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2019



Turing Test

Final Round



Instructions

1. The Turing Test Finals will have two questions, with three hours to submit the solutions. The points scored for each problem are mentioned on the question paper itself.
2. Participants are required to submit their responses by answering each problem on a separate sheet, and ensuring that the names of the participants are written on all of the sheets used, including rough sheets.
3. In case of any doubts or clarifications, raise your hand to ask one of the volunteers. Communicating with any participants other than your team members is not allowed.
4. Ensure that each answer is accompanied by a substantive explanation of the linguistic phenomenon that is taking place. Well-explained solutions will be awarded more points as compared to simply giving the answers themselves. Note that we do not require you to explain how you arrived at the answer. For example in English, we require you to explain a rule as: *plurals of some words are made by suffixing -s to the singular form*. We do not need you to tell us that you found the rule from looking at the plural forms of the nouns *apples*, *bananas*, etc. In short, simply tell us your conclusions, and the rules you discovered to help you arrive at the conclusions, not the examples that demonstrate these rules.
5. Use of the Internet is not allowed, and participants are forbidden from using mobile phones, smartwatches or any devices that can be used to access the Internet. Any external materials, such as notes, chits or charts, are also not allowed.
6. We recommend that everyone submit their solutions 5-10 minutes before the event finishes, in order to avoid delays.
7. There is **NO NEGATIVE MARKING**, feel free to guess!

GOOD LUCK!

Problem 1 - Sye and Ura (20 Points)

Sagnik Anupam

Languages are being wiped out at an alarming rate across the world.

That is a sad fact, and a variety of factors contribute to the extinction of a language. A remarkable example is the case of Sye and Ura, two languages spoken on Erromango, an island of 900 sq. km. area which constitutes one of the five inhabited islands in the Tafea province of Vanuatu, an island country in the South Pacific ocean. Severe depopulation took place in these islands in the 19th and 20th centuries, largely as a result of introduced European diseases, at one point dipping to 381 people (from 5000-6000 people) due to a series of epidemics, cyclones and food shortages.

As a consequence, Ura, which was once the language of northern Erromango, reduced its speakers as they intermingled with the larger Sye-speaking population. Today, Sye is spoken by all 1900 inhabitants of Erromango, while Ura is described to have half-a-dozen elderly speakers who speak the language in the 1990s, and is classified as a moribund language.

Given the paucity of speakers, several Sye lexical items have been imported into the Ura language by the handful of speakers who remain. Sye itself is thought to be a mixed language - it seemingly derives from the mingling of speech traditions which were lost as villages on the island could no longer sustain themselves due to severe cyclones and epidemics, and people had to move to central stations.

Other named extinct speech traditions include Sorug, Utaha, Ravat and Novel-Amleg, although it will now never be known if they were distinct languages or dialects of Sye and Ura.

This problem asks you to think of a gloomy future. In a world where Ura may soon become extinct (like its sister-language Ifo, whose last speaker died in 1954), work to make it possible to reconstruct Ura from what little data we available from its remaining speakers. Sye and Ura both evolved from a language termed as Proto-Erromango, and there are several lexical items that are very similar to each other.

Some lexical items in both Sye and Ura have been provided in the following table to help you understand how one can translate between the two languages.

Sye	Ura	English
nrompon	dobon	juice/oil
aruvo	arufa	sing
amplehi	amlesi	sticky
esomsay	esomsak	breathe
emɣu	emɣu	dance
wonte	wode	sea-urchin
poki	poki	sea eel

Assignment 1 (15 points): Fill in the blanks in the following table.

Sye	Ura	English
poŋkevre	1. _____	large snapper
2. _____	purou	hat
ahpi	3. _____	lick
4. _____	nabidi	edible fungus
eveli	5. _____	stop/end
atoy	6. _____	salty
senri	7. _____	unload
8. _____	yobut	navel
nimpyau	9. _____	a wave
nehkil	10. _____	snake
11. _____	nifir	(fruit) bunch
torpehi	12. _____	pour
empahiwoji	13. _____	to send on an errand
ehelwo	14. _____	tasteless/bland
nevi	15. _____	girl

Assignment 2 (5 points):

Describe the rules for translating between the two languages.

Note:

/ŋ/ is the velar nasal, pronounced like the final consonantal sound in "sing".

/ɣ/ is the voiced velar fricative, pronounced like the initial consonant in "ghost" in some English dialects.

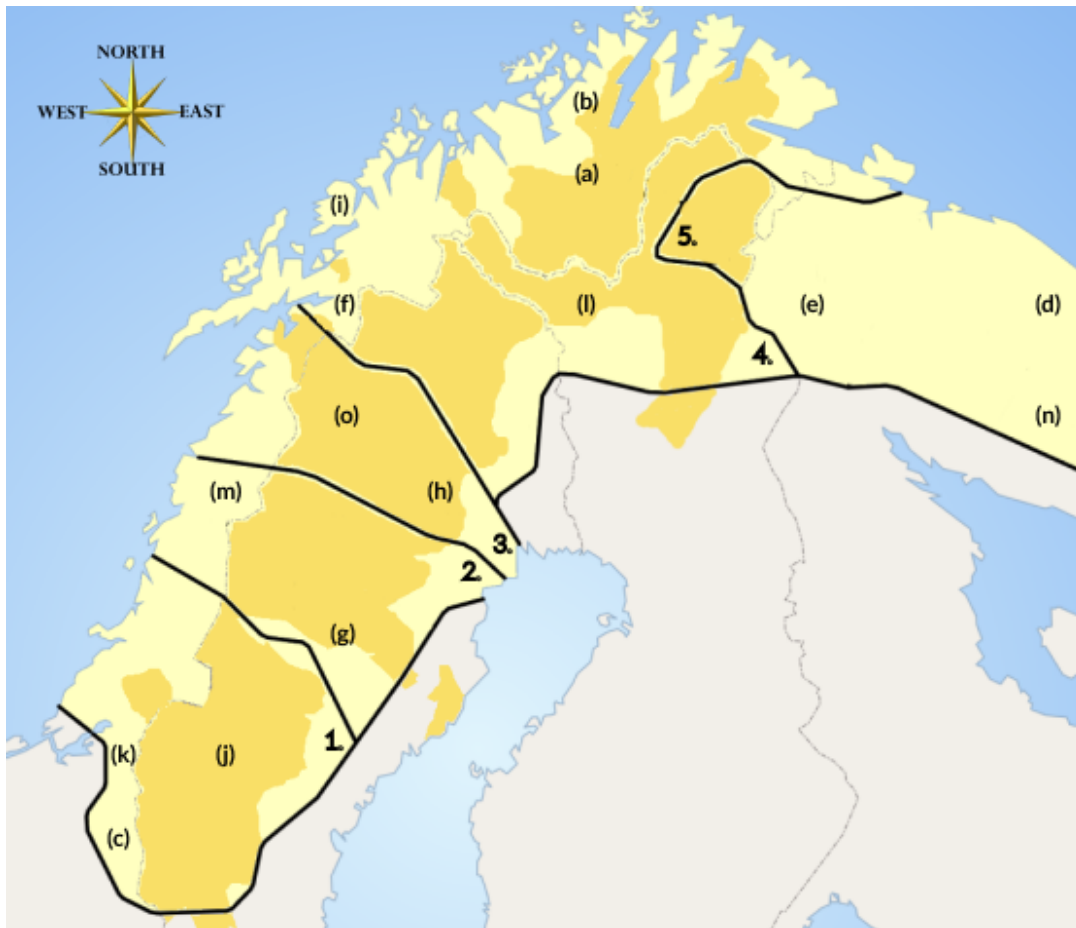
A snapper is a type of fish.

Problem 2 - Sid and Sámi (20 Points)

Sarthak Mangla and Harit Gangwani

Sid is a premium member of SAS airlines, who is offered free trips to Scandinavia. This year, he visited the region of Sámi and was intrigued by the language spoken there. The Sámi trace people in different parts of the region using a unique sense of direction, which varies from dialect to dialect and subregion to subregion. He takes out a map and marks the 15 people he will be meeting there, who speak different dialects of Sami depending on where they live. The region in which each dialect is spoken in the map provided below, and here is the key:

- 1 - South Sámi
- 2 - Ume Sámi
- 3 - Lule Sámi
- 4 - North Sámi
- 5 - Eastern Sámi



He asks the people he meets a very specific question: how many of the people on this map are in a particular direction from where the speaker is standing? They then give him the answer to this question, but they reply in the dialect which they speak. This then confuses Sid, who is trying to understand how the Sami perceive direction. Given below are the responses of the speakers to Sid's question.

Speaker	Direction	Number of people in the direction w.r.t Speaker
(a)	Nuorta	okta
(b)	Lulle	guokte
(c)	Nuorta	akte
(d)	Oarji	koumm
(e)	Nuorta	õhtt
(f)	Nuorta	golbma
(g)	Nuorta	gulbme
(h)	Davvi	akta
(i)	Lulle	golbma
(j)	Nuorta	akte
(k)	Oarji	akte
(l)	Nuorta	guokte
(l)	Nuorta	guokte
(m)	Oarji	akte
(n)	Davvi	noll
(o)	Oarji	niellja

Stumbling across a dictionary in the library, Sid gets to understand the translation between the numbers in the dialects. However, he cannot find an English - Sami dictionary to translate these numbers into Hindu-Arabic numerals.

Northern Sámi	Southern Sámi	Ume Sámi	Lule Sámi	Eastern Sámi
okta	akte	akte	akta	õhtt
golbma	golme	gulbme	gålmmå	koumm
-	-	-	nålla	noll
njeallje	nieljie	nilje	nielja	nellj
guokte	göökte	guökte	guokta	kue'htt

Help Sid figure out the answers to his questions and learn directions in all the Sámi dialects!

Assignment 1 (2 Points): Translate the following numbers into Hindu-Arabic numerals:-

1. nilje
2. göökte
3. koumm
4. akte

Assignment 2 (6 Points): Complete the following table:-

Dialect	Directions (in English)	Directions (in Sami)
Lule	Southwest	1. _____
Ume	South	2. _____
Northern	East	3. _____
Northern	4. _____	Lulle
Eastern	5. _____	Davvi
Southern	6. _____	Oarji

Assignment 3 (7 Points): Complete the following table:-

1st Person	3rd Person	Direction
(a)	(l)	1. _____
(b)	(a)	2. _____
(l)	(d)	3. _____
(i)	(g)	4. _____
(d)	(f)	5. _____
(j)	(m)	6. _____
(h)	(k)	7. _____

Note: The direction in the above table is the keyword of the 3rd Person's placement w.r.t the 1st Person, in the 1st Person's regional dialect.

Assignment 4 (5 Points): Explain your answers to the above assignments.

END OF PAPER