

en(B)

Nineteenth International Linguistics Olympiad

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

Individual Contest Solutions

Problem 1. Sb — $\boxed{\text{Ob}_{\text{dir}}}$ \rightarrow Ob_{obl} :

	Ob _{dir}	Ob _{obl}	Sb
1st person sg		<i>s</i> -	
1st person pl		<i>š</i> '-	
2nd person sg		<i>w</i> -	
2nd person pl		<i>ŵ</i> -	
3rd person sg	<i>a</i> -	\emptyset -	<i>n</i> -
3rd person pl	<i>a</i> -		<i>na</i> -

$$+ \mathbf{t}^w + \left\{ \begin{array}{ll} \left[\begin{array}{l} \text{Ob}_{\text{dir}} = \text{pl} \\ 2\text{nd person pl} \in \{\text{Ob}_{\text{dir}}, \text{Ob}_{\text{obl}}, \text{Sb}\} \end{array} \right] : & \alpha \\ \text{otherwise} & \sigma \end{array} \right\} + \mathbf{n}$$

$C_1 C_2 \rightarrow C_1 \sigma C_2$ (C_1 and C_2 are consonants)

- (a) *aŵəst^wan* — *I give them to you_{pl}*.
- (b)
 1. *aš'ənt^wən* — *he gives him to us*
 2. *səš^wt^wan* — *you_{pl} give me to him*
 3. *š'əwənat^wan* — *they give us to you_{sg}*
- (c)
 4. *they give you_{pl} to me* — *š^wəsənat^wan*
 5. *you_{pl} give him to me* — *asəš^wt^wan*
 6. *you_{sg} give us to him* — *š'əwt^wan*
 7. *we give you_{sg} to them* — *waš't^wən*
 8. *he gives them to us* — *aš'ənt^wan*

Problem 2.

-

	1	many
state	xéxx<ex èe>-ka	xèex-ka
action	xex<ex èe>-li	xex-li

- $1 \rightarrow C | C _ (C \in \{b, f, \dot{f}, n\})$
- $b \rightarrow m | _ C$ (C denotes any consonant)

- (a) 1. **achánnàaka** — G. *it leans against something*
 2. **achanni** — N. *he leans them against something*
 3. **ahamatli** — R. *he scatters it, he scatters them*
 4. **ahámmatka** — M. *it is scattered, they are scattered*
 5. **apòotka** — S. *they are next to something*
 6. **apotòoli** — D. *he puts it next to something*
 7. **apóttòoka** — I. *it is next to something*
 8. **atanayli** — Z. *he wraps it*
 9. **atánnayka** — K. *it is wrapped*
 10. **atanni** — C. *he wraps them*
 11. **bàalka** — L. *they lie, are lying down*
 12. **balàali** — V. *he lays it down*
 13. **balli** — B. *he lays them down*
 14. **incháffäaka** — U. *he has one*
 15. **kawa[¶]hi** — A. *he breaks it in two*
 16. **hilka** — F. *it is torn in several places, they are torn*
 17. **hipka** — H. *they are turned upside down*
 18. **hilaffi** — T. *he tears it in two*
 19. **ipli** — E. *he turns them upside down*
 20. **íppiika** — Q. *it is turned upside down*
 21. **tobaffi** — P. *he makes a hole*
 22. **tómbafka** — W. *it has a hole*
 23. **tombi** — O. *he makes holes*
 24. **tòomka** — J. *it has holes, they have holes*
 25. **sibapli** — Y. *he peels a strip off*
 26. **simbi** — X. *he peels the bark off*
- (b) 27. **bállàaka** — *he/it lies, is lying down*
 28. **inchafaali** — *he gets one*
 29. **kawwi** — *he breaks it in several places, he breaks them*
- (c) 30. *he tears it in several places* — **hilli**
 31. *it is torn in two* — **hillafka**
 32. *he turns it upside down* — **ípiili**
 33. *he leans it against something* — **achanàali**
- (d) **hilli** — *he tears them.*

Problem 3.

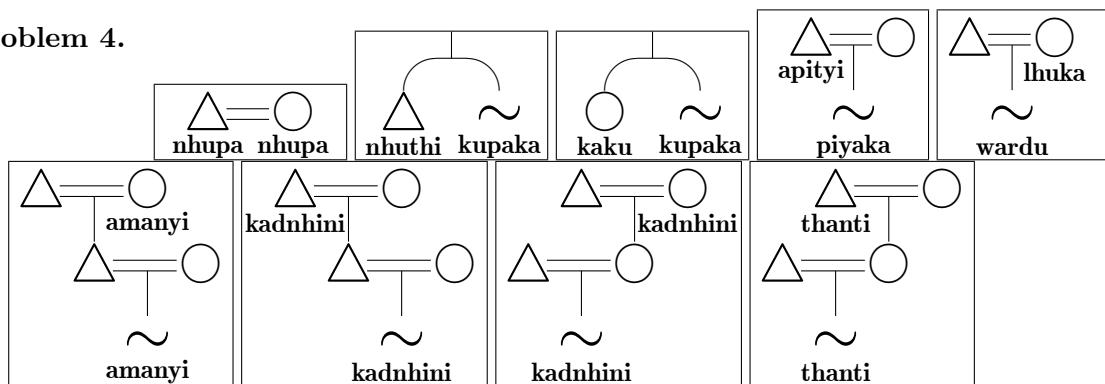
- Word order:

$-\boxed{\begin{array}{c} S \quad L_0 \\ \hline F(S) \quad \\ F(O) \quad \\ F(O') \end{array}}$	$\left\{ \begin{array}{c} L_f \quad \\ \quad S \\ S \end{array} \right\}$	$(N) \quad (T) \quad V$	$\left\{ \begin{array}{c} (O) \quad (\underline{\eta} \quad O') \\ (O) \quad (\underline{\eta} \quad O') \\ \quad \quad (\underline{\eta} \quad O') \\ (O) \quad \underline{\eta} \parallel a \end{array} \right\}$
*			
L_0	L_f		
ke	kee		declarative main clause
\emptyset	xae		interrogative sentence; subordinate clause
* $S = \text{subject}; V = \text{verb}; O = \text{object}; F = \text{focus}$			
* $N = \parallel u$ (negation); $T = si$ (future)			
— S ke kacuu?i $\underline{\eta}$ X S asks if X.			
— possessor	possessed		

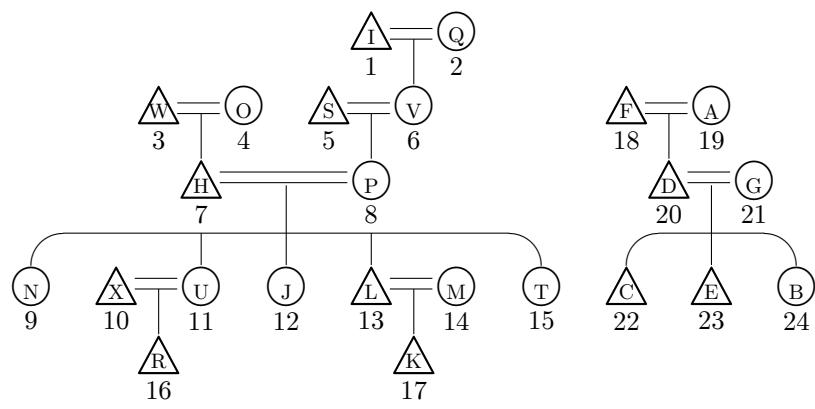
			at the beginning of a question; after the preposition $\underline{\eta}$
1st person sg	$\underline{\eta}$*	$\underline{\eta} \underline{\eta}$	* $\underline{\eta} + ke \rightarrow na$
2nd person sg	a	g a	
1st person pl	i	g i	
2nd person pl	u	g u	

- (a) 17. **na kacuu?i $\underline{\eta}$ g|u xae $\underline{\eta}$!uu !?ai** — I ask if it is you_{pl} whom my grandfather calls.
 18. **na $\parallel u$ si sii sen $\underline{\eta}$ g!ari** — I will not work in Upington.
 19. **|eeki ke !laukea $\underline{\eta}$ $\underline{\eta}|g$!thun** — The woman is afraid of my dog.
 20. **$\underline{\eta}$ kee si !?ai a** — It is I who will call you_{sg} .
 21. **cuu xae u $\underline{\eta}|ii$** — Whom do you_{pl} see?
 22. **cuu xae ts'aa?a $\underline{\eta}$** — Who likes me?
- (b) 23. Our mother will not call you_{sg} brother. — **i xae ki ke $\parallel u$ si !?ai a $\parallel a$**
 24. It is you_{sg} whom my dog is afraid of. — **a kee $\underline{\eta}$!thun !laukea $\underline{\eta}|a$**
 25. Where will you_{pl} sing? — **kija xae u si $\parallel q$ heeke $\underline{\eta}|a$**
 26. I ask if it is our grandfather whom you_{sg} think about. — **na kacuu?i $\underline{\eta}$ g|i !uu xae a $\parallel ?ii$ $\underline{\eta}|a$**
 27. Who will dance tomorrow? — **cuu xae si $\parallel q$ hōfō $\underline{\eta}$!haeke**
 28. Do you_{pl} see us? — **g|u $\underline{\eta}|ii$ i**

Problem 4.



(a)



- (b)
- (i) nhupa
 - (ii) piyaka
 - (iii) lhuka
 - (iv) apityi
 - (v) kupaka
 - (vi) amanyi
 - (vii) thanti
 - (viii) wardu
 - (ix) lhuka

Problem 5.

Phan Rang Cham:

(...)	D	(V L)	V	(C)
			V	

- both syllables
 - $\{*\mathbf{b}, *\mathbf{d}, *\mathbf{g}, *\mathbf{j}\} > \{\mathbf{p}, \mathbf{t}, \mathbf{k}, \mathbf{c}\}$
 - NV > Ni
 - Vi > V
- penultimate syllable
 - $*\mathbf{?V} > V$
 - $*\mathbf{lV} > \mathbf{li}$
 - $*\mathbf{bV(h)L} > \mathbf{piL}$
 - otherwise CV(V) > Ca
 - -h > \emptyset
- final syllable
 - $*\mathbf{s} > \mathbf{th}$
 - $\{*\mathbf{p}, *\mathbf{t}, *\mathbf{k}\} > ?$

V is a vowel. C is a consonant. D is a voiced consonant (**b**, **d**, **j**). T is a voiceless consonant (**k**, **t**, **?T**). N is a nasal consonant (**m**, **n**, **ŋ**). L ∈ {l, r}.

(a) *phia¹¹.

(b)

Proto-Chamic	Phan Rang Cham	Tsat	meaning
*kulit	kali?	(1) li? ²⁴	skin
*hitam	hatam	(2) ta:n? ⁴²	black
*bubah	papàh	(3) pha ⁵⁵	mouth
*?ikat	(4) ika?	(5) ka? ²⁴	to tie
*dəpa	(6) tapa	(7) pa ¹¹	fathom
*matay	(8) mitay	(9) ta:i? ⁴²	to die
*dalam	(10) talàm	(11) la:n? ⁴²	inside
*labuh	(12) lipùh	(13) phu ⁵⁵	to fall down
*bula:n	(14) pilàn	(15) phia:n ¹¹	moon
	pala	(16) pia ³³	to plant
	tapuh	(17) phu ⁵⁵	to ransom
	tatà	(18) tha ¹¹	chest

Tsat:

... h	; ... ay	; ... aN
\emptyset^{55}	a:i? ⁴²	a:n? ⁴²
Proto-Chamic	... T	...({N, w, y})
+D	? ⁴²	11
-D	? ²⁴	33

- $\{*\mathbf{b}, *\mathbf{p}, *\mathbf{g}\} (\mathbf{V}) \{*\mathbf{l}, *\mathbf{r}\} > \{\mathbf{ph}, \mathbf{p}, \mathbf{kh}\} \mathbf{i}$
- otherwise the penultimate syllable is lost
- final syllable
 - $\{*\mathbf{b}, *\mathbf{d}, *\mathbf{g}\}- > \{\mathbf{ph}, \mathbf{th}, \mathbf{kh}\}-$
 - $^*\mathbf{r}- > \mathbf{z}-$
 - $\{*\mathbf{ow}, *\mathbf{ey}\} > \{\mathbf{ə}, \mathbf{ai}\}$