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Communication patterns and the relative speed of language change

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Language change is

- not homogeneous in nature
- not uniform in speed

Not homogeneous

- This means:

- Innovations may touch different zones in similar languages.
- Changes may touch one element without modifying the next one.

- It is highly debatable if a language is a system at all.
- The more sensible opinion is that some areas in a given language behave more like a system, others more like sand-like quantities.
- These are not always the same areas in all languages.

Change and fantasy: the ‘head’ example

[k p t]

caput

cap	houbit	heōfod
chef	haupt	head
[k p ø]	[k p t]	[k ø t]

Not uniform in speed (1)

- Because of what we just remarked,
- « speed of language change » cannot be taken at face value.
- Since languages do not change as solid blocks, it is meaningless to evaluate a speed of change.

- Yet, many scholars thought (and some still think) that, on the whole, languages do change at the same pace, whatever the period.
- The most famous exemple of this superstition is Swaddesh's glottochronology, in the 1950s.

What was glottochronology?

- W. F. Libby discovers in 1946 the properties of ^{14}C. In 1949 and 1950, he offers his first results.
- Swadesh 1952: 'Lexico-statistic dating of Prehistoric ethnic contacts'.
- Swadesh's main idea is to test the principle of a constant rate of lexicon renewal.
- Since one cannot test it on the full lexicon of a language, Swadesh tries to produce test-lists.

Not uniform in speed (2)

- A side effect of this is the false « cradle » pattern.

- Many people think that, on a map indicating the distribution of related languages, the more dense area is also the likely cradle for the family.
- Alas, this is only a consequence of a false principle. Because it implies that language split is a consequence of time span : the longer lapse, the stronger split. According to this principle, yes, the more ‘splitted’ area is a witness of a longer duration on the spot.

- Since the principle is not valid, better drop the consequence.

The Chinese languages exemple

Would we follow
the false Cradle pattern,
we should decide Chinese languages
were « born » in the South.

R. Ramsey. 1987. *The Languages of China*, Princeton.

The speed problem (1)

- Although languages are not homogeneous and certainly do not change at a regular speed,
- yet, we have a definite impression that some languages have changed more or, to put it in a better way: that some languages are the result of more changes than other ones.

- Obviously,
  - English changed more than German,
  - or Danish than Icelandic
  - or Maltese than Egyptian Arabic
  - or Sarcelles Aramean than Tell Aviv Hebrew
  - or Northern French than Southern French
  - or Oroch than Evenki, etc.

The speed problem (2)

- This impression about « more » or « less » change may depend on what we compare. And therefore depends on what is easier to compare.

- Since morphology usually makes easier comparison, we rely more (in scholarly papers) on morphology.
- We may also rely (with care) on lexical data, although counting lexical innovations sometimes gives weird results – depending of course on which lexicon you compare.

- Yet, the facts hold true: some languages have changed more. That is: more quickly.

- Now, this is not surprising.
- If the rate of innovations is not mechanical, we may expect innovations to be more numerous in some languages than in other ones.

- The question is: how or why?

- There are, roughly speaking, two kinds of answers.

Two kinds of answers

- One is about why people like innovating, at the personnal level, and how they do it.
- The other answer is about the social control on personnal innovation: the regulation.
- We are interested (here) in the 2nd answer.
  And we can safely assume that innovations are produced by speakers in all languages.

The social control on innovation

- I suggest that the speed of language change heavily depends on how far a social group of speakers may admit the change. This control is not always normative.

- The main point is that within very sparse communities, say herders navigating on a wide territory, innovations will require a long time before being endorsed or rejected;

- while within dense communities, say a urban nuclear group, innovations can be activated (or rejected) very quickly.

- Therefore, for an equivalent lapse of time, more innovations can be grafted on a language if it is spoken by a dense community.

The « law »

- Therefore, the languages of dense groups of speakers will, on the whole, change more rapidly than the languages spoken by sparse communities.

- Please note that the number of speakers is not important in this respect.

- Please (also) note that this principle can apply even when contrasting small groups of speakers (for instance, neolithic folks). Even then, you may find dense groups vs sparse groups.

An example out of the Steppes


KAZAKHSTAN
Almaty
Tashkent
Bishkek
UZBEKISTAN
KYRGYZSTAN
Ürümqi
MONGOLIA
GOBI
Shenyang
NORTH KOREA
Dandong
Beijing
P'yongyang
Baotou
Datong
Tianjin
Seoul
Dushanbe
XINJIANG UYGUR AUTONOMOUS REGION
INNER MONGOLIA AUTONOMOUS REGION
GANSU
Taiyuan
Zibo
Qingdao
Handan
Jinan
SHANXI
SHANDONG
Lanzhou
Xining
Zhengzhou
AFGHANISTAN
Peshāwar
Islāmābād
QINGHAI
Xi'an
Luoyang
East China Sea
Shanghai
Nanjing
CHINA
SHAANXI
HENAN
Hangzhou
ASIA
Faisalābād
Lahore
Multān
Ludhiāna
PAKISTAN
SICHUAN
Wuhan
Ningbo
TIBET
Chengdu
Chongqing
Nanchang
Changsha
HIMALAYAS
Delhi
Jodhpur
Jaipur
NEPAL
Kathmandu
Fuzhou
Taipei
Karāchi
Hyderābād
Kānpur
Lucknow
BHUTAN
Guiyang
Patna
Guwāhāti
YUNNAN
GUIZHOU
TAIWAN
Liuzhou
Kunming
Ahmadābād
Vadodara
Bhopāl
Dhaka
Kaohsiung
Guangzhou
Canton
Hong Kong
Surat
Kolkata
Calcutta
Chittagong
Mandalay
Nāgpur
Hanoi
Haiphong
Mumbai
Bombay
INDIA
MYANMAR
LAOS
Pune
Hyderābād
Vientiane
Paracel Islands (disputed)
Yangon
Rangoon
Arabian Sea
VIETNAM
THAILAND
Bangkok
South China Sea
Spratly Islands (disputed)
Bangalore
Chennai
Madras
CAMBODIA
Bay of Bengal
INDIAN OCEAN
Cochin
Phnom Penh
Ho Chi Minh City
Andaman Sea
Gulf of Thailand
SRI LANKA
Sri Jayawardenepura Kotte
Malé
Strait of Malacca
Bandar Seri Begawan
SUNDA ISLANDS
MALAYSIA
INDONESIA
PHILIPPINES
LUZON
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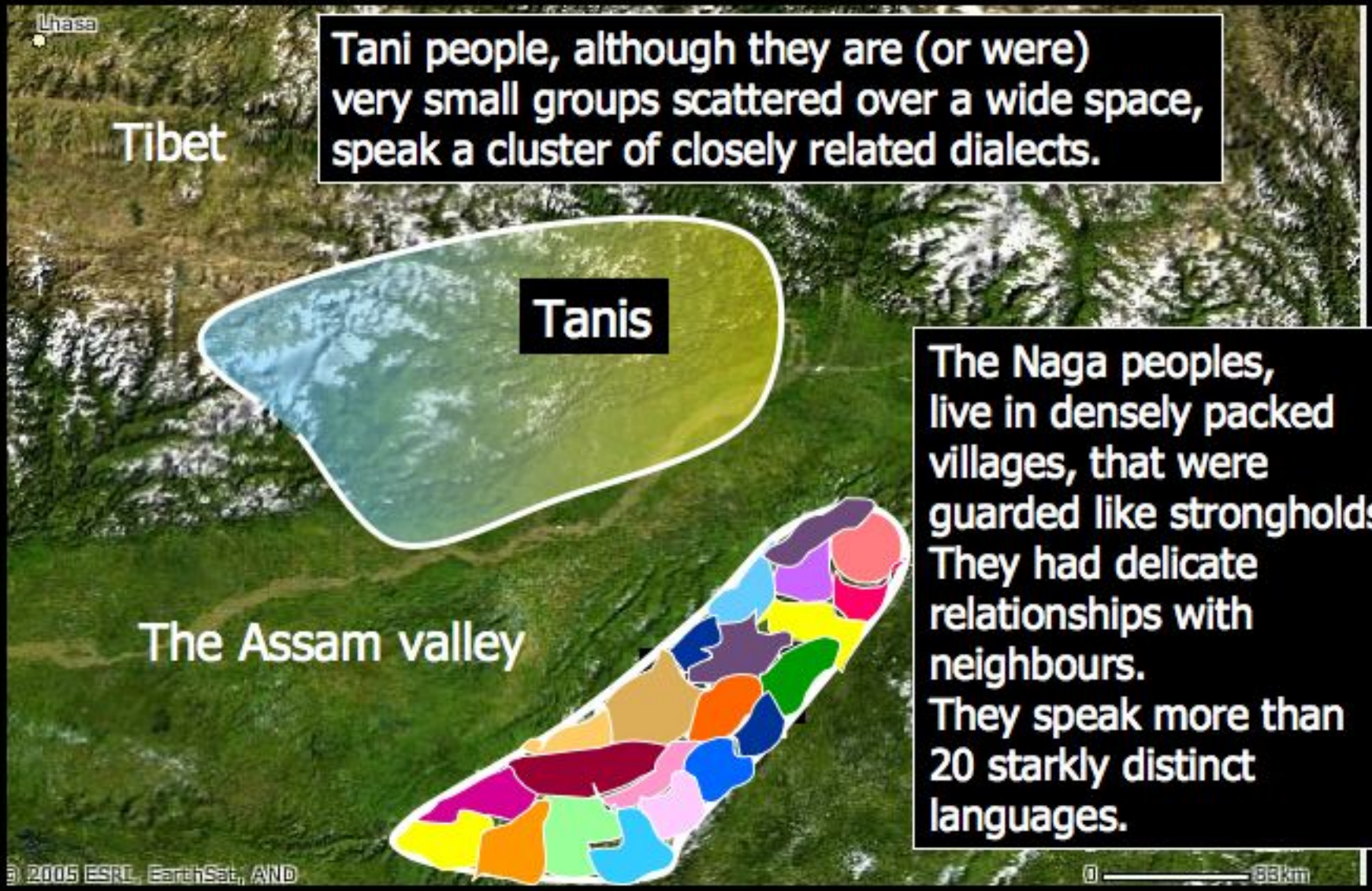
Tanis & Nagas


Lhasa
Tibet
Tani people, although they are (or were) very small groups scattered over a wide space, speak a cluster of closely related dialects.
Tanis
The Assam valley
The Naga peoples, live in densely packed villages, that were guarded like strongholds. They had delicate relationships with neighbours.
They speak more than 20 starkly distinct languages.
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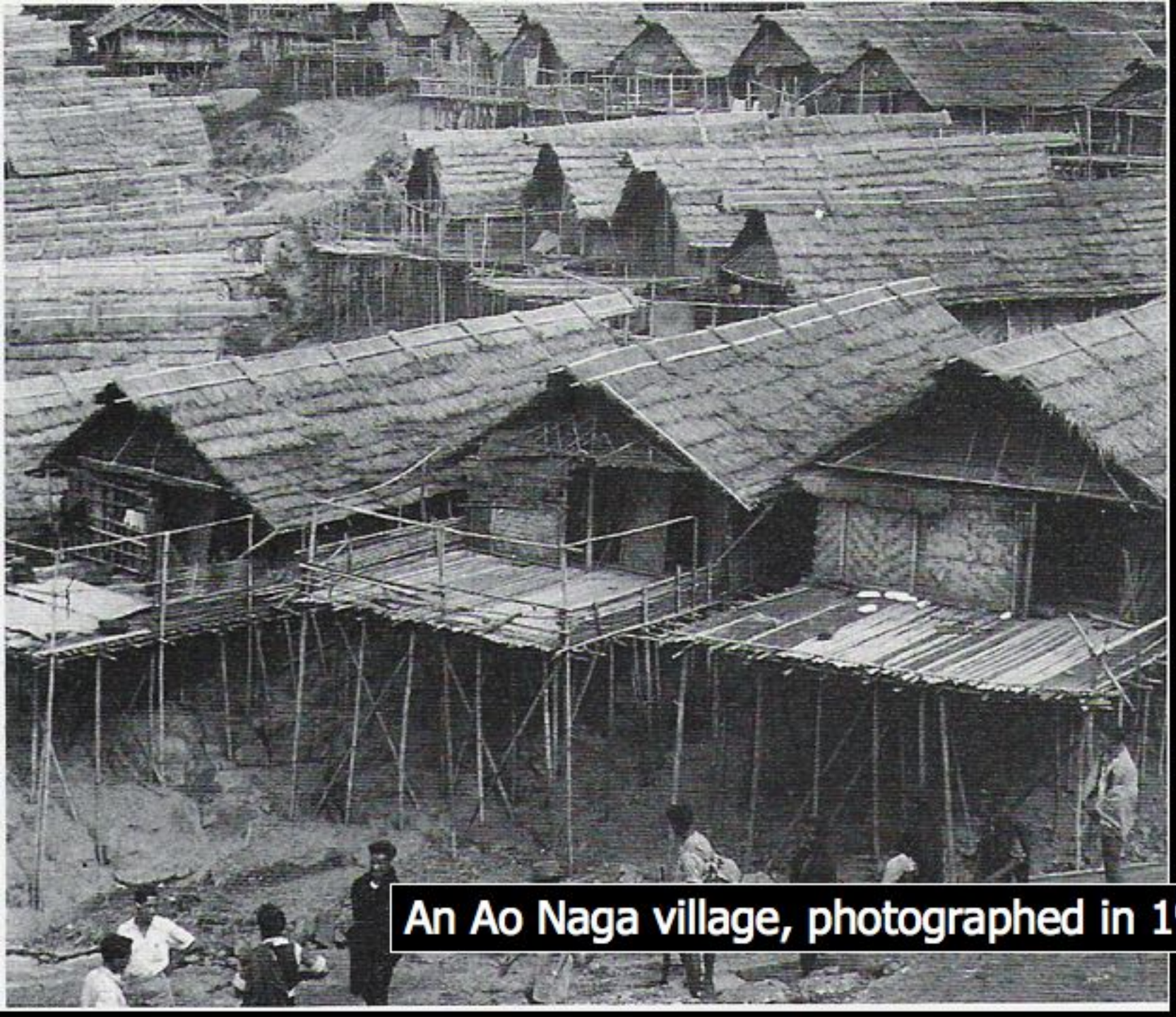
88km

The old gate to an Angami Naga village in the 1930s.



An Ao Naga village, photographed in 1946

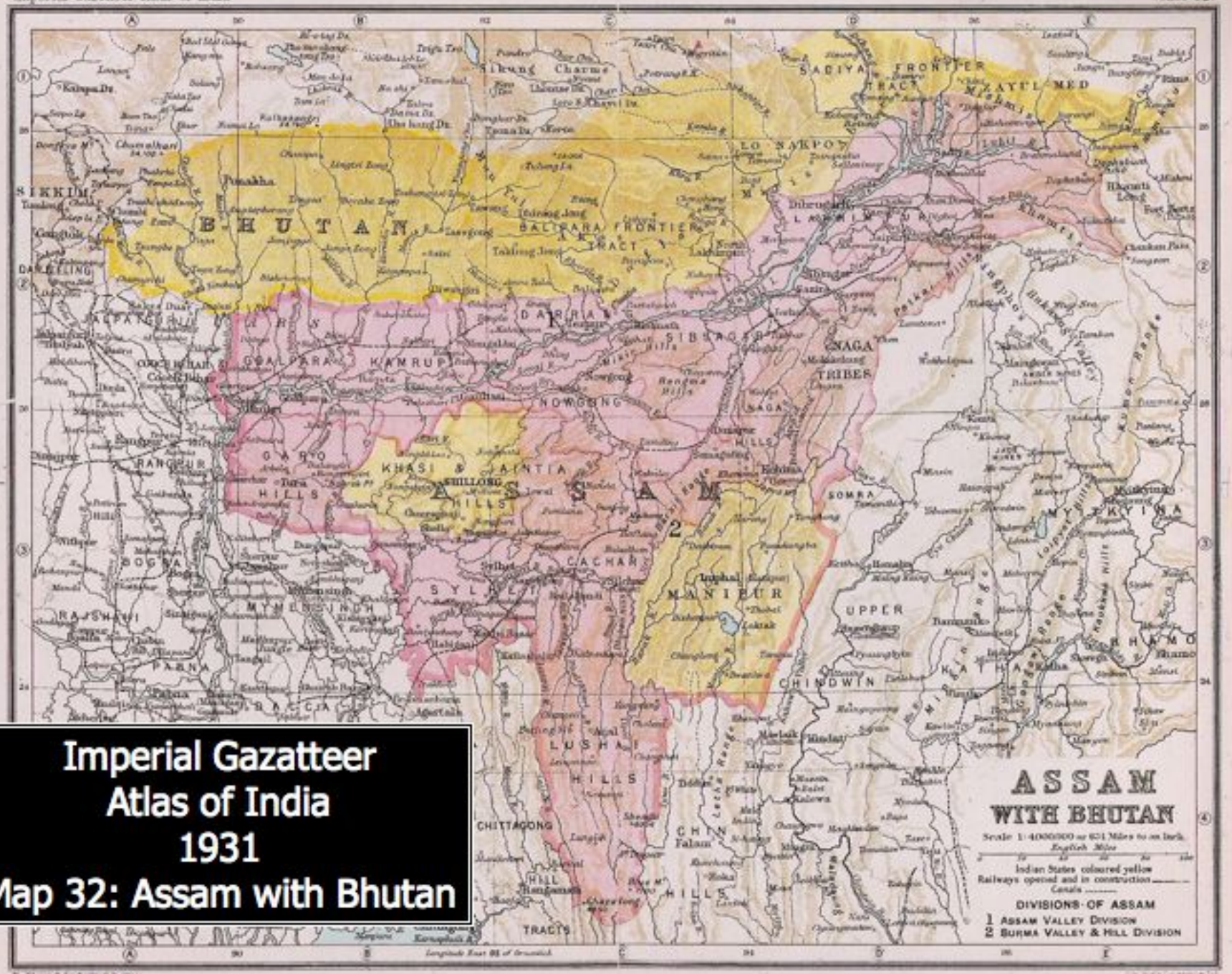
Do you like your neighbours?

Contrastive description

	Tani	Naga
density	sparse	dense
villages	small	big
neighbours	visited	cut down
languages	1 language dialect continuum	25 languages

Census of India: 1931

- The last British *census* in India was 1931.
- Population situation after Independence, as far as Tribals are concerned, is not known in detail, and becomes more and more « modernized ». This is still more obvious with Border Tribes.
- Older data exist (census from 1871), but one must realize that administrative designations of territories have been changing.



Imperial Gazatteer Atlas of India 1931 Map 32: Assam with Bhutan

One has to « cook » the data with care.

	area	tow.	villages						village
Surma valley	24 170	10	15 299						3 636 030
Cachar	3862	2	1607						555 460
Sylhet	5 478	5	11 717						2 679 999
Khasi-Jaintia	2 445	2	954						100 082
Naga hills	4 293	1	481						178 085
Lushai hills	8 092		540						124 404
Assam valley	27 084	18	16						4 718 677
Goalpara	3 965	3	18				82 748	21 442	861 306
Kamrup	? 3 044	3	738				976 746	39 028	937 718
Darrang	2 842	2	978	129 182	2 520	126 662	584 817	11 964	572 853
Nowgong	3 896	2	323	104 185	3 133	101 052	562 581	13 511	549 070
Sibsagar	5 181	4	284	204 036					910 151
Lakhimpur	4 234	4	498	172 229					696 668
Garo Hills	3 152	-	160	39 565					190 911
Sadiya F. T.	3 200	1		10 397					48 975
Balipara F. T.	560	-	38	1 008	-	1 008	5 148		5 148
Manipur State	8 620	1	372	89 151	17 463	71 688	445 606	85 804	359 802
Khasi States	3 700	-	475	38 288	3 380	34 908	180 000	16 692	163 308

These people speak Mon-Khmer languages.
They are the possible « relict » of the earlier Assam Bridge between Mon-Khmer and

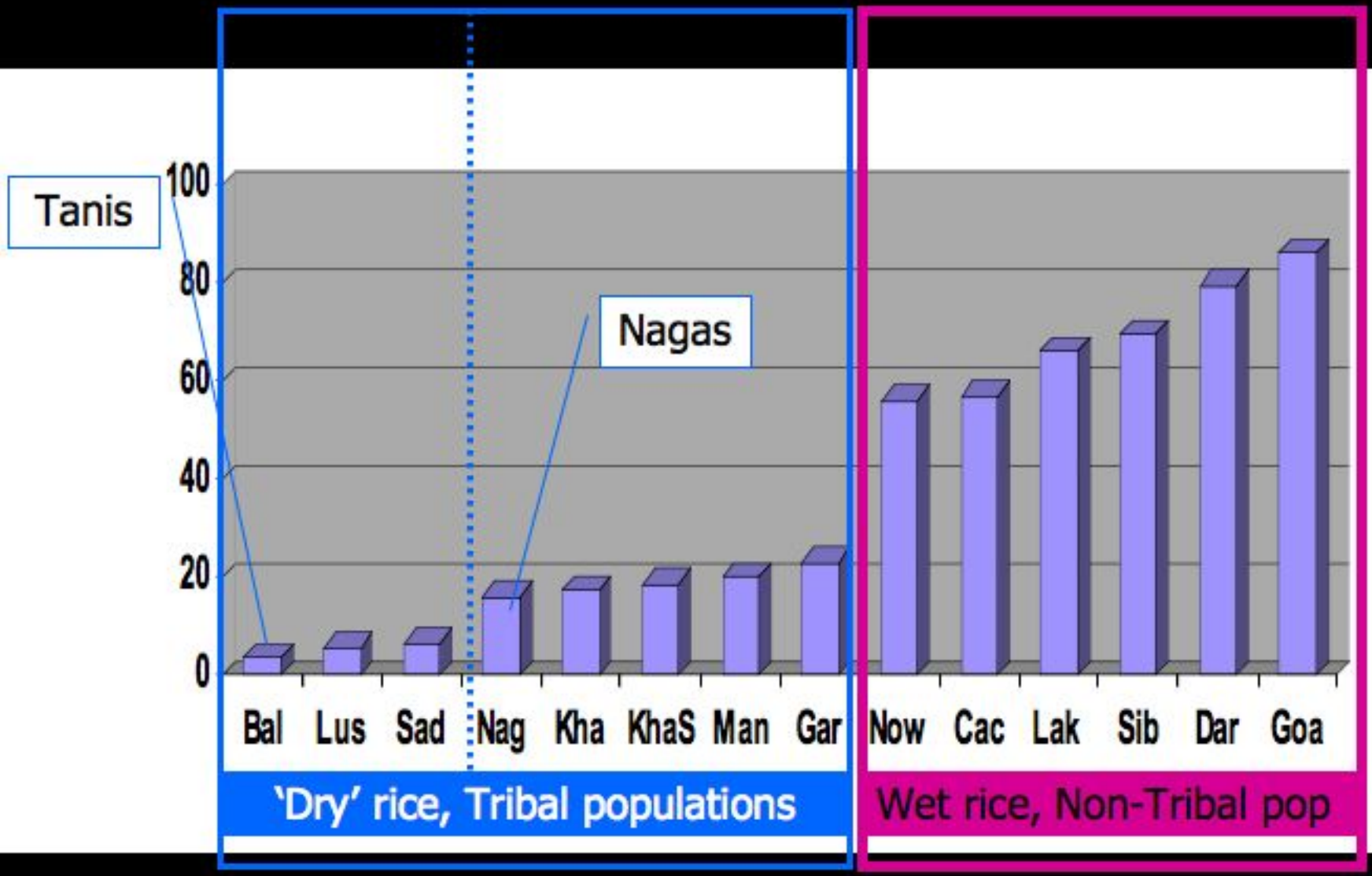
These are 'Naga' speaking people.

Part of the Tani-speaking people.

Density gradation

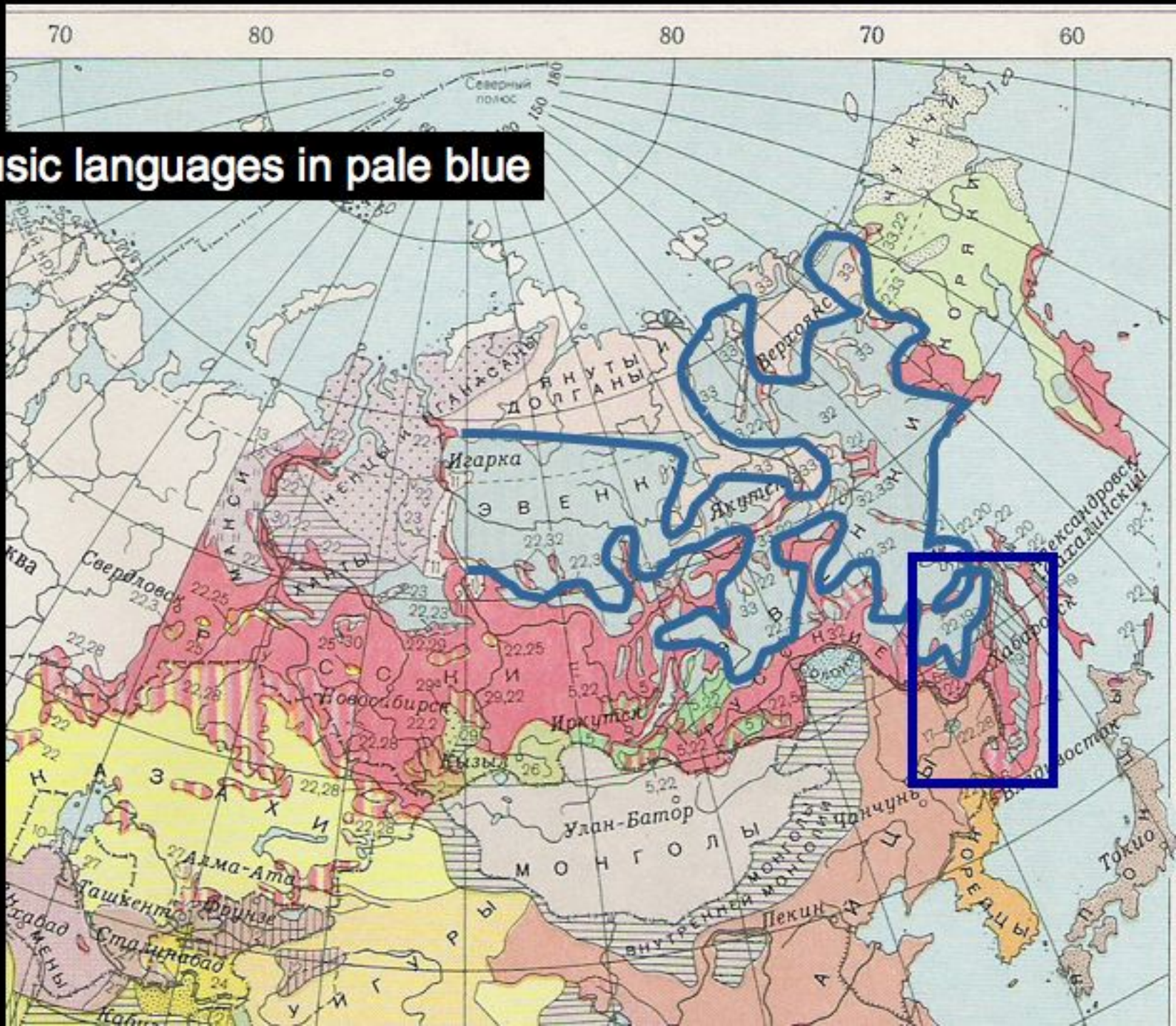
	km²	villages	persons (rural)	pers. /km²	km²/ village	pers. /vill
				a	b	c
Surma valley	62600	15299	3636030	59,2		
Cachar	10003	1607	555 460	57,0	6,2	
Sylhet	14188	11 717	2 679 999	192,0	1,2	228,7
Khasi & Jaintia	6 333	954	100 082	17,4	6,6	104,9
Naga hills	11 119	481	178 085	16,1	23,1	370,2
Lushai hills	20 958	540	124 404	5,9	38,8	230,4
Assam valley	70 148	17 169	4 718 677	69,2		
Goalpara	10269	3 188	861 306	86,0	3,2	270,2
Kamrup	7884	2 738	937 718	123,9	2,9	342,5
Darrang	7361	1 978	572 853	79,4	3,7	289,6
Nowgong	10091	2 323	549 070	55,8	4,3	236,4
Sibsagar	13419	2 284	910 151	69,6	5,9	398,5
Lakhimpur	10966	2 498	696 668	66,1	4,4	278,9
Garo Hills	8164	2 160	190 911	23,4	3,8	88,4
Sadiya F. T.	8288	373	48 975	6,4	22,2	131,3
Balipara F. T.	1450	38	5 148	3,7	38,2	135,5
Manipur State	22326	1 372	359 802	20,0	16,3	262,2
Khasi States	9583	1 475	163 308	18,8	6,5	110,7

A Population density typology in 1931 Assam



Results for this example

- In 1931, the scale of population density corresponds to a double description:
  - different ecological & ressource patterns
  - within the less 'industrial' one, socio-linguistic divergence:
    - the dense populations (Nagas) have a quick differenciating behaviour, languages included.
    - the sparse populations (Tanis) have a slow differenciating behaviour, languages included.
- There is a link between lower density and lower speed, or between higher density and higher speed.


Tungusic languages in pale blue
70
80
80
70
60
Северный полюс
Игарка
Якутск
Верхоянск
Свердловск
Новосибирск
Иркутск
Кызыл
Улан-Батор
Алма-Ата
Ташкент
Фрунзе
Сталинабад
Пекин
Токио
Хабаровск
Александровск-Сахалинский
ЭВЕНКИ
МОНГОЛЫ
ЯКУТЫ
ЧУКЧИ
КОРЯКИ
ЮКАГИРЫ
ДОЛГАНЫ
ЭНЦЫ
НЕНЦЫ
ХАНТЫ
МАНСИ
КОРЕЙЦЫ
НАНАЙЦЫ
ЗАПАДНАЯ СИБИРЬ
ВОСТОЧНАЯ СИБИРЬ
ДАЛЬНИЙ ВОСТОК
ЗАПАДНЫЙ ХАЙ
УЙГУРЫ
ВНУТРЕННЯЯ МОНГОЛИЯ
ЦЗИНЧУНЬ

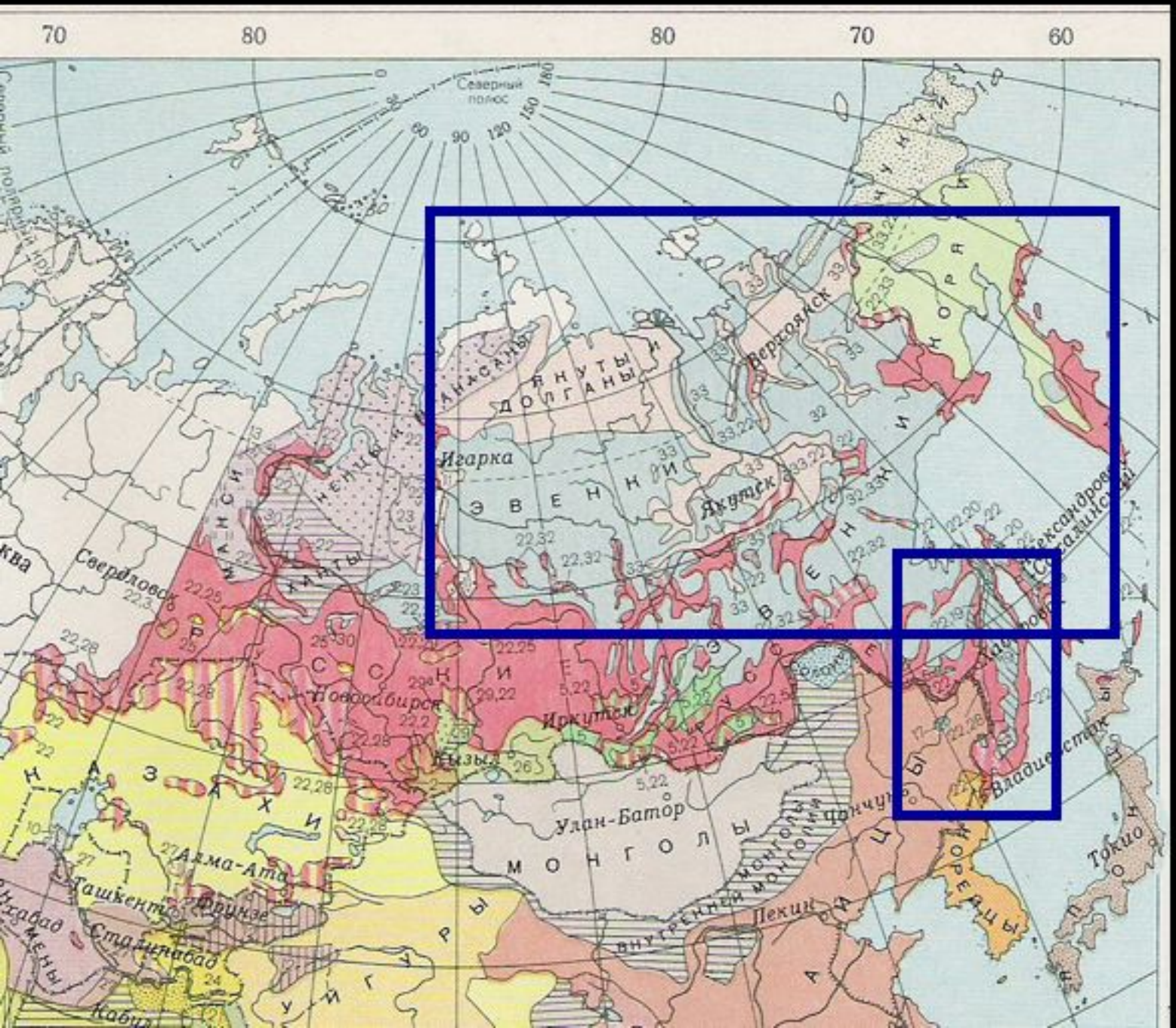
Another example: Tungusic

- Comparing Tungusic languages, Vera Cincius and al. use Evenki as a basis.

- The Evenki-Even dialect continuum is probably more « recent », because it depends on copying horse breeding for its extension.
- This actually means population spreading in the more northern area (provided we discard the likely accretions) may have taken place after the isolation process of Tungusic languages.

Yet, Tundra Tungusic looks « older » than Primorie Tungusic.

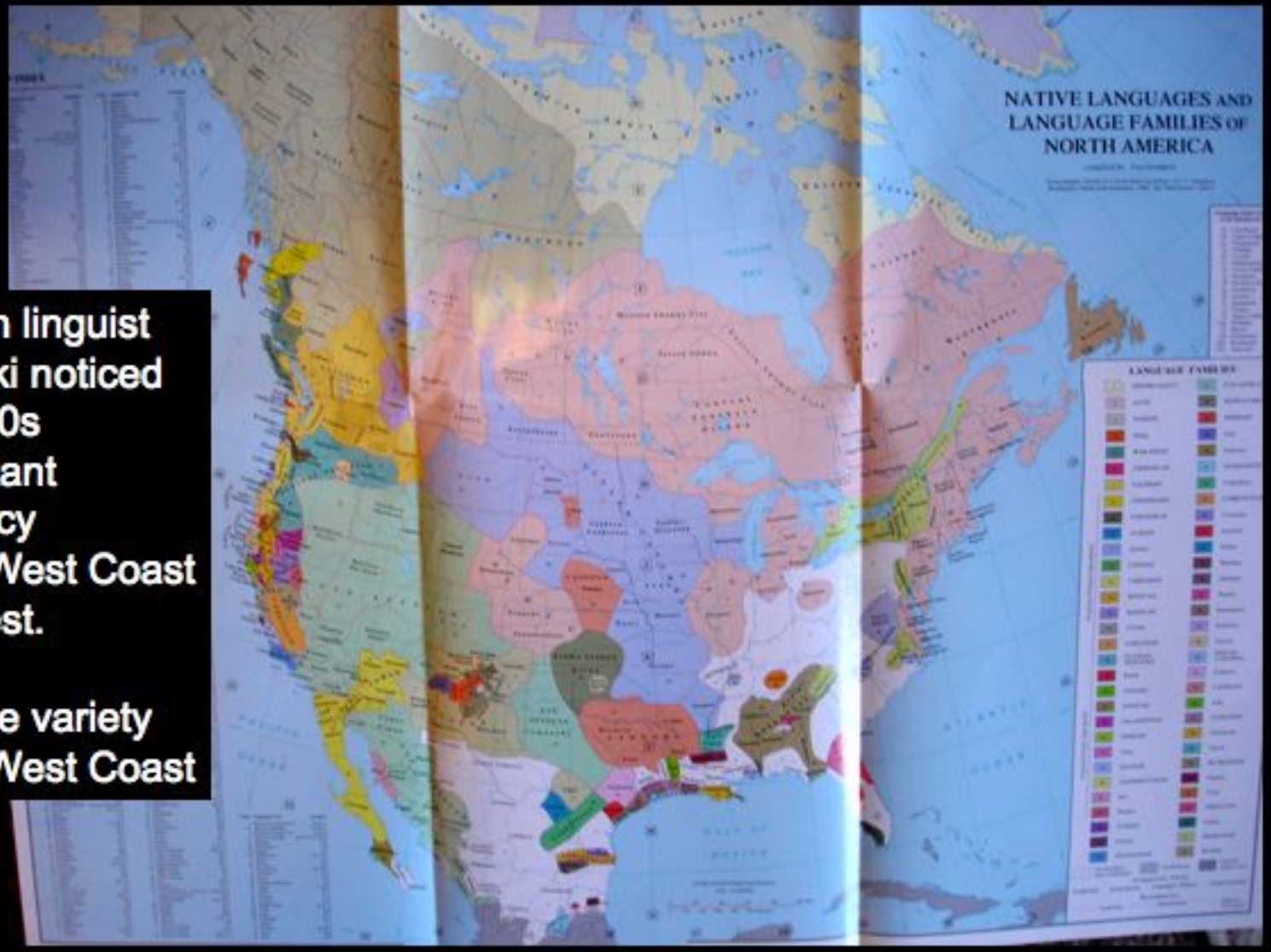
This is another example of differential rate in language change.



Sparser population. Slower rate of change

Denser population. Quicker rate of change

A prospective example: North America



The Polish linguist T. Milewski noticed in the 1950s the important discrepancy between West Coast and the rest.

Most of the variety is on the West Coast

The traditional idea is that
West coast languages are more numerous
and more diverse,
because they have been there
for a longer time.

They would witness the oldest Indian path
to the south.

Actually,
there is no archaeological proof
of a greater antiquity of the West Coast
settlements.

The more diverse languages there
only witness the quicker pas of change.

And this is in many ways a cultural fact,
not a mechanical of time span.

Conclusion

- There are few languages in the Steppes or Prairies.
- Most of them sound older, more preserved, than their ‘cousins’ on the border zone, or in more heavily populated areas.
- The reason is that the rate of exchange is slower. Therefore, innovations are less frequent.
- Therefore the languages changes less quickly.