

## Seventeenth International Linguistics Olympiad

Yongin (Republic of Korea), 29 July – 2 August 2019

### Individual Contest Solutions

**Problem 1.** Word order:

- (O) V- $l_5$  (S = subject; O = object; V = predicate)
- $(O_1) V_1-l_5^= (O_2) V_2-l_5$
- $(O_1) V_1-l_{S_1}-a (O_2) V_2-l_{S_2} (S_1 \neq S_2)$
- $N_1-a N_2-a$  ‘ $N_1$  and  $N_2$ ’ (N = noun)

before a vowel: **b** > **w**

In some verbs the vowel in the last syllable of the root assimilates to the vowel of the first syllable of the ending.

S	$l_5^=$ ( $S_1 = S_2$ )	$l_5$		
		past	present	future
1st person sg	<b>-en-i</b>	<b>-aan</b>	<b>-iin</b>	<b>-an-iin</b>
2nd person sg	<b>-en-eb</b>		<b>-eeb</b>	<b>-an-eeb</b>
3rd person sg m	<b>-en-e</b>	<b>-oon</b>	<b>-een</b>	<b>-an-een</b>
3rd person sg f	<b>-en-u</b>	<b>-een</b>	<b>-uun</b>	<b>-an-uun</b>
1st person pl	<b>-en-ub</b>		<b>-uub</b>	<b>-an-uub</b>
3rd person pl	<b>-en-ib</b>		<b>-iib</b>	<b>-an-iib</b>

- (a) 12. **Om benu aneen.** *She took the bread and ate it.*  
 13. **Munuuna wunuub.** *She comes and we go away.*  
 14. **Wingkiiwa wengamburuun.** *They sing and she hears.*  
 15. **Anon ye weng wengamberenib yeedaraniib.** *They will hear the dog and will get up.*  
 16. **Oon wedmaniina karub wedmaneeb.** *I will see the fish and you(sg) will see the man.*  
 17. **Ok wedmeena aniin.** *He sees the water and I drink it.*
- (b) 18. *We will go away and they will come.* **Wananuuwa mananiib.**  
 19. *I take the pig and he takes the fish.* **Awon biina oon been.**  
 20. *He saw the water and the house and heard the dog.* **Oka ambiwa wedmene anon ye weng wengamboroon.**  
 21. *You(sg) eat the bread and sing.* **Om aneneb wingkeeb.**

**Problem 2.** Word order: A N (A = adjective, N = noun).

Colours:	#FFFFFF	#FF0000	#964B00	#000000
animals	<b>muent-er'ery</b>		<b>s'erkt-er'ery</b>	<b>ler'erg-ery</b>
trees		<b>pekoy-ar'</b>		<b>lo'og-ar'</b>
round things	<b>muench-erh</b>	<b>perkery-erh</b>		
everything	<b>muench-ey</b>		<b>s'okt-oy</b>	<b>lo'og-ey</b>

- (a)
- |                                       |                                |
|---------------------------------------|--------------------------------|
| 1. <b>muencherh rohkuen</b>           | G. <i>white ball</i>           |
| 2. <b>perkeryerh holeehl 'wernerh</b> | M. <i>red hazelnut</i>         |
| 3. <b>muencherh nerhpery</b>          | D. <i>white berry</i>          |
| 4. <b>s'erakter'ery ch'eeshah</b>     | A. <i>brown dog</i>            |
| 5. <b>muenchar' pyaap'</b>            | H. <i>white manzanita bush</i> |
| 6. <b>pekoyar' tepoo</b>              | K. <i>red tree</i>             |
| 7. <b>luuehlson' nerhpery</b>         | N. <i>purple berry</i>         |
| 8. <b>muenchey cheek'war</b>          | I. <i>white chair</i>          |
| 9. <b>muent'er'ery ch'eeshah</b>      | F. <i>white dog</i>            |
| 10. <b>ler'ergery cher'ery</b>        | C. <i>black bear</i>           |
| 11. <b>'errwerhson' slekwoh</b>       | L. <i>grass-green shirt</i>    |
| 12. <b>muent'er'ery puuek</b>         | P. <i>white deer</i>           |
| 13. <b>lo'ogey slekwoh</b>            | O. <i>black shirt</i>          |
| 14. <b>s'oktoy no'oy</b>              | E. <i>brown shoe</i>           |
| 15. <b>'wer'errgerchson' cher'ery</b> | J. <i>orange bear</i>          |
| 16. <b>lo'ogey no'oy</b>              | B. <i>black shoe</i>           |
| 17. <b>tegee'n nerhpery</b>           | R. <i>yellow berry</i>         |
| 18. <b>skoyon rohkuen</b>             | Q. <i>blue ball</i>            |
- (b)
- |                          |                       |
|--------------------------|-----------------------|
| 19. <b>muencherhl</b>    | V. <i>milk</i>        |
| 20. <b>'wer'errgerch</b> | W. <i>alder tree</i>  |
| 21. <b>luuehl</b>        | X. <i>wild iris</i>   |
| 22. <b>ler'ergerh</b>    | T. <i>coffee bean</i> |
| 23. <b>pekoyek</b>       | U. <i>blood</i>       |
| 24. <b>skoyon</b>        | Y. <i>sky</i>         |
| 25. <b>tegee'n</b>       | S. <i>canary</i>      |
- (c)
- |                                    |                            |
|------------------------------------|----------------------------|
| 26. <b>'errwerh</b>                | — <i>grass</i>             |
| 27. <b>ler'ergerh rohkuen</b>      | — <i>black ball</i>        |
| 28. <b>perkeryer'ery ch'eeshah</b> | — <i>red dog</i>           |
| 29. <b>pyerrp't'ery ch'eeshah</b>  | — <i>reddish-brown dog</i> |
- (d)
- |                        |                           |
|------------------------|---------------------------|
| 30. <i>purple deer</i> | — <b>luuehlson' puuek</b> |
| 31. <i>white shoe</i>  | — <b>muenchey no'oy</b>   |
| 32. <i>yellow ball</i> | — <b>tegee'n rohkuen</b>  |
| 33. <i>black tree</i>  | — <b>lo'ogar' tepoo</b>   |

**Problem 3.** The direction of writing is from right to left.

- [in the Book Pahlavi script] ↔ [scientific transliteration]:

<b>A</b>	ʾ, A, h	<b>n</b>	n, r, w, '	<b>𐭠</b>	s
<b>b</b>	b	<b>z</b>	z	<b>c</b>	c, p
<b>i</b>	d, g, y, <u>z</u>	<b>k</b>	k	<b>s</b>	š
<b>h</b>	E	<b>r</b>	l	<b>t</b>	t
		<b>x</b>	m		

- [[ligatures]]:

<b>DX</b> ← <b>A-A</b>	<b>s</b> ← <b>A-i</b>	<b>DI</b> ← <b>A-r</b>	<b>𐭠𐭠</b> ← <b>x+Z</b>
<b>TeX</b> ← <b>t+A-A</b>	<b>A</b> ← <b>i+i</b>	<b>H</b> ← <b>n+x+r</b>	<b>DeF</b> ← <b>A-i+i+𐭠</b>
<b>W</b> ← <b>i+A</b>	<b>DeF</b> ← <b>A-A-i+i</b>	<b>R</b> ← <b>c+r</b>	<b>𐭠f</b> ← <b>n+𐭠</b>
<b>s 𐭠𐭠</b> ← <b>s+i+x+A</b>	<b>TF</b> ← <b>t+i+i</b>	<b>Tf</b> ← <b>t+r</b>	<b>TF</b> ← <b>t+𐭠</b>
<b>FX</b> ← <b>c+A</b>	<b>DSM</b> ← <b>A-i+x+i</b>		<b>Tef</b> ← <b>t+s</b>
	<b>Tf</b> ← <b>t+i</b>		

- [scientific transliteration] ↔ [transcription]:

<b>ʾ</b>	∅, ā	<b>k</b>	k, -g	<b>t</b>	t, -d, h
<b>b</b>	b	<b>l</b>	l, r	<b>w</b>	w, ō, u, ū
<b>c</b>	č, -z	<b>m</b>	m	<b>y</b>	ǰ, -y, ī
<b>d</b>	d, -y, ē	<b>n</b>	n	<b>z</b>	z
<b>g</b>	g	<b>r</b>	r	<b>'</b>	-∅
<b>h</b>	h, x	<b>s</b>	s	<b>—</b>	a, e, i
		<b>š</b>	š		

(a)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
E	CC	G	Y	D	CC	K	S	V	L	I	Z	P	DD	O	M	B
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
F	X	C	BB	V	AA	J	T	Q	H	T	U	W	R	A	F	N

(b) U. **\$** = **𐭠DX** ʾhlmn' Ahreman 'the evil spirit'.

- (c) EE. **𐭠𐭠𐭠** bʾnbšn' bāmbišn queen  
FF. **DXc** chʾl čahār four  
GG. **rt** tl tar over, through, across  
HH. **𐭠DX** hʾk' xāk earth, dust  
II. **𐭠𐭠** hwn' xōn blood  
JJ. **𐭠𐭠** hwk' hūg pig

(d)

KK. DKRA **a𐭠** LL. dlwnd **i𐭠** MM. stwl **r𐭠F** NN. cmbll **r𐭠c**

**Problem 4.**  $\overset{\text{R}}{\downarrow} \text{C}_1 \text{V} \text{C}_2$  (V is the stressed vowel)

- North dialect:  $\text{R} = \text{C}_1 \check{\text{V}} \text{C}_2$ , but
  - $\text{C}_1 = \text{C}_2 \Rightarrow \text{R} = \text{C}_1 \text{V}$
  - there is a vowel before  $\text{C}_1 \Rightarrow \text{R} = \text{C}_2$
- Coast dialect:  $\text{R} = \text{C}_1 \check{\text{V}}_1 \text{C}_2 \text{V}_2$ , but
  - $\neg \exists \text{V}_2 \Rightarrow \text{R} = \text{C}_1 \text{V}_1 \text{C}_2$
  - $\exists \text{V}_2 \wedge \text{C}_2 \in \{\text{C}_1, \text{k}, \text{g}, \text{ŋ}, \text{w}\} \Rightarrow \text{R} = \text{C}_1 \text{V}_1$

( $\text{C}_1, \text{C}_2$  are consonants;  $\text{V}, \text{V}_1, \text{V}_2$  are vowels)

Answers:	North dialect	Coast dialect
ɛtaleŋa	ɛtaŋleŋa	ɛtaleleŋa
jaga	jaɡjaga	jaɟaga
gasírana	ɡarsírana	ɡasirasírana
daramota	darat̪mota	daramotamota
pɔwna	pɔwpɔwna	pɔwpɔwna
ertɔpa	ertɔptɔpa	ertɔpatɔpa
dabuka	daɓbuka	daɓubuka
ŋuŋim	ŋuŋuŋim	ŋuŋuŋim
igónŋ	iŋɡónŋ	igónŋɡɔŋ

**Problem 5.** Rules:

- word order:

$$- \boxed{A (T) \text{ nú } B} \left( \begin{array}{l} \text{'A is B'/'A was B', } T = \text{tense: } \begin{cases} \text{cí} & (\text{past}) \\ \emptyset & (\text{future}) \end{cases} \end{array} \right)$$

$$- \boxed{S \text{ T } V \text{ O (lé) } L \text{ D}}$$

(S = subject, V = predicate, O = object, L = place, D = day)

\* 'to see' = yɛn (O) lé

\* after a consonant: lé > é

	tense	'just now'/'be about to ...'	today	< 3 days	> 3 days
• tense:	past (V̇)	nô:	bê:	cí nô:	tò nô:
	future (V̇)	nú	nú gé:	nú bóy	nú yú:

- 1st person sg: n- + T/V

– nb > mb

– nk/ng > ŋk/ŋg

– nn > n

- after ˆ, ˜, ˘: ´ > ˘

Answers:

- (a) 16. bvúsòw nú fò shě ntfũ. *Bvusɔw is the day after tomorrow.*  
 17. me nú ngé: nyén kèŋkfũ lé èbèn. *Today, I will see the yam.*  
 18. wvù tò nô: yèn bèsèn ẽ bvúmbòn. *On Bvumbon, he saw us.*  
 19. bèsèn nú bóy tó fòwǎy bvúzhí:dèn. *On Bvuzhiden, we will come to the market.*

(b)

Bvutfu, Bvun̄ka, Bvuzhi, Bvukema, Bvun̄kaden, Bvuzhiden, Bvusɔw, Bvumbon.

- (c) 20. On *Bvusɔw*, I helped the man. me ncí nô: nfĩ dièmsě́n bvúsòw.  
 21. The thief stole the yam just now. cǎŋ nô: cǎŋ kèŋkfũ.  
 22. On *Bvun̄kaden*, I will hear the car. me nú nyú: nyów mutù bvún̄kâ:dèn.  
 23. Today, the woman will kill the man. kwô:n nú gé: yó dièmsě́n èbèn.  
 24. Today, the man saw you(sg). dièmsě́n bê: yèn wò lě èbèn.