

Nineteenth International Linguistics Olympiad

Castletown (Isle of Man), July 25–29, 2022

Individual Contest Problems

Rules for writing out the solutions

Do not copy the problems. Write down your solution to each problem on a separate sheet or sheets. On each sheet indicate the number of the problem and your surname. If you do not do this, your work may be mislaid or misattributed.

Unless stated differently, you should describe any patterns or rules that you identified in the data. Otherwise your solution will not be awarded full marks.

Problem 1 (20 points). Here are some forms of the Ubykh verb ‘to give’ and their English translations:

1. **wəš'tʷən** — *we give you_{sg} to him*
2. **sawtʷən** — *you_{sg} give me to them*
3. **awəstʷən** — *I give them to you_{sg}*
4. **wəsənətʷən** — *they give you_{sg} to me*
5. **šʷəstʷən** — *I give you_{pl} to him*
6. **šʷantʷən** — *he gives us to them*
7. **awəš'tʷən** — *we give him to you_{sg}*
8. **səšʷəntʷən** — *he gives me to you_{pl}*
9. **ašʷəstʷən** — *I give him to you_{pl}*

(a) The last of the nine forms above can actually be translated into English in two ways. What is its other translation?

(b) Translate into English:

10. **ašʷəntʷən**
11. **səšʷtʷən**
12. **šʷəwənətʷən**

(c) Translate into Ubykh:

13. *they give you_{pl} to me*
14. *you_{pl} give him to me*
15. *you_{sg} give us to him*
16. *we give you_{sg} to them*
17. *he gives them to us*

△ Ubykh belongs to the Abkhaz–Adyghe family. Until 1864, several tens of thousands of people spoke it in the area of the present-day city of Sochi, Russia. Tevfik Esenç, who was considered the last fully proficient native speaker of Ubykh, died in Turkey in 1992.

ə is a vowel; šʷ, šʷ, tʷ are consonants.

—Peter Arkadiev

Problem 2 (20 points). Here are some words in Alabama and their English translations in arbitrary order:

1. achánnàaka	8. atanayli	15. kawaŋŋi	22. ʎómbafka
2. achanni	9. atánnayka	16. ʎiilka	23. ʎombi
3. ahamatli	10. atanni	17. ʎipka	24. ʎòomka
4. ahámmatka	11. bàalka	18. ʎilaffi	25. sibapli
5. apòotka	12. balàali	19. ʎipli	26. simbi
6. apotòoli	13. balli	20. ʎíppiika	
7. apóttòoka	14. incháffaaka	21. ʎobaffi	

- | | |
|---|--|
| A. <i>he breaks it in two</i> | N. <i>he leans them against something</i> |
| B. <i>he lays them down</i> | O. <i>he makes holes</i> |
| C. <i>he wraps them</i> | P. <i>he makes a hole</i> |
| D. <i>he puts it next to something</i> | Q. <i>it is turned upside down</i> |
| E. <i>he turns them upside down</i> | R. <i>he scatters it, he scatters them</i> |
| F. <i>it is torn in several places, they are torn</i> | S. <i>they are next to something</i> |
| G. <i>it leans against something</i> | T. <i>he tears it in two</i> |
| H. <i>they are turned upside down</i> | U. <i>he has one</i> |
| I. <i>it is next to something</i> | V. <i>he lays it down</i> |
| J. <i>it has holes, they have holes</i> | W. <i>it has a hole</i> |
| K. <i>it is wrapped</i> | X. <i>he peels the bark off</i> |
| L. <i>they lie, are lying down</i> | Y. <i>he peels a strip off</i> |
| M. <i>it is scattered, they are scattered</i> | Z. <i>he wraps it</i> |

(a) Determine the correct correspondences.

(b) Translate into English:

- 27. **bállàaka**
- 28. **inchafàali**
- 29. **kawwi**

One of these has two possible translations.
Give them both.

(c) Translate into Alabama:

- 30. *he tears it in several places*
- 31. *it is torn in two*
- 32. *he turns it upside down*
- 33. *he leans it against something*

(d) One of the Alabama words from the answer to (c) can be translated into English in other ways as well. Which one, and how?

△ Alabama belongs to the Muskogean family. It is spoken by approx. 360 people on the Alabama–Coushatta Reservation, Texas, USA.

ch = *ch* in *church*. **ʎ** is an unvoiced *l*. A doubled letter denotes length. The mark ´ indicates high tone. The mark ` indicates falling tone.

—Ivan Derzhanski

Problem 3 (20 points). Here are some sentences in N|uuki and their English translations:

- | | |
|--|--|
| 1. †oo ɲ\|i ɲ | — Does the man see me? |
| 2. ɲ\|a !aukea ɲ ɲ\|ɲ | — Are you _{sg} afraid of me? |
| 3. cuu xae a †ʔii ɲ\|\|a | — Whom do you _{sg} think about? |
| 4. u \|\|āu ke \|\|u \|qhōʔo | — Your _{pl} brother does not dance. |
| 5. janasa xae †qheeke | — Is it the thief who sings? |
| 6. ɲ\|ɲ si s̄isen ɲ \|haeke | — Will I work tomorrow? |
| 7. †hun ke !aukea ɲ ɲ\|i | — The dog is afraid of us. |
| 8. na \|\|u †ʔii ɲ ɲ\|a xaŋki | — I do not think about your _{sg} mother. |
| 9. ɲ\|i aŋki si \|qhōʔo ɲ ɲ\|ari | — Will our father dance in Upington? |
| 10. kija xae †oo s̄isen ɲ\|\|a | — Where does the man work? |
| 11. ɲ\|a ɲ\|i a ɲ\|\|ɲ | — Do you _{sg} see your _{sg} house? |
| 12. ɲ\|ɲ xae a !ʔai | — Is it me whom you _{sg} call? |
| 13. u kee \|eeki †ʔii ɲ\|\|a | — It is you _{pl} whom the woman thinks about. |
| 14. a xaŋki ke kacuuʔi ɲ ɲ\|a ts'aaʔa ɲ | — Your _{sg} mother asks if you _{sg} like me. |
| 15. kama ja xae ɲ si ɲ\|i u ɲ\|\|a | — When will I see you _{pl} ? |
| 16. ɲ !uu ke kacuuʔi ɲ ɲ\|ɲ si †qheeke ɲ !haeke | — My grandfather asks if I will sing tomorrow. |

(a) Translate into English:

17. na kacuuʔi ɲ ɲ|u xae ɲ !uu !ʔai
18. na ||u si s̄isen ɲ ɲ|ari
19. |eeki ke !aukea ɲ ɲ|ɲ †hun
20. ɲ kee si !ʔai a
21. cuu xae u ɲ|i
22. cuu xae ts'aaʔa ɲ

(b) Translate into N|uuki:

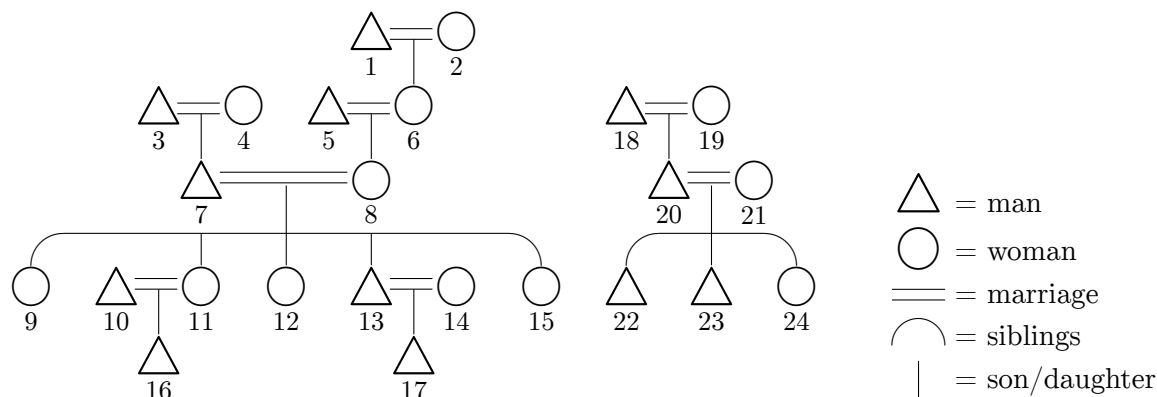
23. Our mother will not call your_{sg} brother.
24. It is you_{sg} whom my dog is afraid of.
25. Where will you_{pl} sing?
26. I ask if it is our grandfather whom you_{sg} think about.
27. Who will dance tomorrow?
28. Do you_{pl} see us?

△ N|uuki (or N||ng) belongs to the Tuu family. It is spoken in and around Upington (**ɲ|ari**) in the Northern Cape province of South Africa. As of 2021, it has only one remaining native speaker.

ā, īi and ōʔo are vowels. j, ɲ, ts' and ʔ are consonants. |, !, ||, † and the combinations ɲ|, ɲ!, ɲ||, ɲ|h, !h, ||h, †h, |qh, †qh, !ʔ and †ʔ denote click consonants (in particular, ɲ| and ɲ|| are nasal clicks).

—Eimear McKnight, Samuel Ahmed

Problem 4 (20 points). Here are the family trees of two families of Arabana speakers. In these trees, siblings are arranged from oldest to youngest going from left to right:



Now here are utterances from 22 of these people describing their relationships to some of their relatives:

- | | | |
|--|--|--|
| <p>A: “D anthunha wardu.
F anthunha(i).”</p> <p>B: “C anthunha nhuthi.
D anthunha apityi.
E anthunha nhuthi.
G anthunha lhuka.”</p> <p>C: “B anthunha kupaka.
D anthunha apityi.
E anthunha kupaka.
G anthunha lhuka.”</p> <p>D: “A anthunha lhuka.
B anthunha piyaka.
E anthunha(ii).
G anthunha nhupa.”</p> <p>E: “B anthunha kupaka.
C anthunha nhuthi.
G anthunha lhuka.”</p> <p>F: “A anthunha nhupa.”</p> <p>G: “C anthunha wardu.
E anthunha wardu.”</p> | <p>H: “N anthunha piyaka.
O anthunha(iii).
W anthunha(iv).”</p> <p>I: “V anthunha piyaka.”</p> <p>J: “H anthunha apityi.
L anthunha(v).”</p> <p>K: “P anthunha(vi).”</p> <p>L: “K anthunha piyaka.
U anthunha kaku.
V anthunha kadnhini.
W anthunha kadnhini.”</p> <p>M: “K anthunha wardu.
L anthunha nhupa.”</p> <p>O: “H anthunha wardu.
T anthunha amanyi.
W anthunha nhupa.”</p> <p>P: “H anthunha nhupa.
I anthunha(vii).
V anthunha lhuka.”</p> <p>R: “H anthunha thanti.”</p> | <p>S: “J anthunha thanti.
L anthunha thanti.
V anthunha nhupa.”</p> <p>T: “J anthunha kaku.
L anthunha nhuthi.
N anthunha kaku.
S anthunha thanti.”</p> <p>U: “J anthunha kupaka.
R anthunha(viii).
V anthunha kadnhini.”</p> <p>V: “N anthunha kadnhini.
P anthunha wardu.
Q anthunha(ix).
T anthunha kadnhini.”</p> <p>W: “N anthunha kadnhini.”</p> <p>X: “U anthunha nhupa.”</p> |
|--|--|--|

(a) Match the family members **A–X** with their positions (1–24) on the family trees.

(b) Fill in the blanks (i–ix).

△ Arabana belongs to the Pama–Nyungan family. It is spoken by approx. 15 people in the state of South Australia.

In this problem, each person is referred to with a single letter for convenience, but examples of Arabana names include **Wanga-mirri** ‘many mornings’, **Palku-nguyu-thangkayiwanha** ‘one bank of cloud sitting down temporarily’ and **Kutha-kiRanangkarda** ‘water ever flowing’.

dnh, lh, ng, nh, ny, R, rd, rr, th, ty, w and y are consonants.

—Tom McCoy

Problem 5 (20 points). Proto-Chamic is the theorized common ancestor of all the languages in the Chamic group within the Austronesian family. It was reconstructed by linguists by comparing its many present-day descendants, among which are Phan Rang Cham and Tsat.

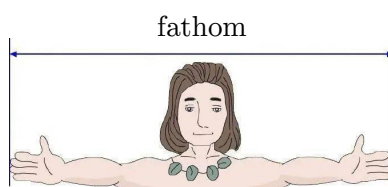
Here are some words in Proto-Chamic, Phan Rang Cham and Tsat, and their meanings:

Proto-Chamic	Phan Rang Cham	Tsat	meaning
*ʔika:n	ikan	ka:n ³³	<i>fish</i>
*dikiʔ	takiʔ	kiʔ ⁴²	<i>few</i>
*dilah	talàh	la ⁵⁵	<i>tongue</i>
*jala:n	calàn	la:n ¹¹	<i>road</i>
*lima	limi	ma ³³	<i>5</i>
*lanah	linih	na ⁵⁵	<i>pus</i>
*dua lapan	tàlipan	pa:nʔ ⁴²	<i>8</i>
*laba:t	lipàʔ	pha:ʔ ⁴²	<i>to walk</i>
*bara	pirà	phia ¹¹	<i>shoulder</i>
*bahrow	piròw	phiə ¹¹	<i>new</i>
*bulow	pilòw	phiə ¹¹	<i>body hair</i>
*paley	paley	piai ³³	<i>village</i>
*masam	mitham	sa:nʔ ⁴²	<i>vinegar</i>
*basah	pathah	sa ⁵⁵	<i>wet</i>
*bəsey	pathey	sai ¹¹	<i>iron</i>
*mata	mita	ta ³³	<i>eye</i>
*rata:k	rataʔ	ta:ʔ ²⁴	<i>beans</i>
*hatay	hatay	ta:iʔ ⁴²	<i>liver</i>
*paday	patày	tha:iʔ ⁴²	<i>paddy rice</i>
*padam	patàm	tha:nʔ ⁴²	<i>to extinguish</i>
*ʔiduŋ	itùŋ	thuŋ ¹¹	<i>nose</i>
*batuk	patuʔ	tuʔ ⁴²	<i>to cough</i>
*maray	miray	zaiʔ ⁴²	<i>to come</i>
*ʔurat	uraʔ	zaʔ ²⁴	<i>tendon</i>
*rək	rəʔ	zəʔ ²⁴	<i>grass</i>
*bala	pilà	[see (a)]	<i>widowed</i>

- (a) No descendant of the Proto-Chamic word ***bala** can be found in the present-day Tsat language. However, what would it have become if it had survived?

(b) Fill in the blanks (1–18). The shaded cells do not need to be filled.

Proto-Chamic	Phan Rang Cham	Tsat	meaning
*kulit	kaliʔ	.....(1)	skin
*hitam	hatam	.....(2)	black
*bubah	papàh	.....(3)	mouth
*ʔikat	.....(4)	.....(5)	to tie
*dəpa	.....(6)	.....(7)	fathom
*matay	.....(8)	.....(9)	to die
*dalam	.....(10)	.....(11)	inside
*labuh	.....(12)	.....(13)	to fall down
*bula:n	.....(14)	.....(15)	moon
	pala	.....(16)	to plant
	tapùh	.....(17)	to ransom
	tatà	.....(18)	chest



△ Phan Rang Cham (or Eastern Cham) is spoken by approx. 73,000 people in south-central Vietnam. Tsat is spoken by approx. 4,500 people in the city of Sanya, Hainan Province, China.

All words in Proto-Chamic are marked with an asterisk (*), indicating that the word is reconstructed and not attested.

ph = aspirated *p*; **th** = aspirated *t*. **c** ≈ *ch* in *church*. **j** ≈ *j* in *judge*. **ñ** ≈ *ny* in *canyon*. **ng** (Phan Rang Cham) = **ŋ** (Tsat) = *ng* in *hang*. **y** = *y* in *you*. **ʔ** is a consonant (known as the glottal stop). **i** = *oo* in *goose* but with the lips unrounded. **ə** = *a* in *comma*.

The mark : indicates that the vowel is long. The mark ` indicates low tone (Phan Rang Cham). The marks ⁵⁵, ⁴², ³³, ²⁴ and ¹¹ indicate high, falling, middle, rising, and low tone, respectively (Tsat).

Knowledge of any Austronesian language not belonging to the Chamic group is not relevant for solving this problem.

—Tung-Le Pan

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Good luck!