Temiar) MEA1998:C:1427
X s khləm odor (noun ) (Semelai) Kru2004:C:791
Khoim to sit, be quiet (Mah Meri) Skeat & Blagden 1906 S 223 Sho2006:C:1427-5 via variant?
Khorm to sit, be quiet (Mah Meri) SKEAT & BLAGDEN 1906 S 223 SHO2006:C:1427-6 via variant?
x s kim kim we will, indicates the future tense when used as a marker with the exclusive pronouns kanek /
    kandek (we) (future pronoun marker) (Temiar) MEA1998:C:1495
X S klam to carry on shoulder (Semelai) SKEAT & BLAGDEN 1906 C 36 SHO2006:C:1406-2
```

X S kohm to be half-onen (evec) (Vencin) Ric1004.C.580

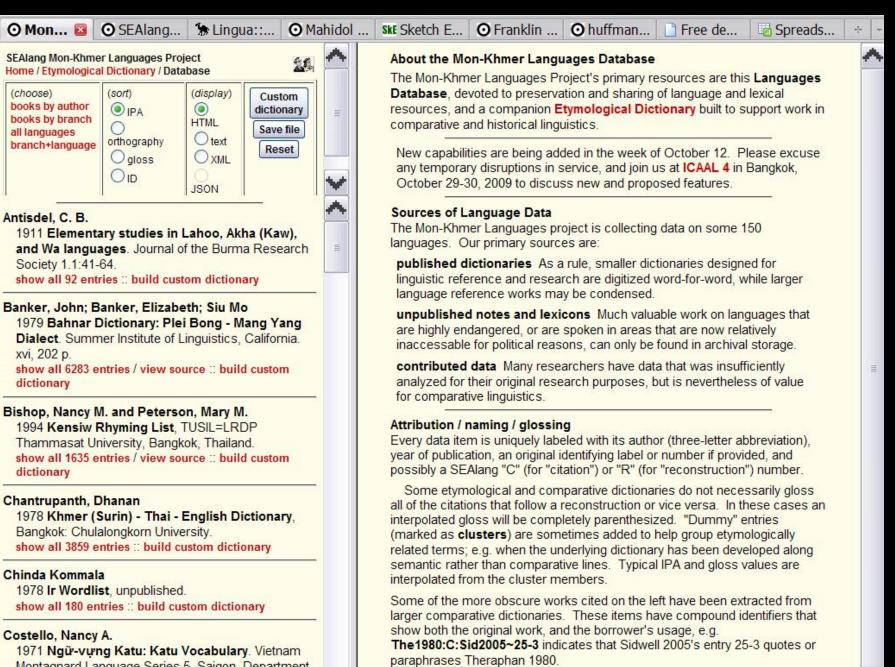
x s *na? house (proto Waic) Dif1980:R:223-1 dummy root (proto Samtau) Dif1980:R:223-2 nya? house (P'uman) FER1971:C:DIF1980~2 nha house (Kem Dègne) LEF1892:C:DIF1980~3 nà? house (Samtau) HAR1976:C:Dif1980~25 nya house (Tai Loi) Sco1900:C:Dif1980~31 dummy root (proto Wa-Lawa-La) Dif1980:R:223-3 *na? house (proto Wa-Lawa) Dif1980:R:223-4 nia? house (Lawa [North]) DIF0000:C:DIF1980~2 nī-ö house (Wa) Mil1931:C:Dif1980~3 nyeh house (Wa) ANT1911:C:DIF1980~5 pia? house (Lawa [Ban Pa Phae]) Sur1976:C:DIF1980~6 ñiea house (Lawa [L'up]) ScH1976:C:DIF1980~8 ñe?3 house (Wa [Thung Va]) Luc1965:C:DIF1980~9 nyiiex house (Wa [Kawa]) Kaw1958:C:DIF1980~10 nyeh house (Wa [Bible]) You1934:C:DIF1980~11 nyen house (Wa) DAV1909:C:DIF1980~11 niüa, nia⁵ house (Wa) DRA1907:C:DIF1980~12 ne? house (Wa [South]) Har1976:C:Dif1980~26 nia? house (Lawa [Bo Luang]) Mit1972:C:Dif1980~37 nia? house (Lawa [Ban Phae]) Mit1972:C:Dif1980~38 nia? house (Lawa [Umphai]) Mit1972:C:Dif1980~39 cha(t) house (La) DAV1909:C:DIF1980~12 nya house (En) Sco1900:C:Dif1980~29 nya house (Son) Sco1900:C:Dif1980~30 nha house (Kentung-Wa) Sco1900:C:DIF1980~32 nya house (K'ala) HAR1927:C:DIF1980~5 nya house (Khalo) FLA1970:C:DIF1980~5

family trees

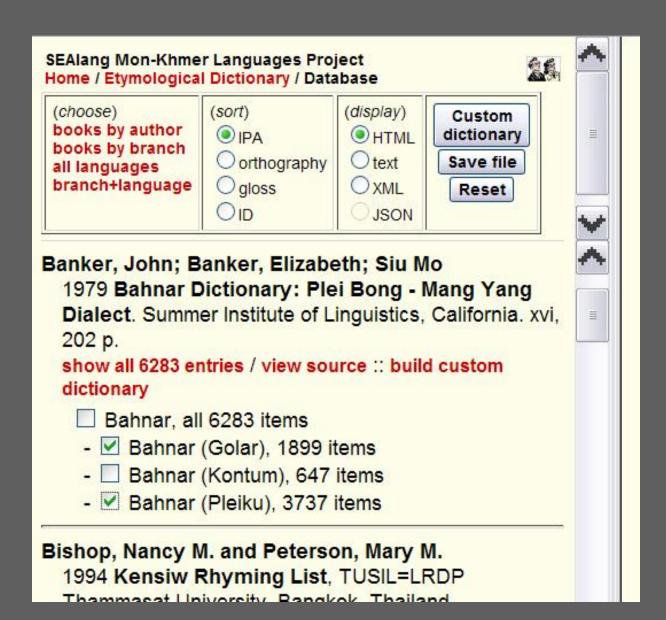
```
rat, mouse (proto Mon-Khmer) SHo2006:R:93
  *kn<sub>1</sub>[i]? rat, mouse (proto Mon-Khmer [A]) Sho2006:R:93.A
   kni? kni(') rat, mouse (Old Mon) Sho2006:C:93-1
   noe? rat, mouse (Mon) SH02006:C:93-2
   (k)nai rat, mouse (Kui) SHO2006:C:93-3
   kəneri rat (Stieng) Sho2006:C:93-4
   de rat (Sre) SHO2006:C:93-5
   ner rat (Stieng [Biat]) SHO2006:C:93-6 and der < Sre?
   kəne: rat (Chrau) SH02006:C:93-7
   kəne: rat (Bahnar) Sho2006:C:93-8
   kanery rat (Jeh) SHO2006:C:93-9
   kəne: rat (Halang) Sho2006:C:93-10
   kəné? rat, mouse (Khmu [Yuan]) Lin1974:C:Sho2006~93-11
    khnai mouse (Khasi) SHO2006:C:93-12
   kěni mouse (Sakai [Central]) Sho2006:C:93-13
  *knee rat (proto Katuic) SID2005:R:572
   knaj~naj rat, mouse (Kui) PRA1978:C:SID2005~572-1
   knaj rat (Souei) FER1974A:C:SID2005~572-2
   kanaj rat, mouse (Bru) THE1980:C:SID2005~572-3
   kanaj rat, mouse (Bru) Mil 1976: C: Sid 2005~572-4
   kanaj rat (Sô) GAI1985:C:SID2005~572-5
   kunəj rat (Katang [T]) Sid 2005:C:572-6
   kunee wild game (pig) (Pacoh) WAT1979:C:SID2005~572-7
```

and more family trees

basic database layout



database controls



extracted dictionaries

Custom Dictionary
Language:Wa, Source:Ant1911 92 entries

GLOSS	IPA	LANGUAGE (DIALECT)	ID
a La, a Lawa, a Wa	hsiveh	Wa	Ant1911:C:Dif1980-19
all, out of, exhausted	oet	Wa	Ant1911:C:Dif1980-49
arrive	hoet	Wa	Ant1911:C:Dif1980-51
bamboo	o:	Wa	Ant1911:C:Dif1980-0
big	ding	Wa	Ant1911:C:Dif1980-36
bird	hsim	Wa	Ant1911:C:Dif1980-67



combined dictionaries

Custom Dictionary Language:Chong, Source:Huf1971

(sa) ŋî: troŋ

Language:Chong, Source:Huf1985 Language:Chong, Source:Isa2007a

Language: Chong, Source: Isa2007b Language: Chong, Source: Nop2003

Language:Chong, Source:Por2001

Language:Chong, Source:Sir2001 4204 entries

noon

IPA	GLOSS	LANGUAGE (DIALECT)	ID
tkər²	worm	Chong [of Kompong Som]	Isa2007b:C:2060-2
tç ^h ir²m kək ^h em	hornbill	Chong [of Kompong Som]	Isa2007b:C:291-2
tç ^h ir²m tək ^h en	hornbill	Chong [of Kanchanaburi]	Isa2007a:C:291-1
(sa) ŋî: la:	evening	Chong [Kasong]	Nop2003:C:660-3
(sa) ŋîɪ troŋ	noon	Chong [Kasong]	Nop2003:C:1767-3

Chong [of Ban Thung

Saphan

Huf1985:C:1767

multi-use dictionaries

Custom Dictionary

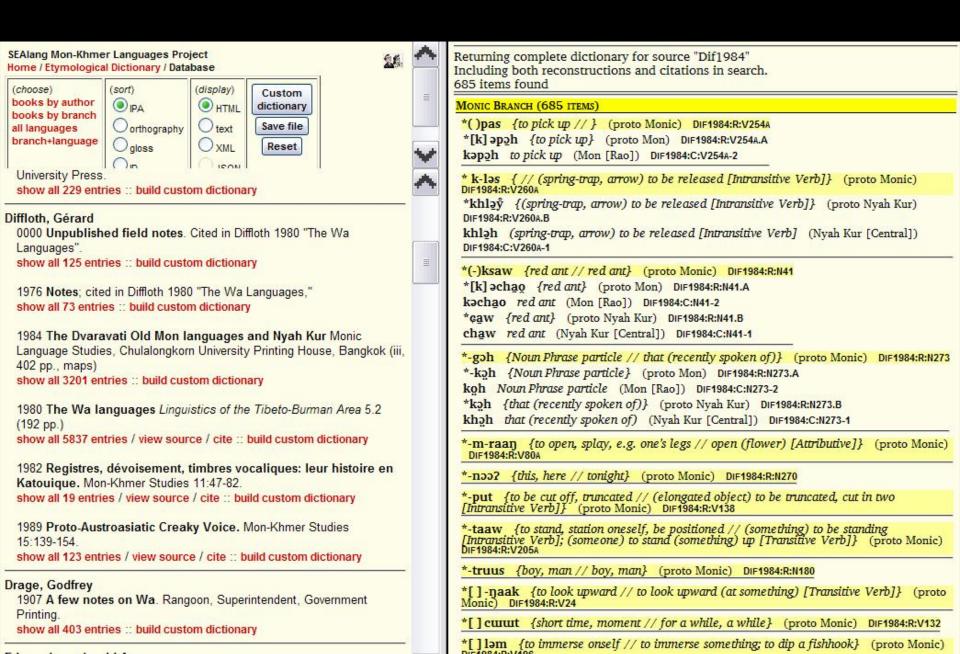
Language: Kensiu, Source: Bis 1994 1635 entries

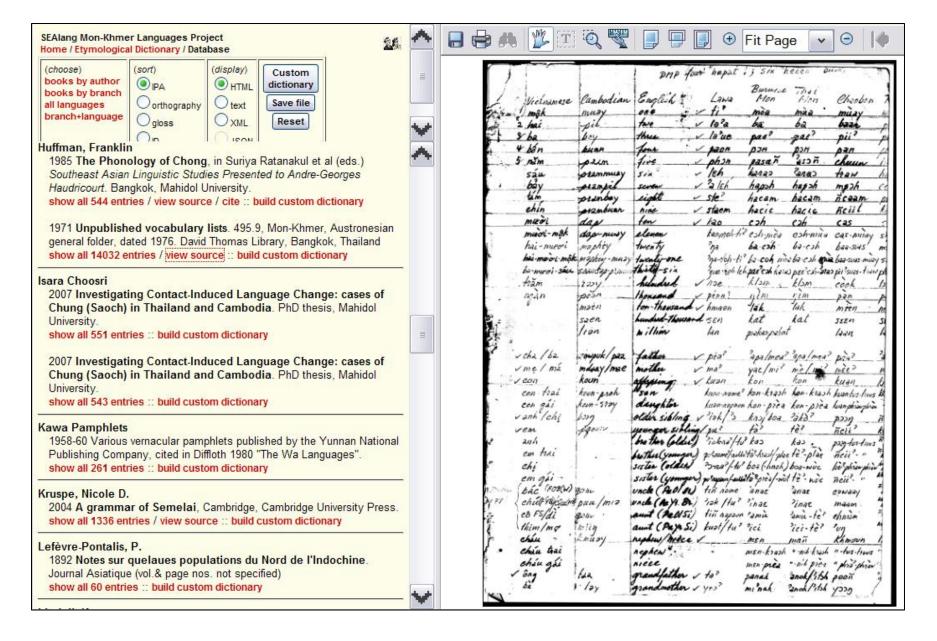
IPA	GLOSS	LANGUAGE (DIALECT)	ID
(202) baju? nikah	person being married	Kensiu	Bis1994:C:1
-hah	question marker	Kensiu	Bis1994:C:2
-na-	affix: nominalizer	Kensiu	Bis1994:C:3
ahũn	hiccup	Kensiu	Bis1994:C:4
anjedn	to be complete, to be done, to be brown	Kensiu	Bis1994:C:5

```
Custom Dictionary
Language: Kensiu Source: Bis1994
1635 results
                language (dialect)
IPA
        gloss
                                        ID
(7o?) baju? nikah
                        person being married
                                                Kensiu Bis1994:C:1
-hah
        question marker Kensiu Bis1994:C:2
        affix: nominalizer
                                Kensiu Bis1994:C:3
-na-
        hiccup Kensiu Bis1994:C:4
ahũn
        to be complete, to be done, to be brown Kensiu Bis1994:C:5
antedn
anüt
        throat Kensiu Bis1994:C:6
bacu? banco?
                clothing (compound)
                                        Kensiu Bis1994:C:8
```

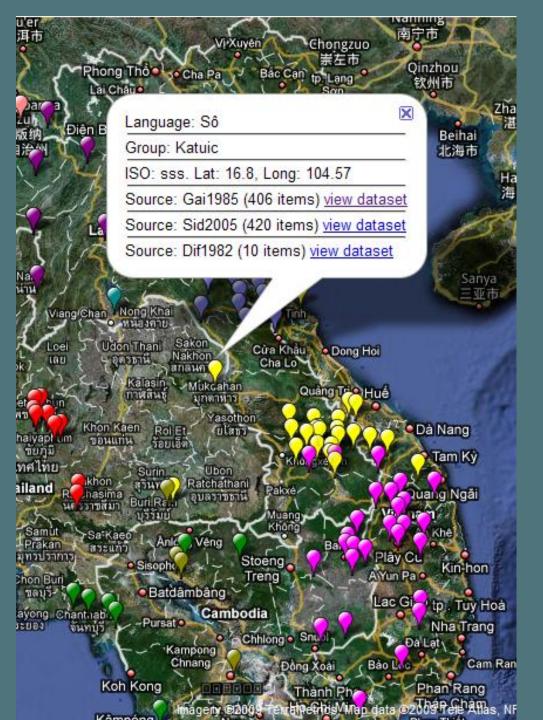
html xml text

dictionaries cooked...



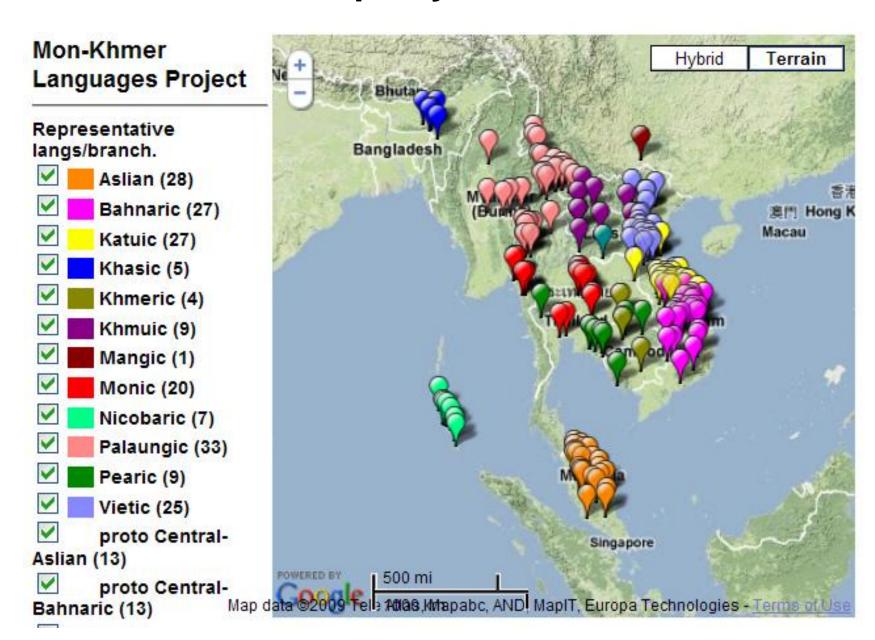


... and dictionaries raw

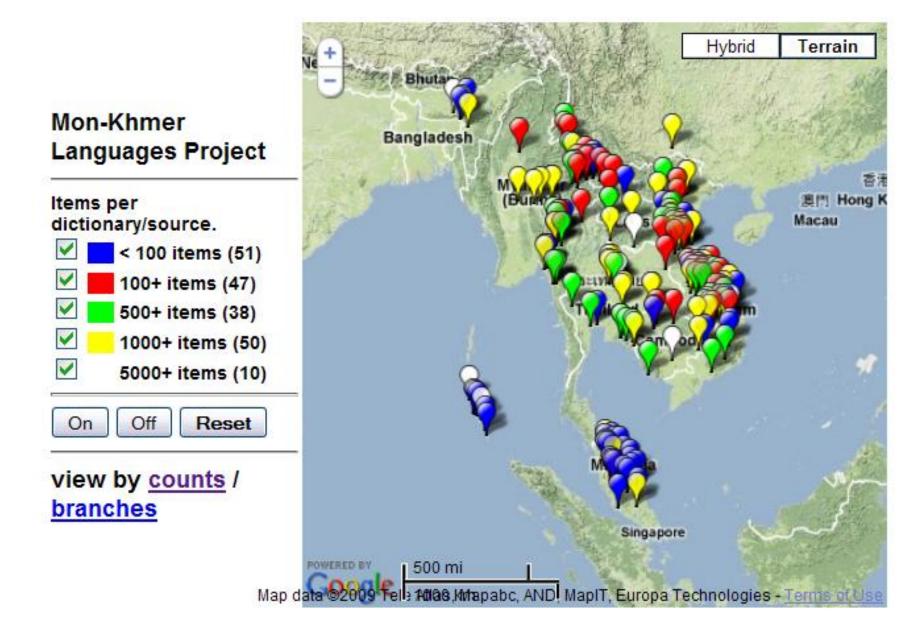


map accessible dictionaries

maps by branch



maps by count



maps for choosing





maps of the chosen

maps of what we found



Sunday, October 25, 2009 10:35:19 AM

IPA: [pb6ph]V[nntddthθs[ll], Text: fly, Return: old to modern, Sort by: phonetic, Search: normal. Language: (put mouse here), Include sources: (put mouse here), Exclude sources: (put mouse here),

Sunday, October 25, 2009 10:33:45 AM

IPA: [pb6ph]V[nntddthθs[li], Return: full entry, Sort by: gloss, Search: normal. Language: (put mouse here), Include sources: (put mouse here), Exclude sources: (put mouse here).

Sunday, October 25, 2009 10:30:55 AM

Text: fox, Return: line-item, Sort by: phonetic, Search: normal. Language: (put mouse here), Include sources: (put mouse here), Exclude sources: (put mouse here),

Sunday, October 25, 2009 10:30:34 AM

Text: fox, Return: line-item, Sort by: phonetic, Search: normal. Language: (put mouse here), Include sources: (put mouse here), Exclude sources: (put mouse here),

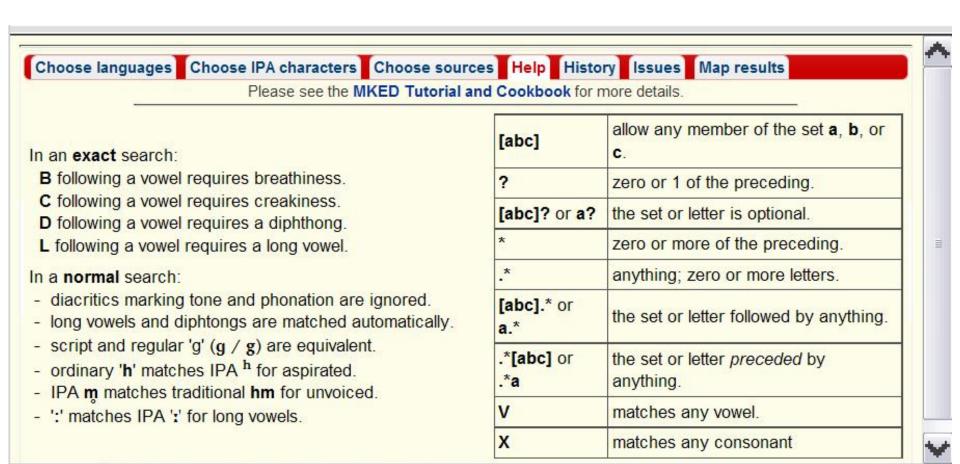
Sunday, October 25, 2009 10:30:09 AM

Text: fox, Return: line-item, Sort by: phonetic, Search: normal. Language: (put mouse here), Include sources: (put mouse here), Exclude sources: (put mouse here),

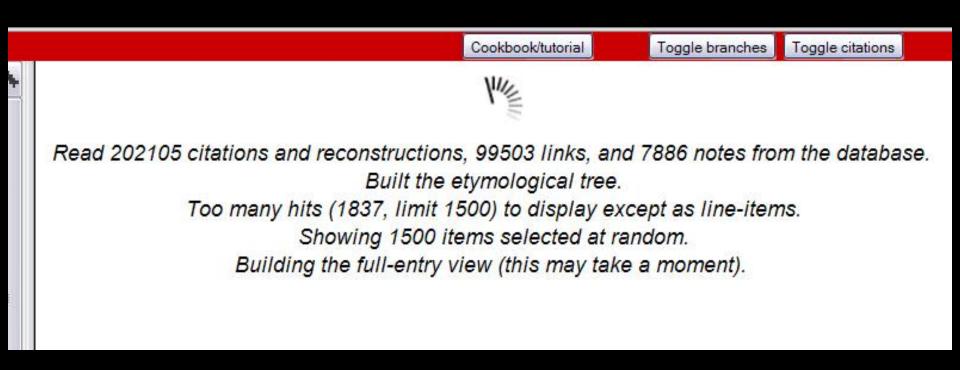


and maps of where we looked

even a map of how to search

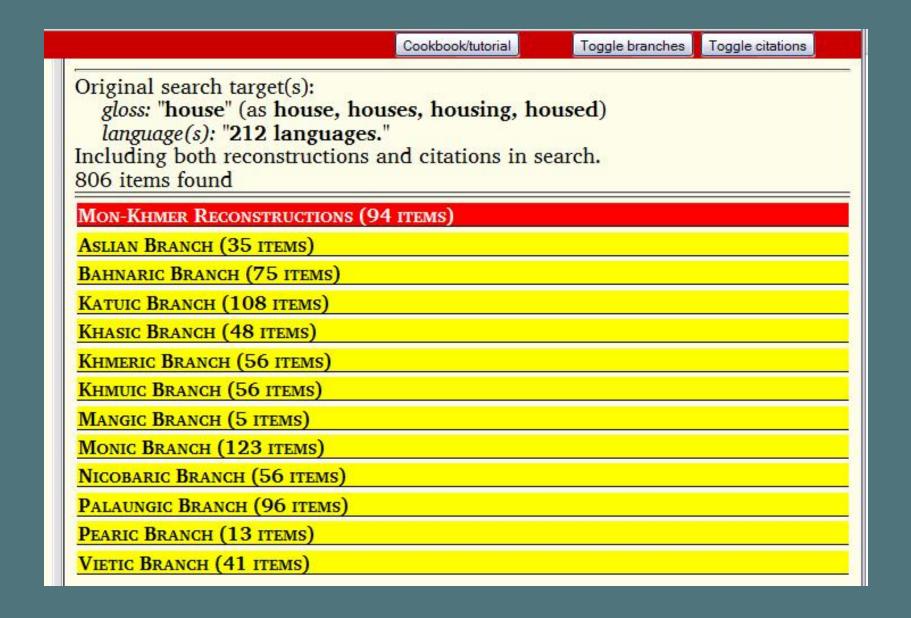


In the past year, we have ...



much more data

a more efficient interface



```
Mon-Khmer Reconstructions (26 items)
ASLIAN BRANCH (35 ITEMS)
BAHNARIC BRANCH (41 ITEMS)
KATUIC BRANCH (95 ITEMS)
x s *praan beam, joist (proto Katuic) SID2005:R:132
                                                                      untoggled
x s *?abil rat (proto Katuic) SID2005:R:520
                                                                       branches
x s *til fill a void/container (proto Katuic) SID2005:R:525
                                                                                 and
x s *-peeŋ behind (proto Katuic) SID2005:R:663
                                                                         citations
x s *kloom, *kaloom storage basket (proto Katuic) SiD2005:R:941
x s *-roh burn(ing) (proto Katuic) SiD2005:R:1035
       roah dry by fire (Bru) MIL1976:C:SID2005~1035-1
       troh spread (of a fire) (Ta'Oi [of Sekong]) THE2001:C:SID2005~1035-2
       tarrah burned (house) (Ta'Oi [NVL]) NGU1986:C:SID2005~1035-3
       roh spread (of a fire) (Ngeq [Chatong]) THE2001:C:SID2005~1035-4
       ?arah spread (of a fire) (Katu [Dakkang]) The2001:C:SiD2005~1035-5
       rah on fire (Katu [Triw]) THE2001:C:SID2005~1035-6
       riroh spread (of a fire) (Katu) THE2001:C:SID2005~1035-7
       rah on fire, spread (of a fire) (Kantu) The 2001: C: SID 2005~1035-8
       ?arah burn (Katu [An Diem]) Cos1971:C:SiD2005~1035-9
       rah burning (Katu [Phuong]) Cos1971:C:SiD2005~1035-10
       roh burned (house) (Pacoh) WAT1979:C:SID2005~1035-11
x s *tnool post (proto Katuic) SiD2005:R:1100
```

extensive use of clustering

```
MON-KHMER RECONSTRUCTIONS (26 ITEMS)
x s pia? hae? hii? ppii pii həi... house... (cluster) (proto Mon-Khmer) Huf1971:R:Sid2
X S dùn dun dun, don tan ton... house... (cluster) (proto Mon-Khmer)
       dùn house (Kui) Huf1971:C:3015-408-8
       dun house (Souei) HuF1971:C:3015-408-9
       dun house (Bru) HuF1971:C:3015-408-10
       dun, don house (Ngeq) Huf1971:C:3015-408-11
       tan house (Chong) HuF1971:C:3015-408-17
       ton house (Pear [of Kompong Thom]) Huf1971:C:3015-408-18
x s hnəəm hnaam... house... (cluster) (proto Mon-Khmer) HuF1971:R:SiD2009~3016
       hnəəm house (Laven) HuF1971:C:3016-408-13
       hnaam house (Brao) Huf1971:C:3016-408-14
x s cəp ciən... house (classifier)... (cluster) (proto Mon-Khmer) Huf1971:R:Sid2009~3019
       cəp house (classifier) (Mon [Thailand]) Huf1971:C:3019-409-3
       cian house (classifier) (Thin) Huf1971:C:3019-409-6
x s lan hlan... house (classifier)... (cluster) (proto Mon-Khmer) Huf1971:R:Sid2009~3020
       lan house (classifier) (Nyah Kur) Huf1971:C:3020-409-4
       lan house (classifier) (Thin) Huf1971:C:3020-409-5
       hlan house (classifier) (Khmu) Huf1971:C:3020-409-7
       lan house (classifier) (Souei) HuF1971:C:3020-409-8
           house (classifier) (Bru) HuF1971:C:3020-409-9
```

building the citation trail

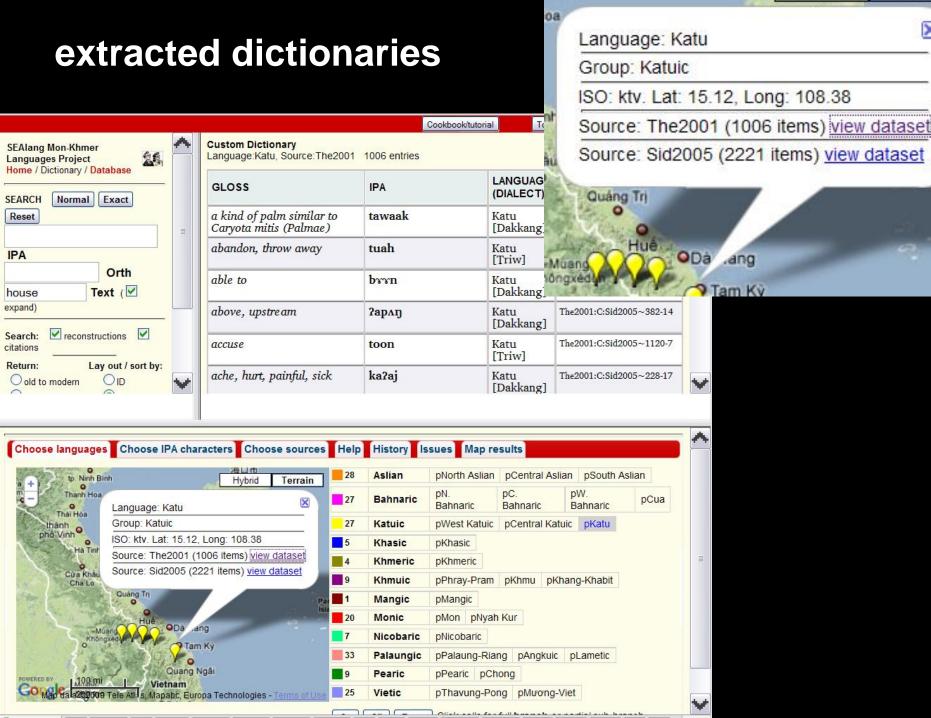
coh) WAT1979:C:SID2005~1035-11

SID2005:R:1100

```
(Ta'Oi [of Sekong]) The 2001: C: Sid 2005~1035-2
(Ta'Oi [NVL]) NGU1986: C: Sid 2005~1035-3
Ngeq [Chatong]) The 2001: C: Sid 2005~1035-4
(Katu [Dakkang]) The 2001: C: Sid 2005~1035-5

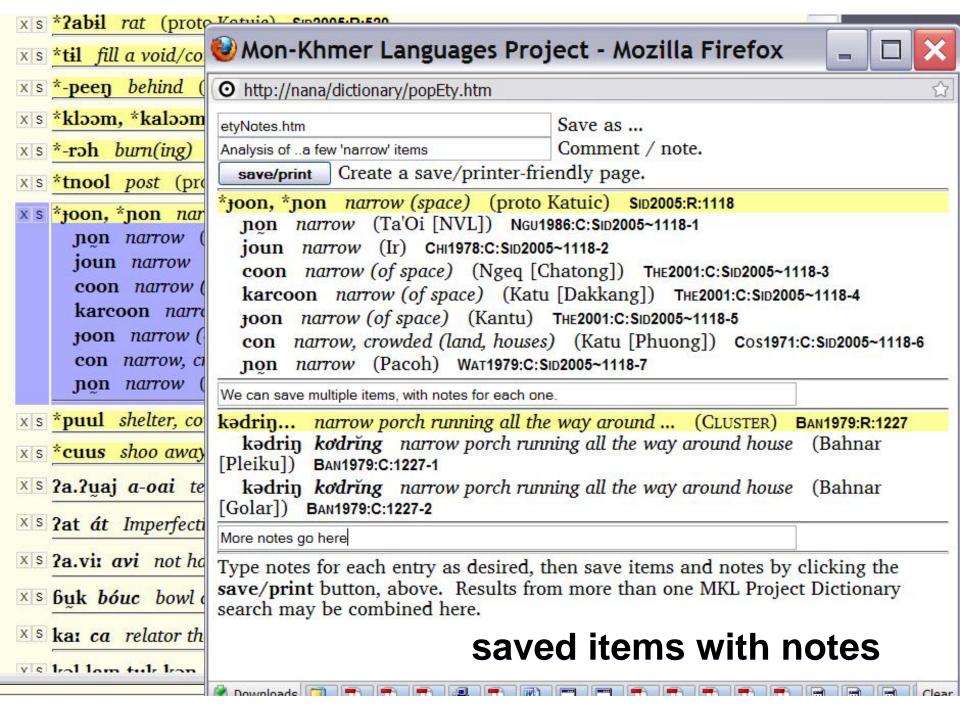
]) The 2001: C: Sid 2005~1035-6
(Katu) The 2001: C: Sid 2005~1035-7
Theraphan L. Thongkum: 2001 `Languages of the Tribes in Xekong Province Southern Laos". The Thailand Research Fund. Bangkok, Chulalongkorn University.

Oiem]) Cos 1971: C: Sid 2005~1035-10
```



tools for deleting items and taking notes

```
x s *tnool post (proto Katuic) SID2005:R:1100
x s *joon, *non narrow (space) (proto Katuic) Sid2005:R:1118
      non narrow (Ta'Oi [NVL]) NGU1986:C:SID2005~1118-1
      joun narrow (Ir) CHI1978:C:SID2005~1118-2
      coon narrow (of space) (Ngeq [Chatong]) THE2001:C:SID2005~1118-3
      karcoon narrow (of space) (Katu [Dakkang]) The2001:C:SiD2005~1118-4
      joon narrow (of space) (Kantu) THE2001:C:SID2005~1118-5
      con narrow, crowded (land, houses) (Katu [Phuong]) Cos1971:C:SiD2005~1118-6
      non narrow (Pacoh) WAT1979:C:SID2005~1118-7
x s *puul shelter, cover (proto Katuic) SiD2005:R:1235
x s *cuus shoo away (proto Katuic) SiD2005:R:1271
```



Whew!

SEAlang Mon-Khmer Languages Project Home / Dictionary / Database SEARCH Normal Exact	Original search target(s): gloss: "house" (as house, houses, housing, housed) language(s): "212 languages." Including both reconstructions and citations in search. 527 items found								
IPA Orth house Text (✓ expand) Search: ✓ reconstructions ✓	Mon-Khmer Reconstructions (26 ITE ASLIAN BRANCH (35 ITEMS) BAHNARIC BRANCH (41 ITEMS) KATUIC BRANCH (95 ITEMS) KHASIC BRANCH (48 ITEMS) KHMERIC BRANCH (56 ITEMS) KHMUIC BRANCH (56 ITEMS)	MS)							
Return: Old to modern Old to modern Old IPA of full entry Oline-item only MKCD MKCD MS. (oebug mode Old your Se quit Old your Se your Se quit Old your Se your	cultivated around the house} (x s *kndəək {spirit, demon, nat, or which inhabits the south-east post of the policy of the poli	Roxburgh // Basil, general term used for several aromatic herbs used in cooking and Monic) DIF1984:R:N91 ially a nat attached to a family or to a group of families related in the male line, the senior member's house // dead human body, ghost, spirit} (proto Monic) cially a nat attached to a family or to a group of families related in the male line, the senior member's house} (proto Mon) DIF1984:R:N161.A ially a nat attached to a family or to a group of families related in the male line, the senior member's house (Mon [Rao]) DIF1984:C:N161-2 host, spirit} (proto Nyah Kur) DIF1984:R:N161.B st, spirit (Nyah Kur [Central]) DIF1984:C:N161-1							
Choose languages Choose IPA c	haracters Choose sources Help Hist GHAPPING Terrain 28 Aslian 27 Bahnaric	pNorth Aslian pCentral Aslian pSouth Aslian							
Chownonan Banes MEGUTIP	Nanning ## 27 Katuic ### Style Hong K Halkou Macau ### Style Hong K Halkou M Halko	pWest Katuic pCentral Katuic pKatu pKhasic pKhmeric pPhray-Pram pKhmu pKhang-Khabit pMangic pMon pNyah Kur							

pPalaung-Riang pAngkuic pLametic

25 Vietic pThavung-Pong pMurong-Viet

On Of Reset Click cells for full branch or partial sub-branch search.

pPearic pChong



re-think goals

getting there is the problem

turn delivery into deliverables

re-think computing

We use computers as bookkeepers

We should use them as informants

and as ladders to the high ground

re-think big science

their big science HubbleCernGenome

our big science STEDTACDMKLP

re-think on-line

results + data claims + tests copies + sources

not just on-line libraries on-line laboratories

re-think sustainability

it's not about maintaining income

it is about maintaining interest

it grows from utility and accessibility

re-think language resources

ST AN KD AA HM languages&structure

re-think language resources

Southeast Asian linguisticsinfrastructure

Part 4: Questions

Search?

sealang.net / archives / seals2008.pdf

will it travel?

Choose lar Build a quer											l and	Cook	ook for	more c	letails
clear				sa	ve save	as [saved]	V = any	vowel, X	= any c	o <mark>nsona</mark> nt	t				
clear entry	Bilabial	Lab'dent	Apical	Retro	Palatal	Velar	Uvular	Phary'l	Glottal		Front Center Back				
Nasal V U	m m	ոյ ո՞յ	n ņ	ղ դ	ŋ'n	ŋŋ	N N			High	i	у	i u	ш	u
Plosive V U I	b p 6		dtd	d t	y c f	gkg	G q		3			Y			
(Aspirated) A	$\mathbf{p}^{\mathbf{h}}$		th		ch	k ^h	*			U?	1	Y		- 3	Ü
			2 102.0							C LB	e	ø	(3) ə		o
Fricative S+	Φ	f	θs∫	ş	ç	X	χ	f ?	h	LD					0998
Appx't V U	124.04 855	()	1 1	1.82 (2.22	:() 9	0	2221 2221				3	œ	B	Λ	Э
Appriv 0	w w v(v(v) v	ı İ	r ŗ	j(y) j	щщ	R R		Lov	Low	æ		a	α	D

can this model be adapted to ST, AN, MK, TK?

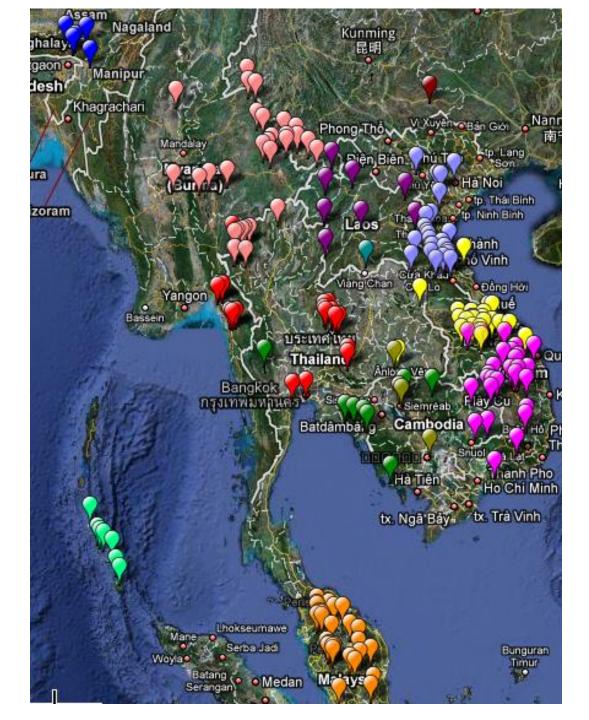
will it code? do all daughters have mothers?

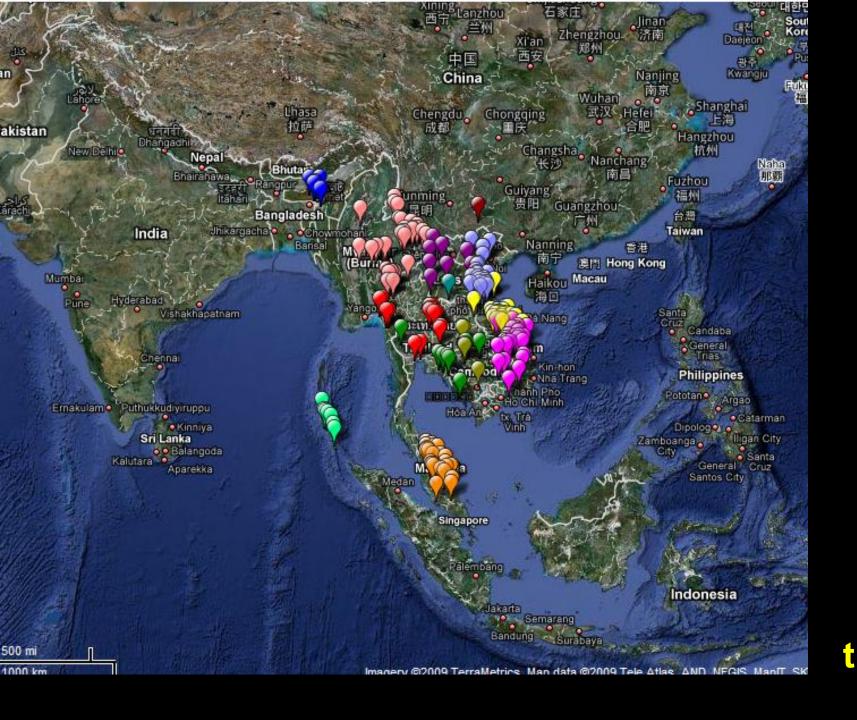
```
<item id="Dif1980:R:1" language="proto Mon">
   <ipa>*?u</ipa> <gloss>thingamajig</gloss>
</item>
<item id="Dif1980:C:1" language="Mon">
   <ipa>?ug</ipa><gloss>widget</gloss>
</item>
<link id="Dif1989:L:1"</pre>
   from="Dif1980:C:1" to="Dif1980:R:1" />
<note id="Dif1980:N:1" ref="Dif1980:L1">
 The plausibility of this relationship is
questionable.</note>
```

will it call?

```
http://sealang.net/api?
 phone=.*g&
 def="thingamajig"&
 service=dictionary&
 resource=mklp&
 language=all&
 sort=phonetic&
 exclude=cooper2000&
 extendAncestors=yes& ....
```

what's missing from this picture ?





the part that isn't there

Catch and release:
caring
feeding
sharing
of comparative
data



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Mon-Khmer Languages Project National Endowment for the Humanities 2007 – 2009, 2009 – 2011

<u>http://sealang.net</u> / monkhmer
<u>http://sealang.net</u> / archives / icstll42.pdf