

# Language Ecology and Contact in South Asia

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Guest lecture by Patrick Das, CU Boulder

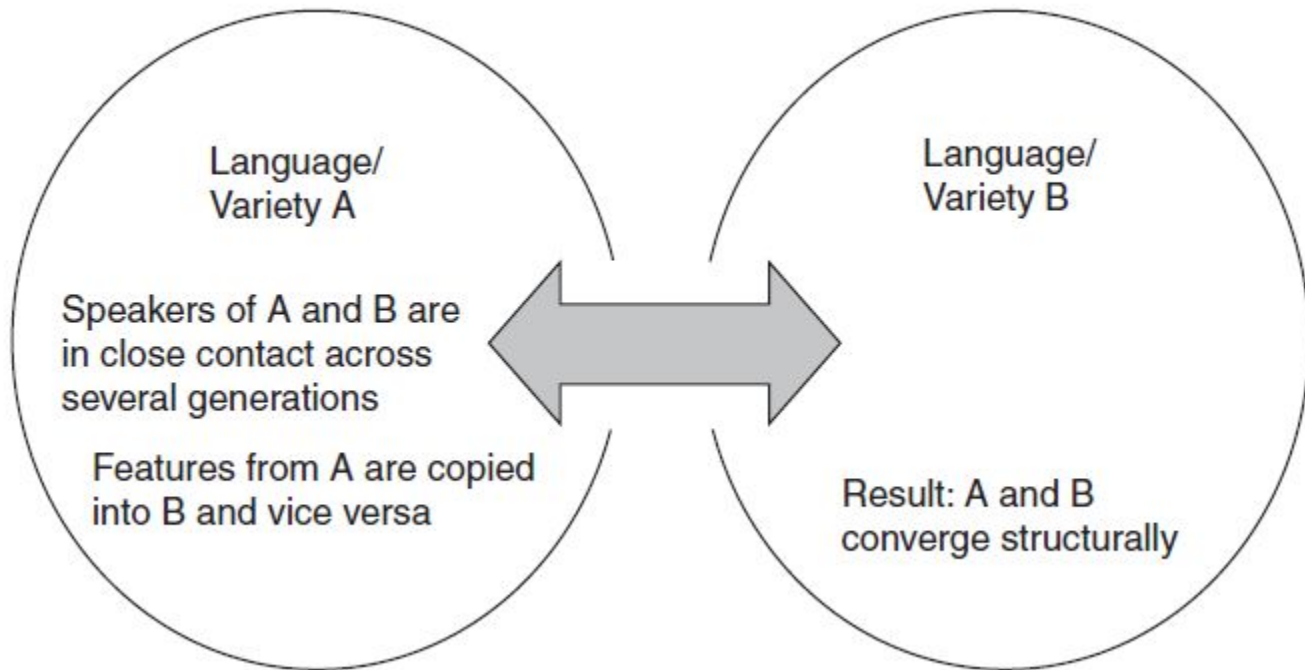


# A bit about me

- 3rd year PhD student in Linguistics at CU Boulder
- Interested in typology, language contact, sociolinguistics
- My focus: 'Eastern Himalayan Region' - a complex linguistic area



Why care about  
language  
contact(s)?



We think of language contact as a one-to-one process...

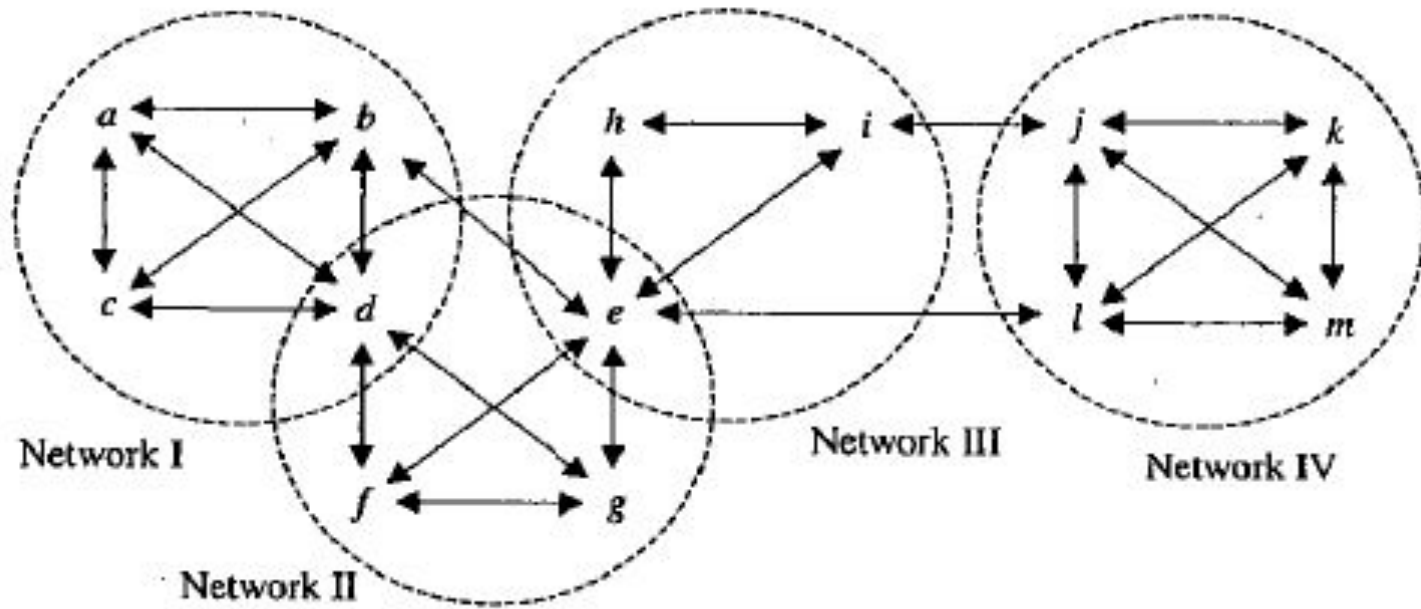
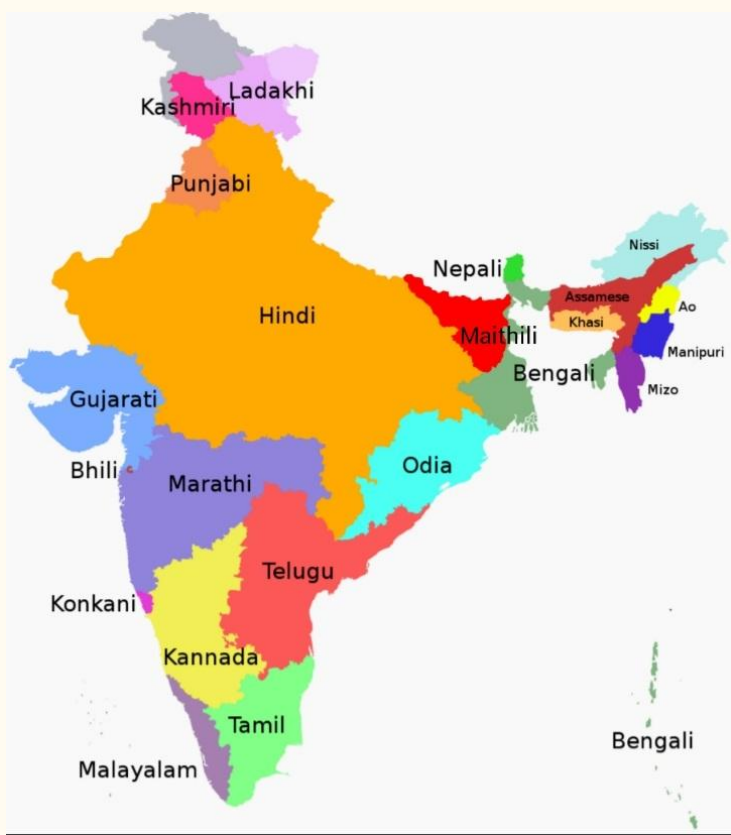


Figure 1.4 Four high-density networks, with shared 'node' individuals

But I'm going to suggest today that it's *many-to-many*

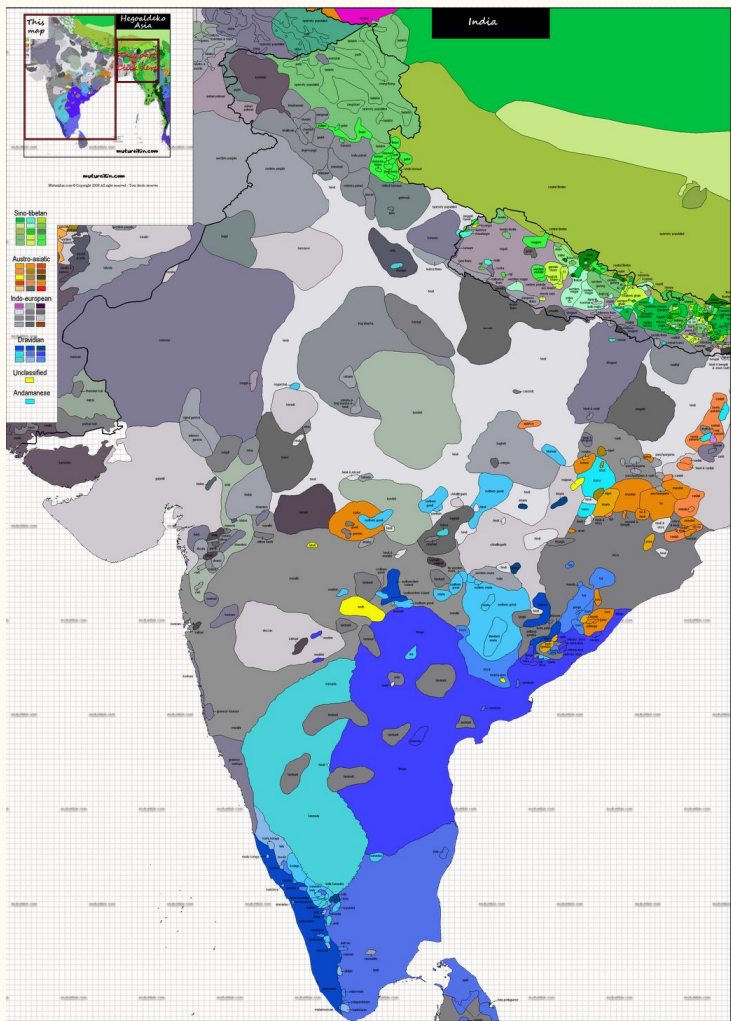
# Roadmap

- Why look at a specific part of the world? / Why South Asia?
  - Language Ecology as a concept
  - Indian English, and superdiverse repertoires
  - South Asia as a Linguistic Area
  - The Eastern Himalayan Region – as not a linguistic area
  - Language contact in Nagaland
-

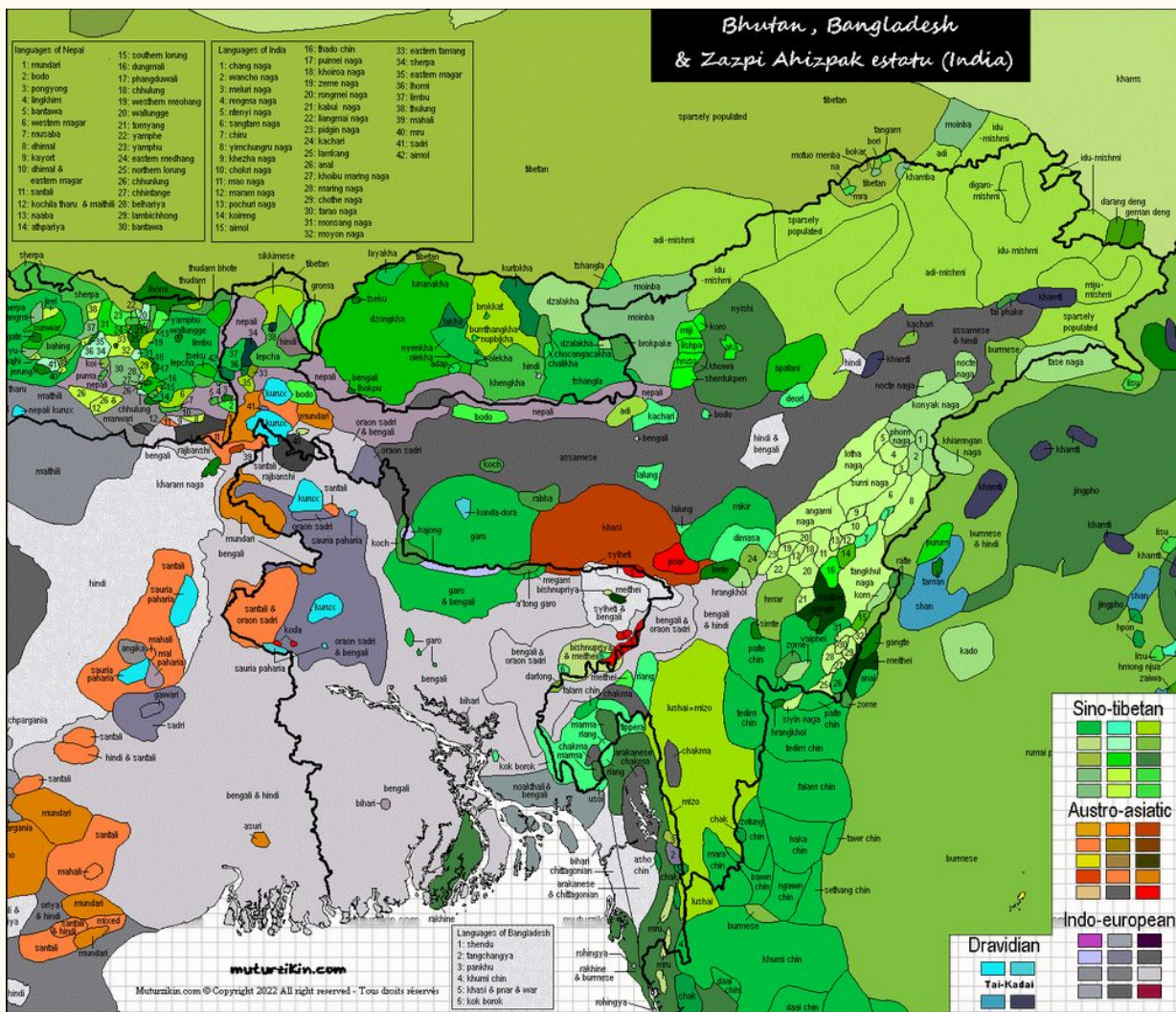


Some language maps of South Asia...





The most comprehensive map I've found...



And this map, for just  
‘North-East India’

Languages exist  
in a *ecology*

# What does it mean for languages to exist in an ‘ecology’?

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# What does it mean for languages to exist in an ‘ecology’?

- Languages exist in an *interconnected system*
- First discussed as a term by Einar Haugen:
  - The metaphorical sense
  - The literal sense
- **“the study of interactions between any given languages and its environment”**

# The linguistic context of India/South Asia

- Very old history of settlement by 4 linguistic groups
- Pre-colonial times, some Indo-Aryan lgs served as LF's, but complex networks of multilingualism
- British colonialism brought with it the use of English in official settings
- Today, India has two official languages: English and Hindi



# The three language formula in India

Abrupt language borders probably do not exist in Rājasthān, and the situation noted elsewhere in India, with a gradual continuum of changes from one village to the next, forming an L-complex across tremendous tracts of land, undoubtedly holds here too. Hence the popular Mārwarī maxim: bārā kosā bhāsā badle, tīsā kosā mausim, "Language changes every twelve kos, weather every thirty". (One kos equals approximately two miles).

# The three language formula in India

The three language formula is a educational policy/directive which suggested that three languages should be taught in the K-12 classroom (quotes mine):

- 1) The 'mother tongue' or 'regional language'
- 2) The official language of the country (English, or Hindi)
- 3) A 'modern' Indian language

English then, comes into the postcolonial Indian scene as the 'bridge' language, but also as the more politically neutral alternative to Hindi which many in non-Hindi speaking states saw as an attempt at cultural/political assimilation.

# Three case studies of ‘language ecology’ in South Asia

- Indian English, and how it mediates the language ecology of South Asia
  - South Asia as a ‘Linguistic Area’, and the Eastern Himalayan Region
  - Language contact in Nagaland
-

# Indian English as a ‘non-native’ variety...

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- Most sources that you come across will mention Indian English as a ‘non-native’ variety
- But what does it mean to be a ‘nativized’ variety?
- I’ll show today that IndEng is not just “English + ‘Indian lg’” → rather, it is a variety in its own right

# Indian English, linguistically

- Is really more of a ‘set of varieties’ than one singular variety (Wiltshire, 2020)



# Indian English, linguistically

- Is really more of a ‘set of varieties’ than one singular variety, but some features unify them (Wiltshire, 2020)
- Phonologically:
  - variation in the stops
  - Monophthongization of some vowels
  - Pitch-accent for focus!



# Indian English linguistically

- Is really more of a ‘set of varieties’ than one singular variety, but some features unify them (Wiltshire, 2020)
- Syntactically:
  - Unique focusing constructions: use of “itself/only” as focusing devices
  - “He will buy tickets over there **only**” (Pres. focus)
  - He will buy tickets over there **only** (not candy).\* (Contrastive)



# Indian English linguistically

- Is really more of a ‘set of varieties’ than one singular variety, but some features unify them (Wiltshire, 2020)
- Syntactically:
  - Weak ditransitives: omissability of prepositions and favoring the double object cxn
  - “She said she wanted to gift him a dream.” (Mukherjee and Hoffman, 2007)



Is Indian English just  
'another non-native  
variety'?

—

# Features of Indian English...

- While some features of Indian English follow some ‘vernacular universals’...
  - Indian English stress systems have a lot in common with Singaporean English, HKEng
  - But could that not be due to similar input varieties / substrates?

# Features of Indian English...

- Many IndEng features have ‘reflexes’ in “Inner Circle” englishes
  - The Indian English focusing Only/Itself cxn is analogous to the Irish English reflexive focusing cxn (Burridge and Musgrave, 2014, Lange, 2006)
  - Irish Eng/Jamaican Eng also claimed to have similar ‘variable’ stress pattern

# Features of Indian English...

- What does it mean to be ‘nativized’?
  - If it means to have a unique, emerging standard, that’s happening in India
  - IndEng is becoming the focal variety for some other South Asian Englishes (Gotz, 2022)

# What does it mean to be a ‘L2 variety’

- The situation in India resembles one of *grassroots multilingualism*, rather than structured L2 learning
- While access to English is limited by class, education, geography, background, for many...
- For many, English is learnt naturally, and forcefully, as a part of the linguistic networks they must operate in daily
- Calls into question the validity of terms like ‘native speaker’ and ‘L2 learner’ (Cheng et al, 2021)

# What do Indians think about Indian English?

- Most sociolinguistic studies on Indian English talk about how it is associated with modernity, upper class mobility, prestige, and status
  - All true, but not the full picture!
- English in India also represents an important *intra-national link*
  - It is the only common language that many ethnic groups have, and is often preferred to Hindi for sociopolitical reasons
  - Especially in domains such as the workplace, education or government, English serves as a ‘common ground’
- I want to share some data from a very old study I did and have you make up your own mind about IndEng : )

# But what do Indians think about Indian English?

- C: Like people think that, you know, you're automatically smarter or more intellectual if you can speak English properly, but I've met people who are good at the language but are actually a bunch of dumbfucks
- D: Hindi and English on the other hand are more of a "national language". It's use is more "utilitarian" / use based. Also double edged in that, people judge you for the usage of these languages.

## But what do Indians think about Indian English?

- A: “All speakers of English aren't necessarily from a western country yeah. I mean. when you interact with, people from say America. I've had a couple of occasions where, would you call this a microaggression. Oh, maybe I'm just trying to woke, or twitter-fying it You know, like, comparisons to you know content where, an Indian accent is overly exaggerated. Maybe like "wow this sounds exactly like you". It does not sound anything like me.”
- (Response to a question re: a negative experience you associate w/ English)

## But what do Indians think about Indian English?

- B: I don't think, I mean positive. I've been able to talk to anyone I wanted to, you know. That's not a problem. But like. Negative, Sometimes I feel like I'm just, it's obvious that I -- I don't know- I would consider English my first language and yet I feel like I'm kind of bad at it. Yeah, like I'm stumbling for words or some shit.
- P: Even though it's your first language, you're kind of made to feel bad sometimes, yeah.
- B: Yeah, exactly.

## But what do Indians think about Indian English? (final)

- To me, the standout feeling from my (very preliminary) work on Ind Eng was that there was a sense of ownership, but also a sense of ‘being judged’

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## But what do Indians think about Indian English? (final)

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- Indian English (or rather, the specific varieties of it) are a result of the very specific, local ecologies in each case
- World Englishes are not just a deviation from a ‘standard English’ acc. to the regional flavor
- What’s common in South Asia and many other parts of the world is *grassroots multilingualism*

# Final remarks...

- We should reconsider whether ‘nativization’ needs to mean ‘input as an L1’...
  - We need to consider the role ‘World Englishes’ play in their linguistic landscape
  - Their linguistic features should be analyzed in their own right - and the network of borrowings they’re forming is interesting!
-

Any questions?

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# South Asia as a Linguistic Area

- The puzzle of uneven linguistic diversity
- South Asia as a classical linguistic area
- Where does this fall apart?

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# Linguistic diversity is *uneven*

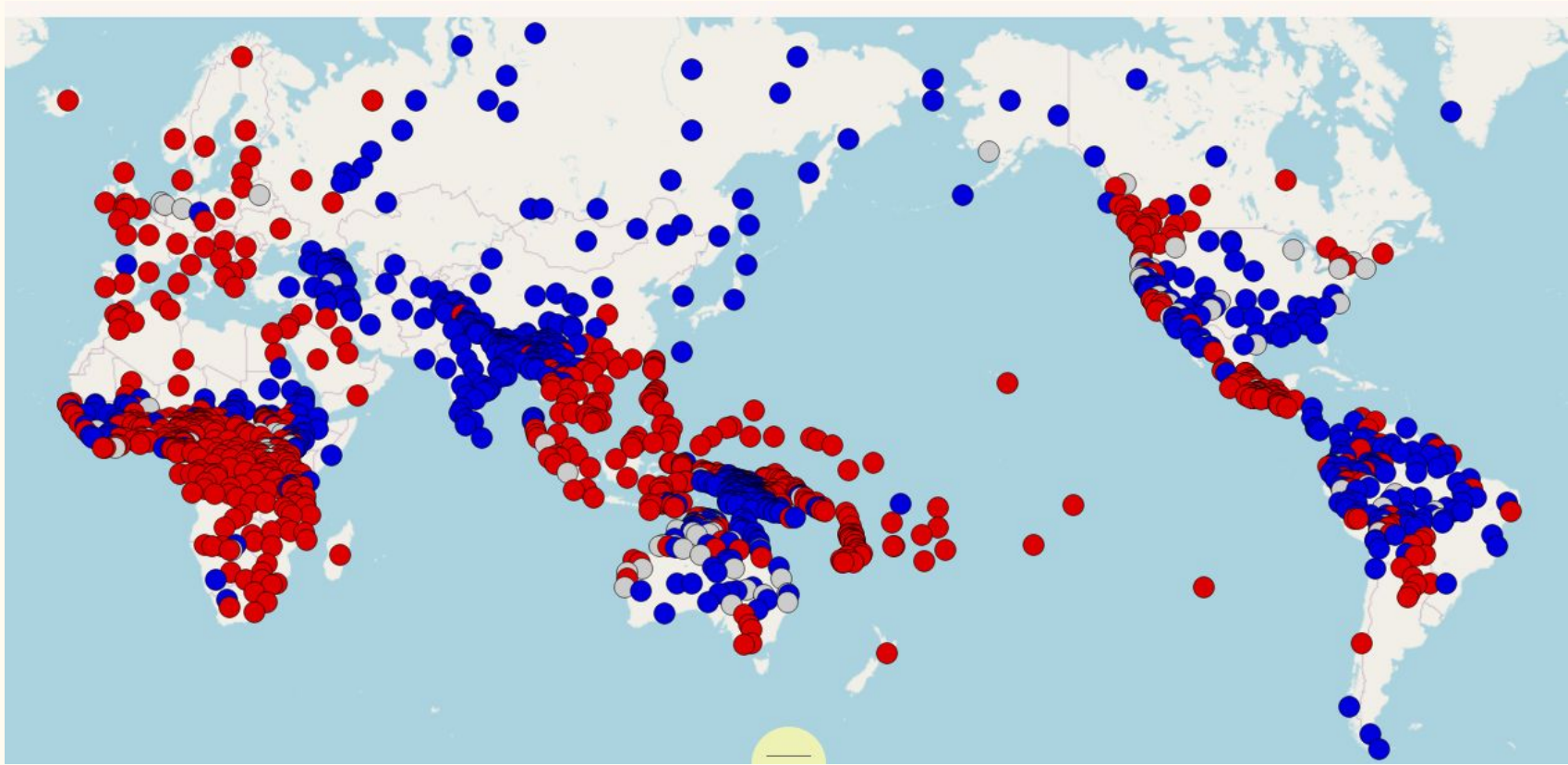
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- Basically: **closer languages are more similar**
- This leads to two ways nearby languages can be similar:
  - Vertical inheritance
  - Horizontal transfer (borrowing)



WALS feature 83A: Order of Object and Verb

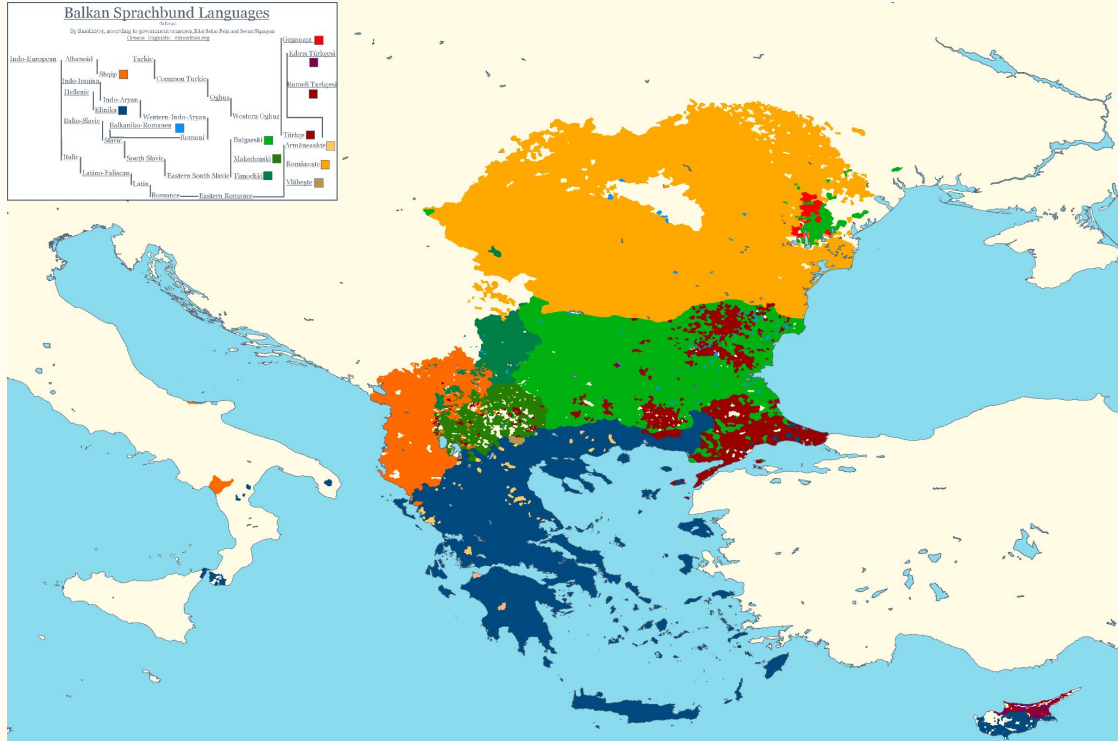
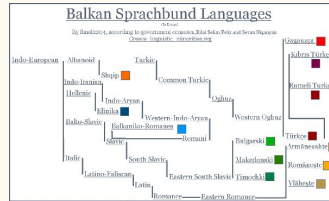
# We've noticed 'areal' patterns for a long time...

But there's still major disagreement on what makes a **linguistic area**.

- ★ How many shared traits? (Stolz)
  - Do some traits just bundle together?
- ★ How many language families?
- ★ Are some traits more important than others?
- ★ How closely do traits need to bundle? (i.e., does there need to be a clear boundary?)

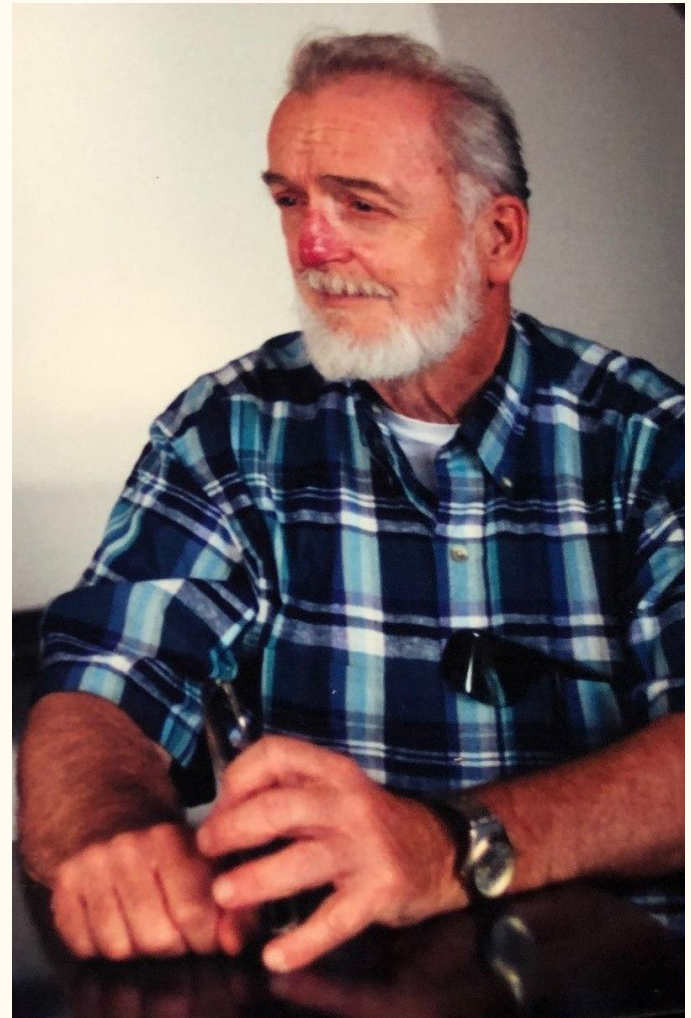
# Sprachbunde, and the linguistic area problem

- Linguists want to be able to characterize languages as being ‘typical’ of an area
- But lack the methods to prove what defines that area!



## Enter, Colin Masica

- Masica's 1976 dissertation was eye-opening for me, and one of the first to definitively suggest a linguistic area *par excellence*
- He's part of a legacy of many who lead to the foundation of **areal linguistics**
- We'll talk about how in just a second.



What, if  
anything, defines  
South Asia?

# A collection of assumptions

- Masica noted that there were many assumptions in the literature at the same time.
- That South Asia was at once both ‘homogenous’ and that the Indo-European languages of the area had kept their character (proven to be wrong, now)
- That the long-standing anthropological similarities between the various cultures of South Asia necessarily begets linguistic similarity
- That the natural boundaries that form the South Asian subcontinent must lead to a naturally convergent zone inside it

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- That the natural boundaries that form the South Asian subcontinent must lead to a naturally convergent zone inside it
- *But none of these were tested!*

# Greenberg's Universals, and Masica

- At the time of writing 'Defining a Linguistic Area', Greenberg's Universals were gaining a lot of attention
- In particular word order universals, which many noticed had areal patterning
- This only re-emphasized the importance of Masica's work – to suggest something was truly universal to human cognition would mean to test and show that it was not simply a function of the patterning of human history



MAP 1. Word Order Feature Distributions

Key:

———— Object precedes Verb

(Note: this also implies Postpositions except where marked as follows:

▨ Prepositions, inside OV

▤ Postpositions, outside OV

▧ Ambipositions, both Prepositions and Postpositions and other transitional phenomena, either inside or outside OV

----- Adj + N order dominant

- - - - Celto-Romance area of mixed N+Adj/Adj+N order, former dominant

— · — · — Genitive precedes Head Noun

········ Standard + Marker ("than") + Adjective order in comparisons

Exceptions: 1 Kashmiri, 2 Khasi,  
3 Basque 4 Kanuri.

And so, he made maps... spanning the entire continent!

# So what really defines South Asia as a linguistic Area?

- Many shared features between Dravidian and Indo-Aryan languages...
  - But homogeneity is overstated
- Word order is more diffusible than grammatical categories
  - But these patterns stretch across Asia
- Phonology is more diffusible than morphosyntax
- But that's not to say that morphosyntax can't change!
- In particular, some very specific *cxns* (mapping of form to meaning)
  - Experiencer datives, explicator compound verbs, emphatic reduplication

# These changes can be really amazing!

- Retroflex consonants in particular, spread from Dravidian languages to languages they have *never been in contact with*:
  - Found in north Indo-Aryan languages, but as apicopost-alveolars'
  - But also found in Western Tibetic languages on the far north end of South Asia that never encountered any Dravidian populations! (Shaikh, in press)



Figure 1: Linguograms and a palatogram of the post-alveolar voiceless plosive /t/ when pronouncing the word /tuk/ 'six'



Figure 2: Linguographs and a palatograph of the dental voiced plosive /d/ when pronouncing the word /dan/ 'yesterday'

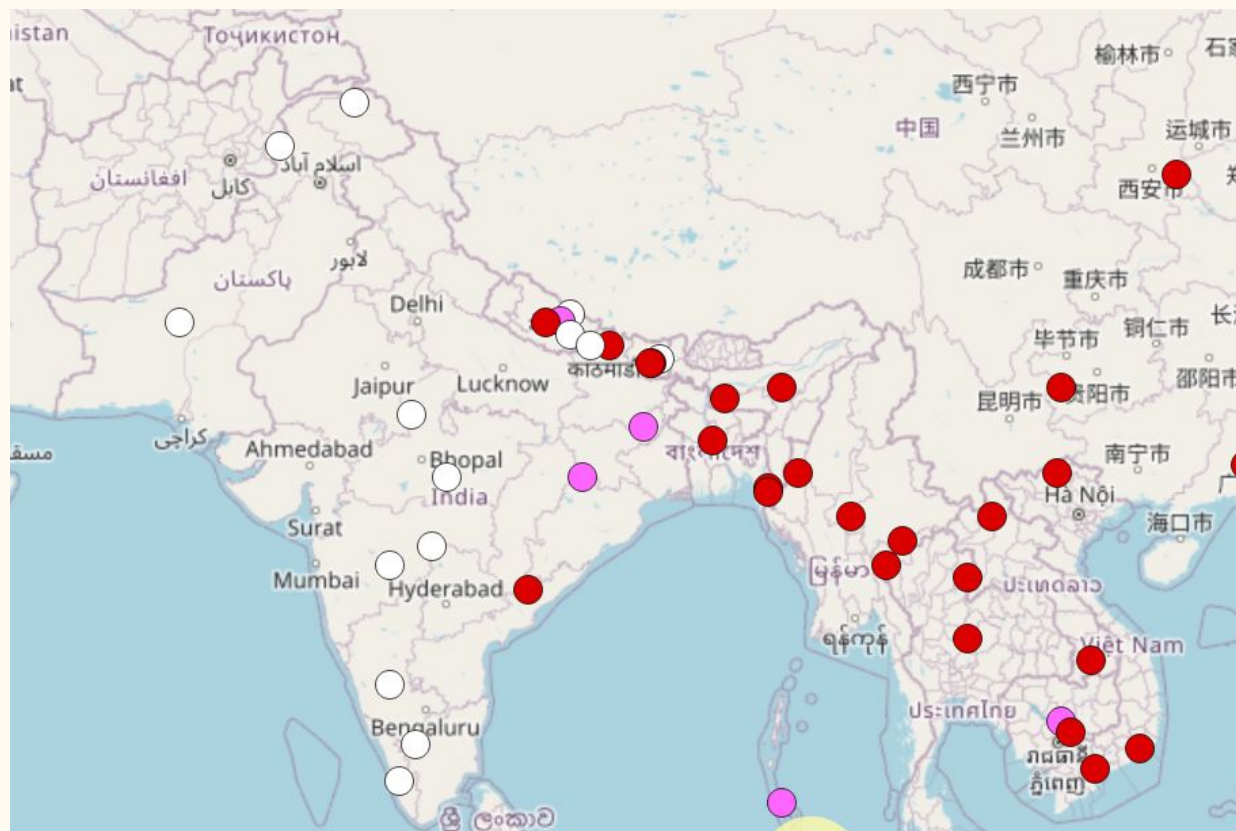
But what about  
the edges of this  
linguistic area?

# The Eastern Himalayan Region, and Numeral Classifiers

- ❖ Claimed to be a linguistic area (Moral, 1997), numeral classifiers a defining feature
- ❖ Spread across five different family-level groups
- ❖ No agreement on origin or method of transmission



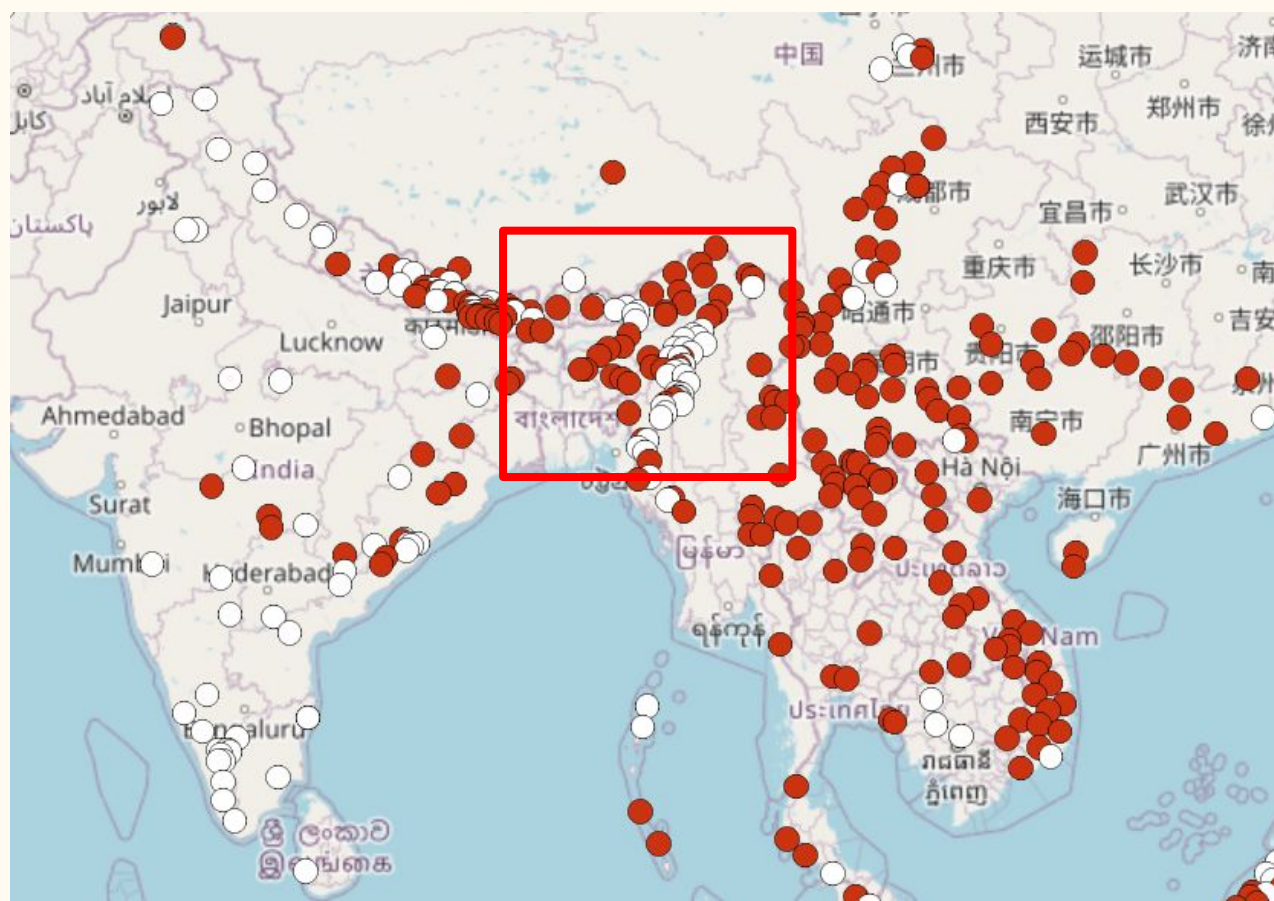
Fig. 1. Map showing the location (black square in A) and topographic details of the eastern Himalayan region and Northeast India (B) in South and East Asia.



## Values

○	Absent	260
●	Optional	62
●	Obligatory	78

WALS Feature 55A: Numeral Classifiers (Gil, 2015)



Grambank feature GB057: Are there numeral classifiers? (Collins and Lata arche)

# Numeral Classifiers, and Areality

→ Defining our object: numeral classifiers here are *linguistic material occurring with nouns and number words, reflecting some inherent property of the noun (such as shape, gender, animacy)*

◆ Consider:

- |                                |             |     |
|--------------------------------|-------------|-----|
| <b>kei-khan-mān</b>            | <b>sidi</b> | tār |
| <b>some-CLF:2dmnsl</b> -approx | <b>CD</b>   | his |
| <b>Q-CL</b> -approx            | <b>N</b>    | his |

‘Some of the CDs are his.’  
Assamese (Borah, 2018:200)

# Numeral classifiers, and their claim for EHR

- High (abnormally so!) frequency in the EHR across lang families
- Hence, noted as an areal feature
  - From Emeneau (1956), to Chelliah and Lester (2017)
  - But no agreement on origin

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If it's areal... *how?*

What explains the  
distribution of  
numeral classifiers  
in the EHR?

# Operationalizing Areal Mechanisms

If a characteristic, numeral classifier type arose here from contact ...

Then, we should be able to:

1. Figure out who ‘borrowed’, and who ‘originated’/‘inherited’
2. Posit a mechanism for the borrowing

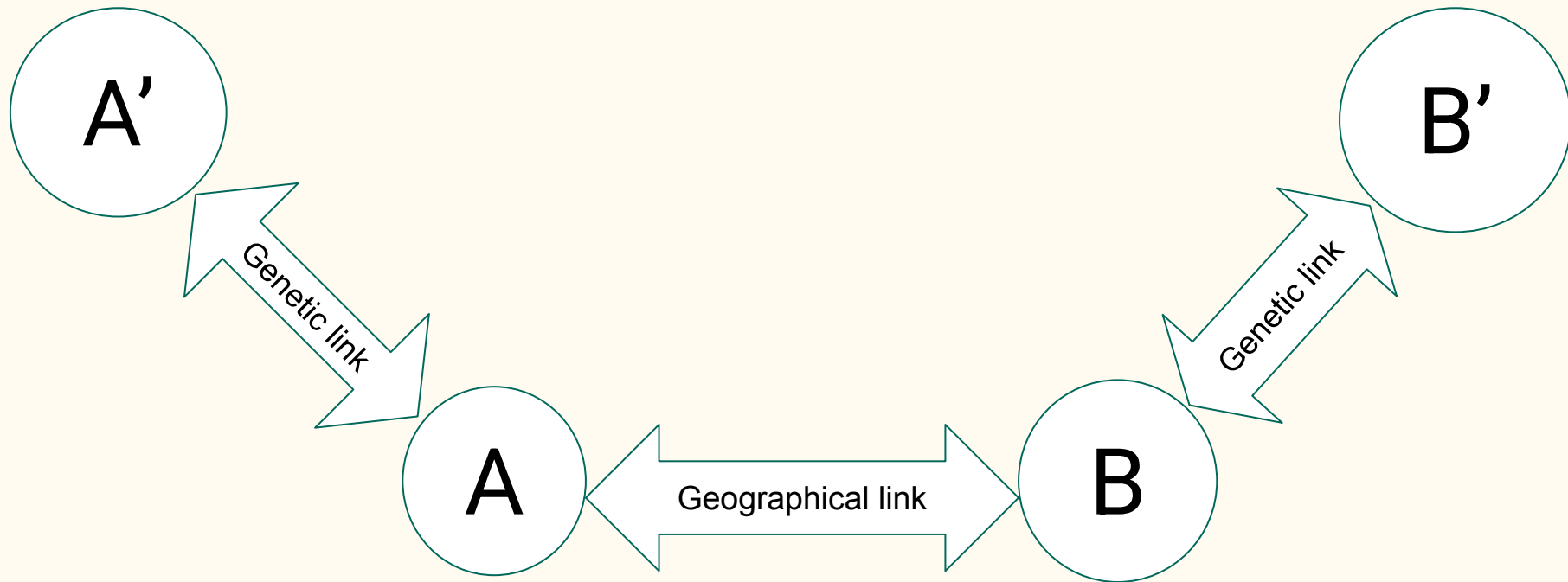
# Who borrowed?

We can use the ‘Contact Correspondence Hypothesis’, a way of formalizing intuitions about the directionality of contact.

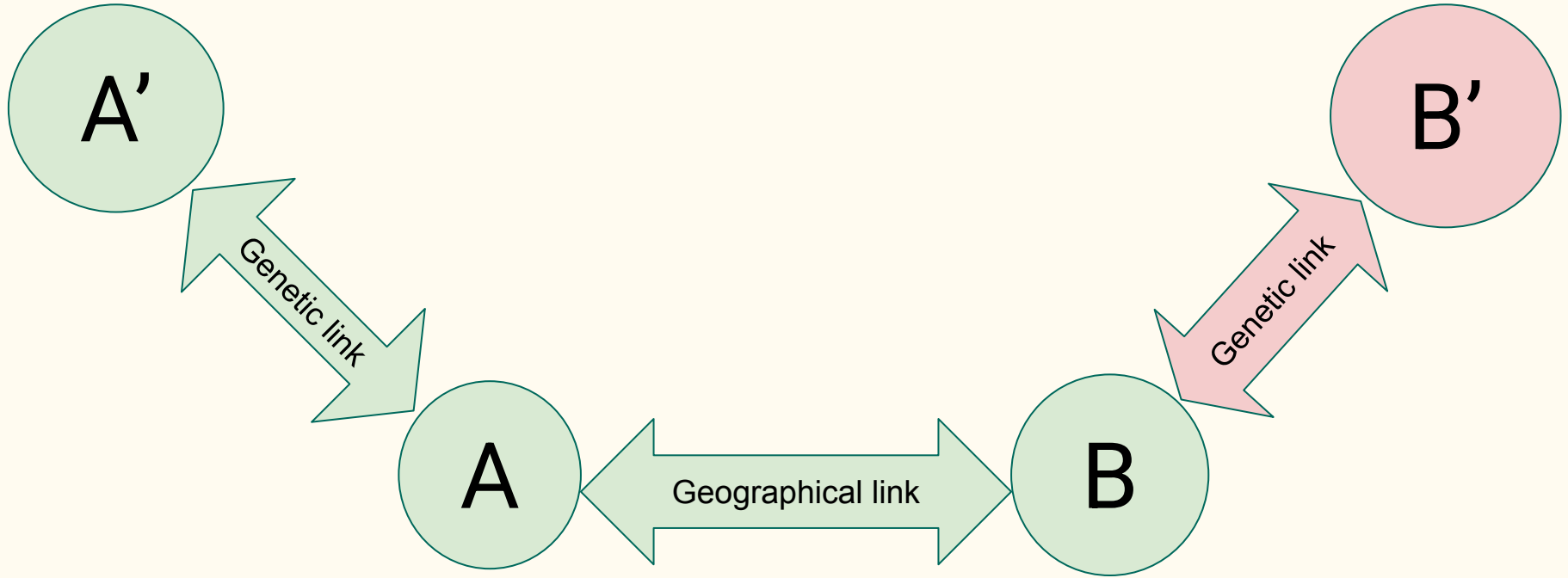
If we:

- Take the presence/absence of a given feature for languages in the area
- Compare those values, to the values in their closest relatives outside the area (‘a control’)

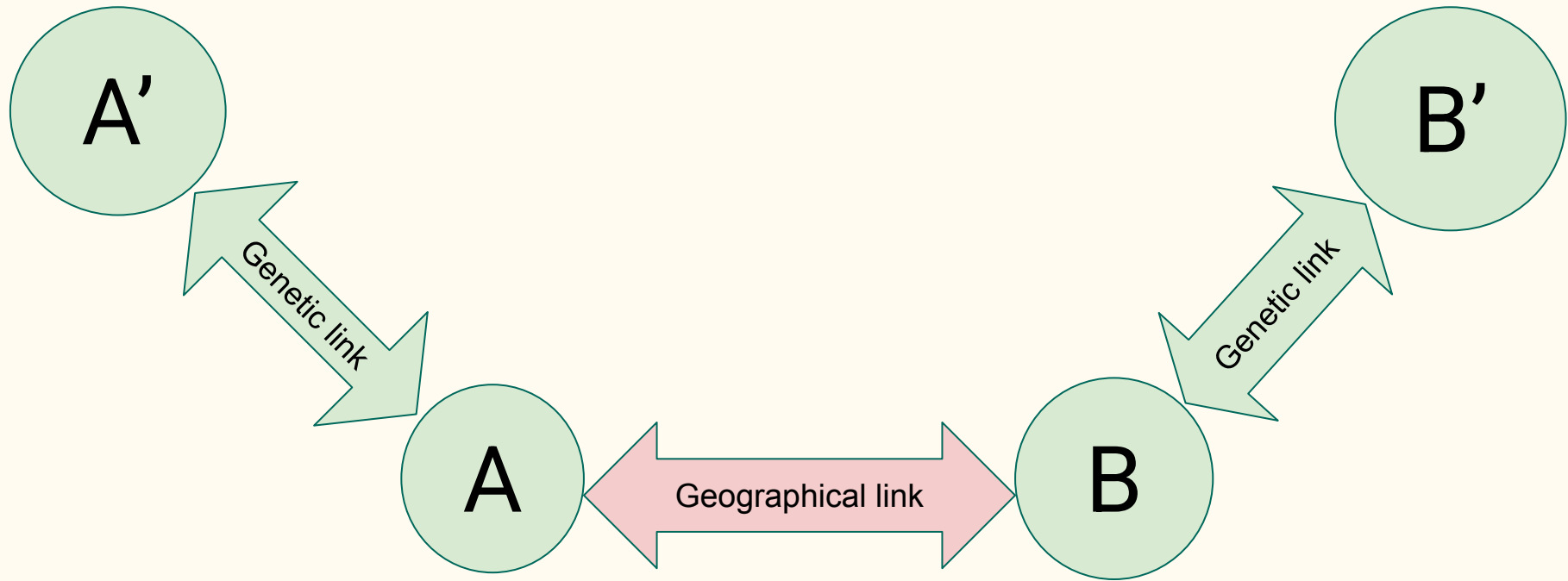
That helps establish a baseline for whether it’s likelier that they inherited numeral classifiers, or gained it from contact in the area.



**Formulating the CCH:** A and B are languages in contact, A' is the close relative of A, B' is the close relative of B



**Case 1- Contact:** If A, A' and B are positive for given feature X, we need both genetic and geographical links, and horizontal transfer succeeds.



**Case 2 - Inheritance:** If all languages share feature X, two genetic links (between A' and A and B' and B) are sufficient, and retention is a more likely explanation, rather than contact.

So if there is metatypy in this region...

There should be an identifiable pattern of numeral classifier construction.

- Three key elements: N/Q/CL (Her, 2017)
- Order of Classifier (CL) and Numeral/Quantifier (Q)
- Order of Noun (N) and Classifier unit ( $CLF = CL + Q$ )

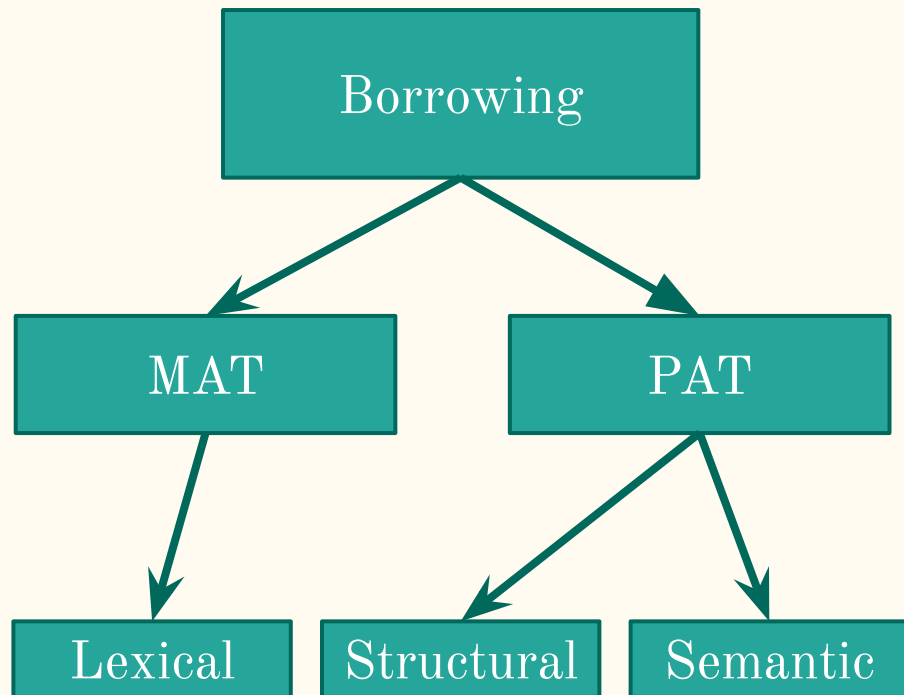
# Data and Methods: Sampling

- 22 languages of the EHR were sampled, along with 6 controls.  
20/22 had classifiers.
- Data was collected from reference grammars and academic articles
- Sentence data with classifiers, and lexical data of classifiers

Language (Sub)Family	Number of langs	Control(s)
Eastern Indo-Aryan	3	Odia
Tibeto-Burman	11	Yi, Burmese
Khasi-Palaung	3	Wa, Dara'ang Palaung
Southwest Tai	3	Standard Thai
Kurux-Malto	2	Excluded (c.f. p. 16)

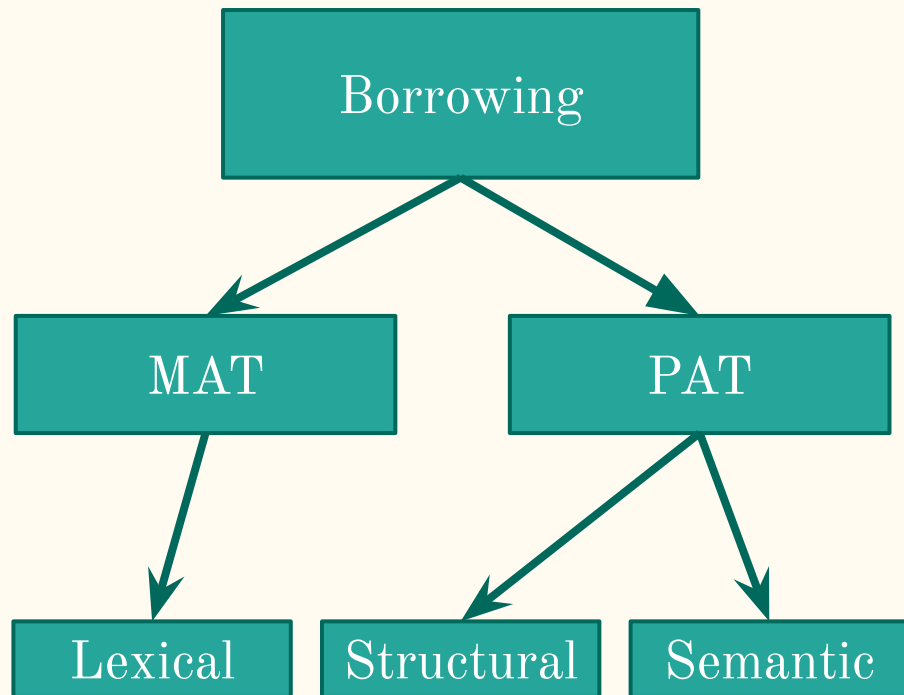
# Data and Methods: Framework

- Matras and Sakel (2007) predicts borrowing to be of either matter (MAT) or pattern (PAT). The first is taken to reflect lexical borrowing, the latter is split into structural and semantic borrowing.



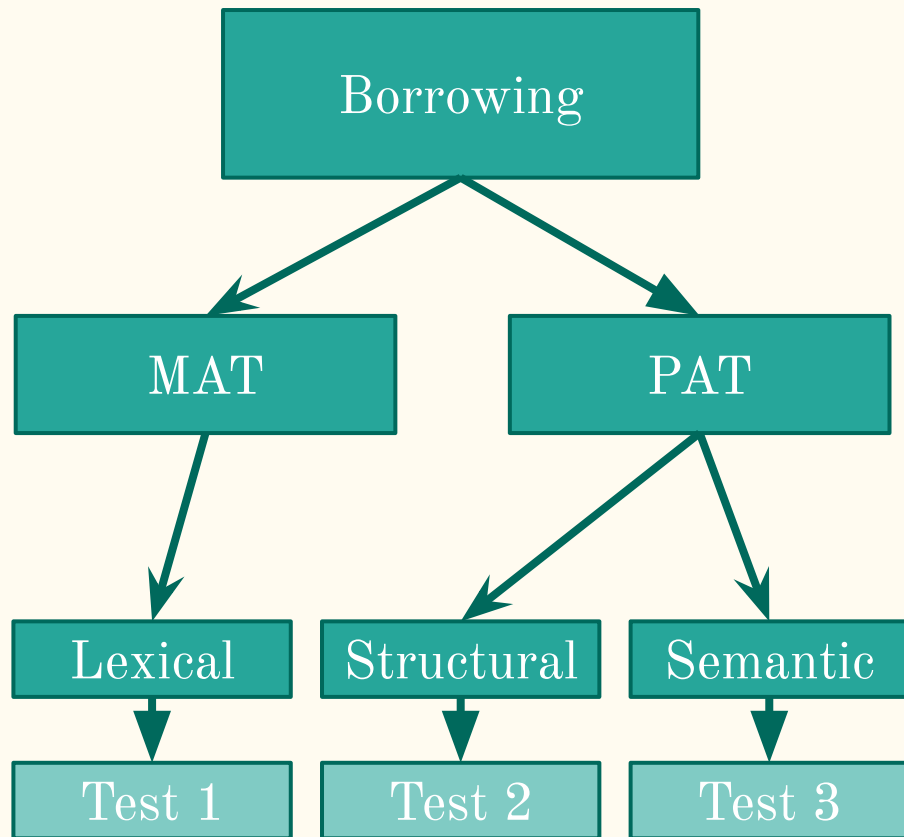
# Data and Methods: Framework

- Matras and Sakel (2007) predicts borrowing to be of either matter (MAT) or pattern (PAT). The first is taken to reflect lexical borrowing, the latter is split into structural and semantic borrowing.
- Along with the Contact Correspondence Hypothesis (CCH), this helps us generate our tests



# Data and Methods: Generating Tests

- Test 1: Look for lexical borrowing
- Test 2: Look for structural borrowing
- Test 3: Look for semantic pattern borrowing



# Metatypy! (or ‘Syntactic Calquing’)

A quick refresher on metatypy  
(Ross, 1996):

- a) Arop-Lokep (Oceanic):
- |                  |                  |             |
|------------------|------------------|-------------|
| <i>rumu ke</i>   | <b>tool</b>      | <b>in</b>   |
| <i>house ABL</i> | <b>man</b>       | <b>that</b> |
| <i>possessum</i> | <b>possessor</b> |             |
- ‘that man’s house’

- b. Takia (Oceanic):

<b>Kai</b>	<i>sa-n</i>	<i>ab</i>
<b>Kai</b>	<i>CLASS-his</i>	<i>house</i>

*possessor-possessum*  
‘Kai’s house’

- c. Waskia (Papuan):

<b>Kai</b>	<i>ko</i>	<i>kawam</i>
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So if there is metatypy in this region...

There should be an identifiable pattern of numeral classifier construction.

- Three key elements: N/Q/CL (Her, 2017)
- Order of Classifier (CL) and Numeral/Quantifier (Q)
- Order of Noun (N) and Classifier unit ( $CLF = CL + Q$ )

# A formulation...

If two unrelated languages share the order of Q/CL and CLF/N...

- > supports the metatypy hypothesis

- > If not, casts (some) doubt on the areal hypothesis.

# An example of coding the key elements...

- 1) **kei-khan-mān** **sidi tār**  
**some-CLF:2dmnsl-approx** **CD** his  
‘Some of the CDs are his.’  
Assamese (Borah, 2018:200)

# An example of coding the key elements...

1) **kei-khan-mān**

**sidi** tār

Numeral/Quantifier (**kei**) ⇒

**Q**

**some-CLF:2dmnsl**-approx

**CD** his

Classifier (**khan**) ⇒ CL

**Q-CL**-approx

**N** his

Noun (**sidi**) ⇒ N

‘Some of the CDs are his.’

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# An example of coding the key elements...

1)	<b>kei-khan-mān</b>	<b>sidi</b> tār	Numeral/Quantifier ( <b>kei</b> ) $\Rightarrow$
	Q		
	<b>some-CLF:2dmnsl</b> -approx	<b>CD</b> his	Classifier ( <b>khan</b> ) $\Rightarrow$ CL
	<b>Q-CL</b> -approx	<b>N</b> his	Noun ( <b>sidi</b> ) $\Rightarrow$ N
	‘Some of the CDs are his.’		<b>Q + CL (kei-khan) <math>\Rightarrow</math> CLF</b>
	Assamese (Borah, 2018:200)		<b>Order: Q-CL, CLF-N</b>

# Results!

## Finding 1: Classifier lexeme borrowing is rare

- Only 5 out of 252 recorded classifiers could be lexical borrowings
- Some core, but not widespread enough

Language(s)	Assamese, Hakhun Tangsa	Atong, Rabha -> Ahom	Khasian -> Hills Karbi	Indo-Aryan -> Kurux
Classifier-Lexeme	‘leaves’ <i>pāh</i> / <i>pù</i>	‘1d object long/thin’ <i>tyng/tiŋ</i> -> <i>tun</i>	‘human’ <i>ɣut</i>	‘human’ <i>jon/dʒon/zan</i> -> <i>jʰan</i>

## Finding 1: Classifier lexeme borrowing is rare

- A look at mensural classifiers though, reveals that loans retain their foreign constructional pattern

- 1) pan      **phang**-sa  
tree      **CL:plant**-one  
one tree
- 2) cari-**pura**      mai  
four-**CL**      paddy  
'four bundles of paddy'

Rabha (Joseph, 2007:442)

Native classifier,  
order  
(N+CL+Q)

Foreign classifier,  
order  
(Q+CL+N)

## Finding 2: Structural Patterns in Numeral Classifier Cxns Reflect Genealogy, not Contact

Language	Language Family	Order of Q/CL	Order of CLF/N	Total Order
Pnar	Austro-Asiatic	Q-CL	CLF-N	Q-CL-N
Khasi				
War-Jaintya				
Assamese	Indo-European	Q-CL	CLF-N	Q-CL-N
Sylheti				
Bengali				
Ahom	Kra-Dai	Q-CL	N-CLF	N-Q-CL
Aiton				
Khamti				
Atong	Sino-Tibetan	CL-Q	N-CLF	N-CL-Q
Rabha				
Bodo-Mech				
Garo				
Hills Karbi				
Bori-Karko				
Mising				
Idu				
Hakhun Tangsa				

Language Family	Order of Q/CL	Order of CLF/N	Full Order	Control Language
Eastern-Indo Aryan	Q-CL	CLF+N	Q+CL+N	Q+CL+N (Odia)
Khasi-Palaung	Q-CL	CLF+N	Q+CL+N	N+Q+CL (Wa, Dara'ang Palaung)
Tibeto-Burman	CL-Q	N+CLF	N+CL+Q	N+Q+CL (Burmese, Yi), Absent (Manipuri)
SW Tai	Q-CL	N+CLF	N+Q+CL	N+Q+CL (Standard Thai)

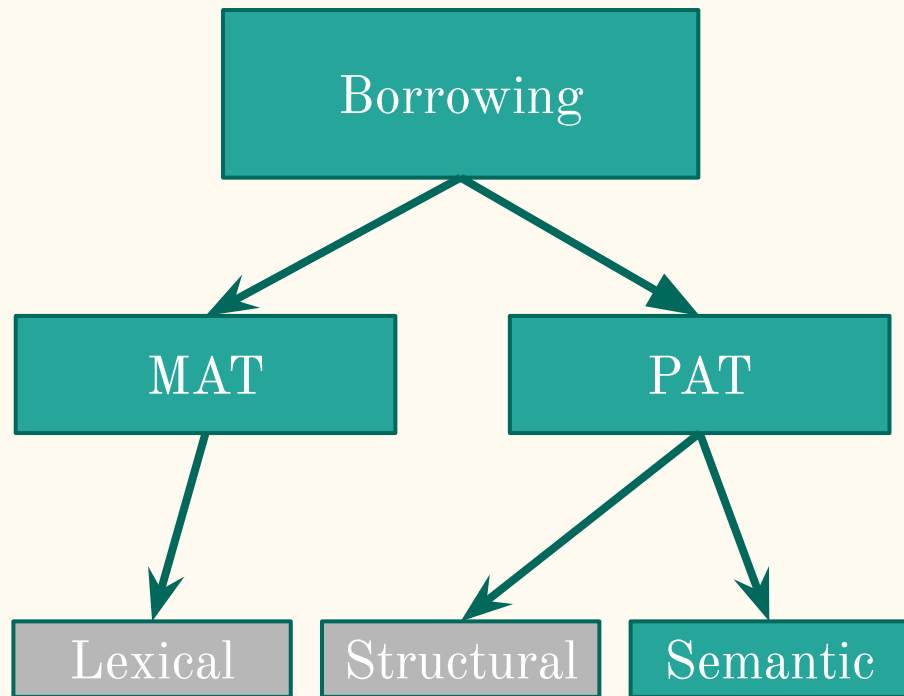
The CCH finds metatypy... just not here

Finding 3: While 10 out of 20 languages' classifier systems are dominated by cognates...  
 5 languages show significant ( $>25\%$ ) overlap in semantic pattern (category)

Language	Cognate	Loaned	Cognate category	Semantic overlap	Cognate shifted	Loan shifted	Innovation	total
Assamese	3 (21%)	1	1	7 (50%)	1	0	1	14
Khamti	3	0	2	5 (31%)	0	0	6 (37%)	16
Pnar	2 (66%)	0	0	1 (33%)	0	0	0	3
Sylheti	3 (50%)	0	0	2 (33%)	0	0	1	6
Aiton	6 (25%)	0	2	6 (25%)	0	0	10 (42%)	24
Atong	6	0	11	5 (14%)	0	0	13 (37%)	35
Mising	3	0	3	2 (13%)	0	0	7 (47%)	15
Rabha	4	0	1	1 (8%)	0	0	6 (50%)	12

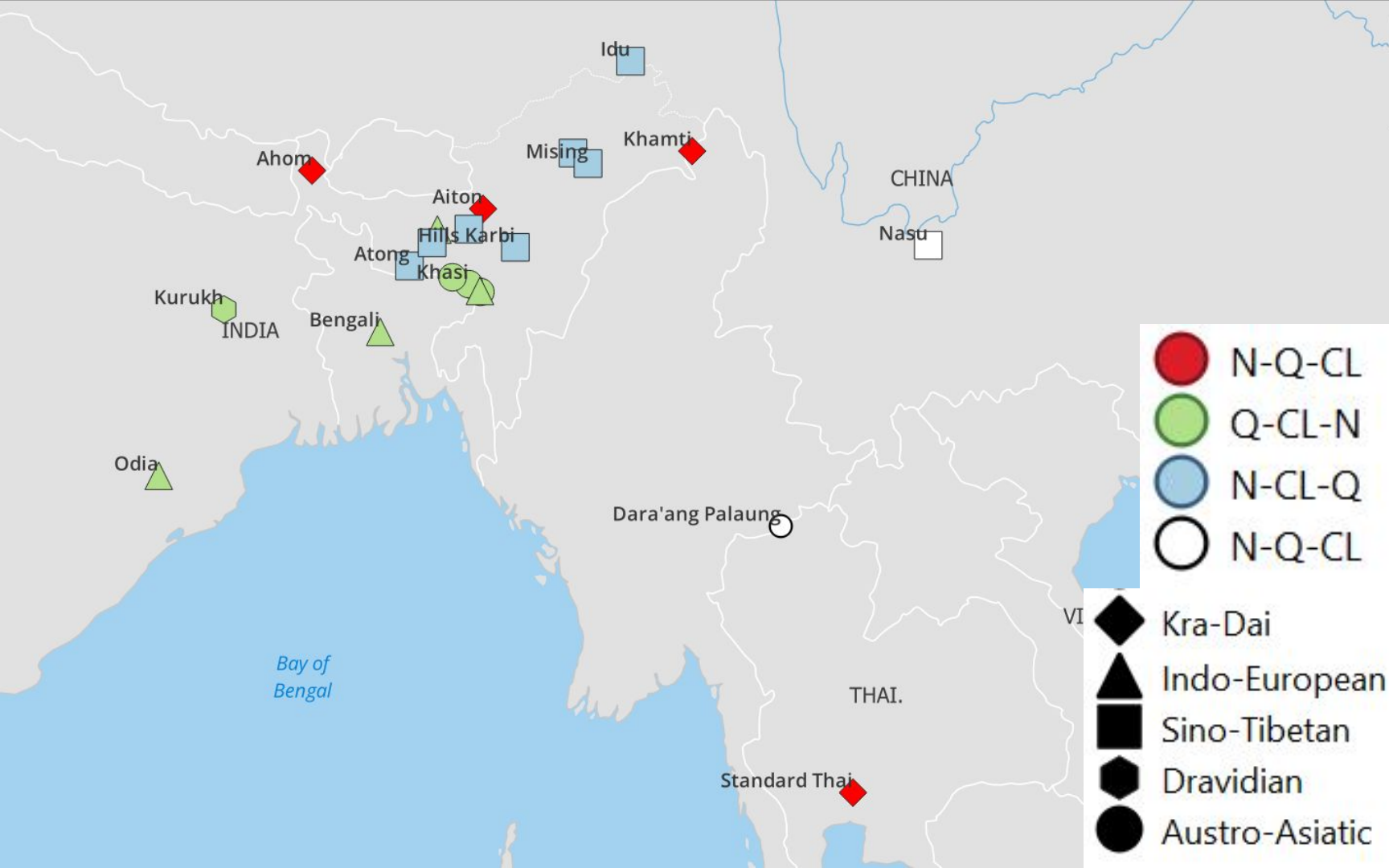
Test	Result
Lexical borrowing	No/little lexical borrowing
Structural borrowing	Genealogical identity in structure
Semantic borrowing	Some overlap!

## Framing our results

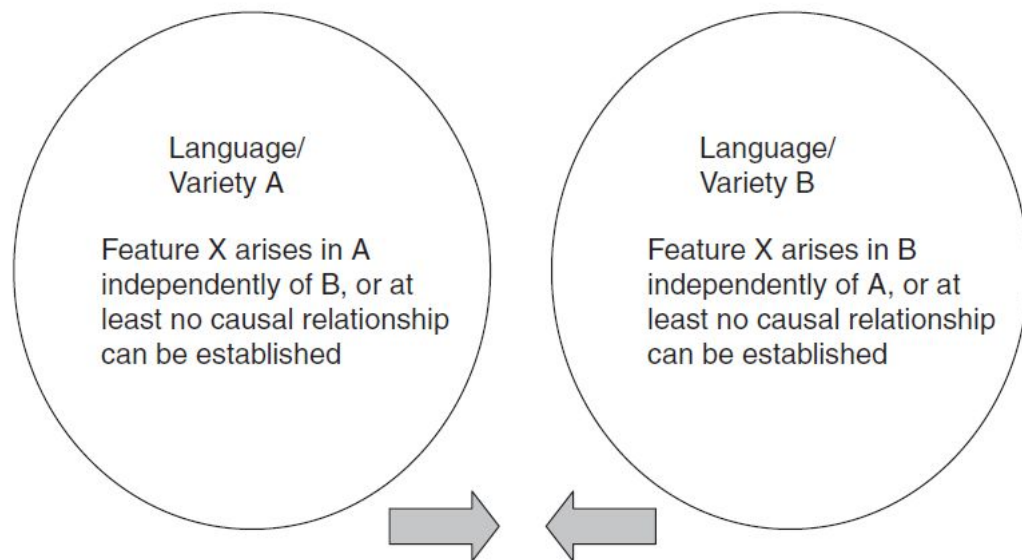


## The historical evidence...

- Kra-Dai timeline predicts multiple borrowing events into different language families of the EHR: the present study does not find evidence of this
- Khasian is a typologically interesting case of classifier gain: pre-existing plural marking and gender system
- Eastern IA classifiers have reflexes further west, and are borrowed into Munda languages there
- See more in the paper



# What explains semantic similarity?



**Figure 1.4** Feature development: (coincidental) increase in areality

Figure from Hickey (2017)

Suggesting a theory of *maintenance*

# Complex Areas, Complex Solutions..



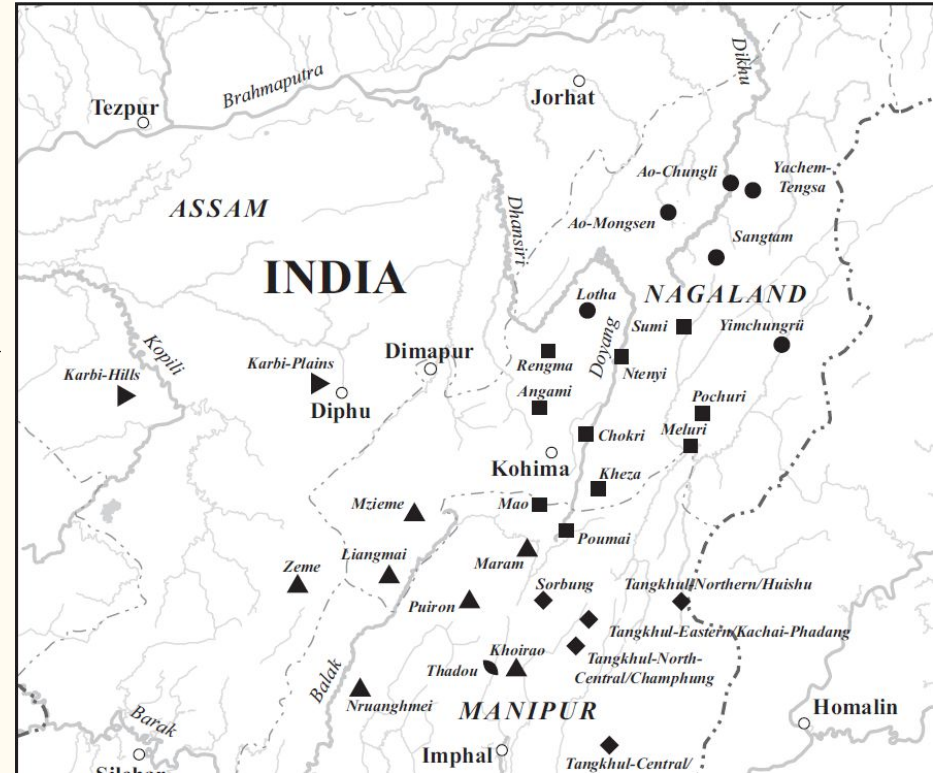
Fig. 1. Map showing the location (black square in A) and topographic details of the eastern Himalayan region and Northeast India (B) in South and East Asia.

# Language Contact in Nagaland

—

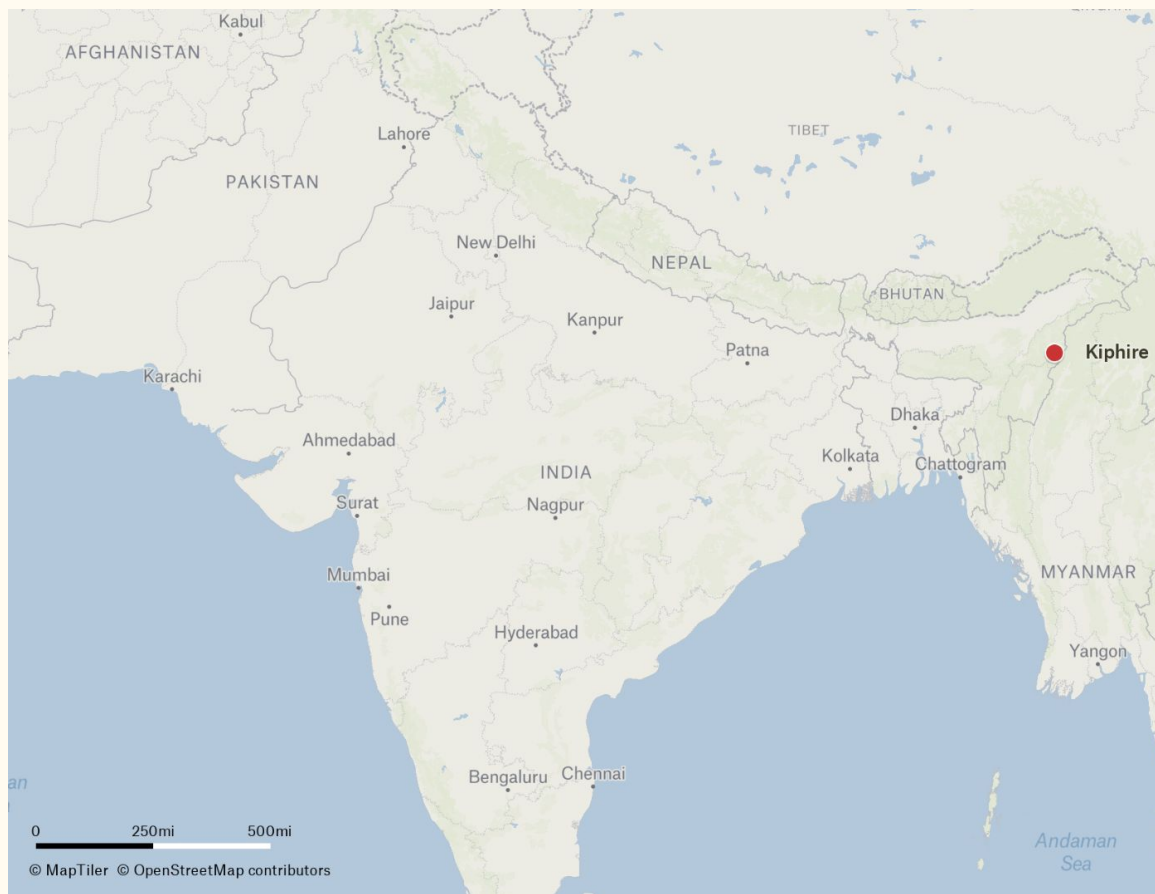
# Nagaland, and linguistic diversity

- One of the hotbeds of linguistic diversity in the world!
- Many languages here just classified as 'Naga', which is an ethnic, not genetic or linguistic label
- Many undocumented lgs which could be the key to TB origins!



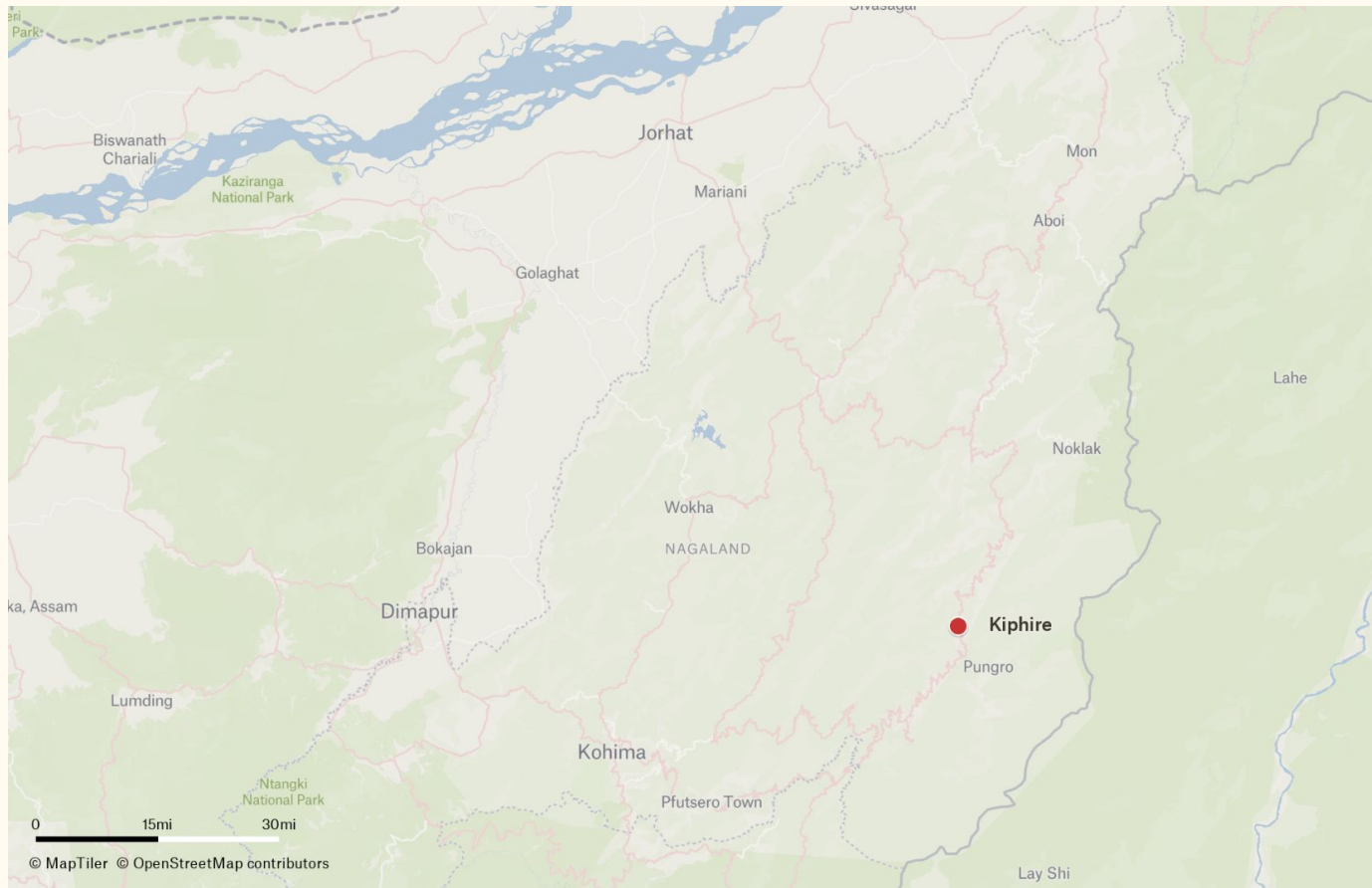
# Documenting Tikhir, A Minority Naga Language

- An undescribed Tibeto-Burman language spoken in North-East India in the state of Nagaland
- Speakers typically speak 3-4 other languages
- Mainly spoken in the Kiphire district, very close to Myanmar border!
- About 11,000 speakers, but that is based on census data
- Still being transmitted! : )



On a map:

<https://felt.com/map/Tikhir-map-0v7aXOYUSuq4Ji5Sz1o7gB?loc=26.12,-272.45,6z&share=1>



Zoomed in



Photo from the Morung Express:

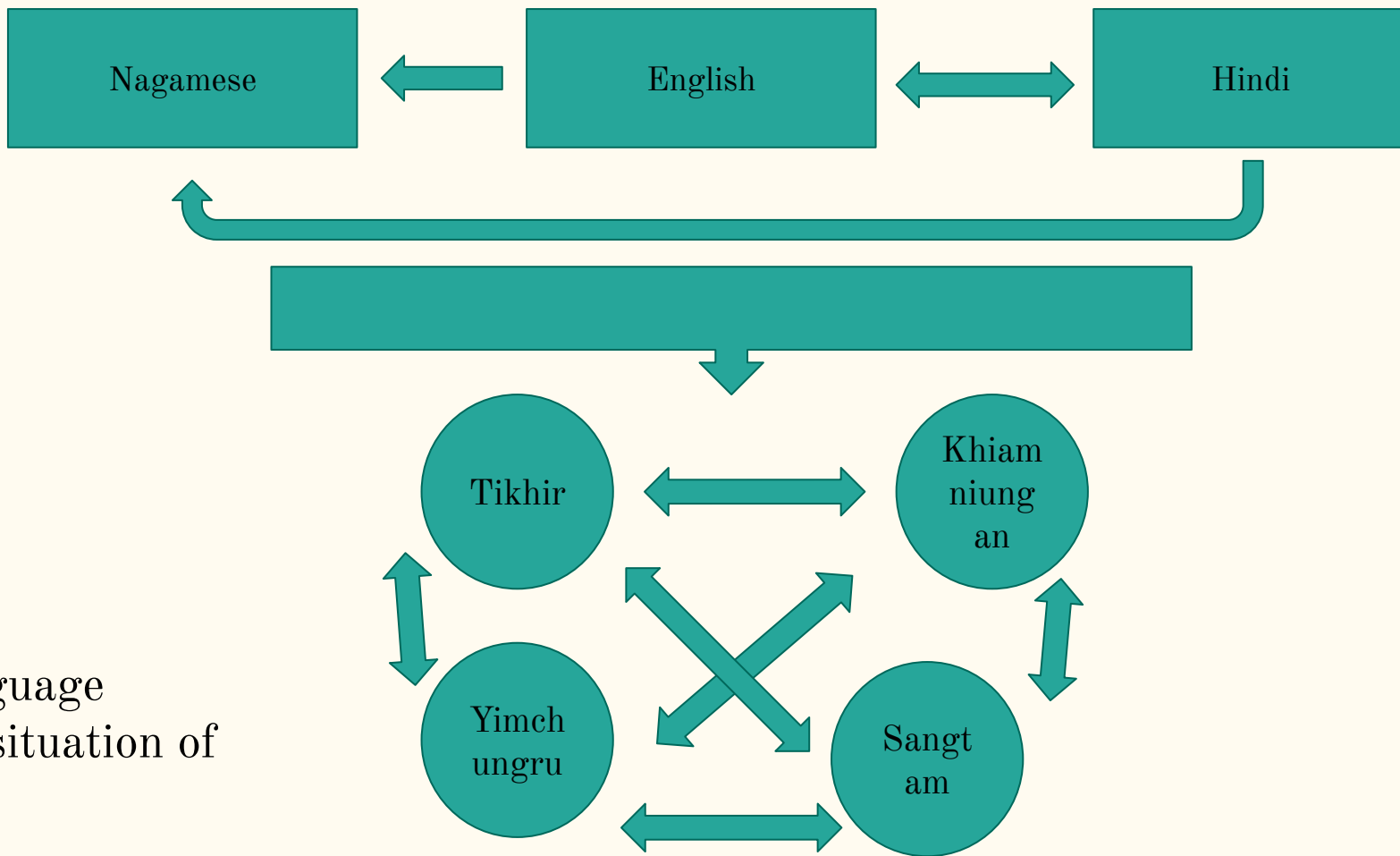
<https://morungexpress.com/nagaland-churches-to-reopen-in-kiphire-after-september-21>



Some pictures : ) - left to right, Apong Tikhir, Kiusumong Tikhir, me, Vichimshi T. Tikhir, Mimi Kevichüsa Ezüng



With Tsangli sir, far left in left pic, and N. Yutzü sir, middle in right pic



The language  
contact situation of  
Tikhir

	Gongvan	Wolam		Tikhir
		expected	actual	

ONE	zak	*tak	tak	k <sup>h</sup> ah
TWO	nai	*ne	lə.me?	na.mei
THREE	sam	*ham	ha.me?	sa.met
FOUR	bə.lai	*pə.le	pə.le	p <sup>h</sup> u.jei
FIVE	bo.ŋu	*pə.ŋu	pə.ŋu	p <sup>h</sup> oŋ.mei
SIX	də.uak	*li.juk	i.juk	t <sup>h</sup> ə.rok

Leads you to interesting discoveries! (by van Dam, p.c.)

## To sum up...

- We can learn a lot by considering language contact as part of a larger, complex system
  - Characterizing that larger, complex system, is a challenge, but doable!
  - Language contact occurs at the individual level, and we need to ask ourselves what is the linguistic reality of the individual?
-

# Thank you!

I have an in-progress academic website at [patrickdas.github.io](https://patrickdas.github.io) if you want to see my work (not up yet!)

You can also email me at [Patrick.Das@colorado.edu](mailto:Patrick.Das@colorado.edu) to get in touch : )

