

## Seventeenth International Linguistics Olympiad

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

### Individual Contest Solutions

**Problem 1.** Word order:

- (O) V- $l_S$  (S = subject; O = object; V = predicate)
- (O<sub>1</sub>) V<sub>1</sub>- $l_S^=$  (O<sub>2</sub>) V<sub>2</sub>- $l_S$
- (O<sub>1</sub>) V<sub>1</sub>- $l_{S_1}$ -a (O<sub>2</sub>) V<sub>2</sub>- $l_{S_2}$  (S<sub>1</sub> ≠ S<sub>2</sub>)
- N<sub>1</sub>-a N<sub>2</sub>-a ‘N<sub>1</sub> and N<sub>2</sub>’ (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	$l_S^=$ (S <sub>1</sub> = S <sub>2</sub> )	$l_S$		
		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'erkt-er'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. **'errwerh** — *grass*
  27. **ler'ergerh rohkuen** — *black ball*
  28. **perkeryer'ery ch'eeshah** — *red dog*
  29. **pyerrp't'ery ch'eeshah** — *reddish-brown dog*
- (d)
30. *purple deer* — **luuehlson' puuek**
  31. *white shoe* — **muenchey no'oy**
  32. *yellow ball* — **tegee'n rohkuen**
  33. *black tree* — **lo'ogar' tepoo**

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

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

𐭠	ʾ, A, h	𐭡	n, r, w, ' (with hook)	𐭢	s
𐭣	b	𐭤	z	𐭥	c, p
𐭦	d, g, y, Z	𐭧	k	𐭨	š
𐭩	E	𐭪	l	𐭫	t
		𐭬	m		

- [[ligatures]]:

𐭠𐭠 ← 𐭠+𐭠	𐭠𐭡 ← 𐭠+𐭡	𐭠𐭢 ← 𐭠+𐭢	𐭠𐭣 ← 𐭠+𐭣
𐭠𐭤 ← 𐭠+𐭤	𐭠𐭥 ← 𐭠+𐭥	𐭠𐭦 ← 𐭠+𐭦	𐭠𐭧 ← 𐭠+𐭧
𐭠𐭨 ← 𐭠+𐭨	𐭠𐭩 ← 𐭠+𐭩	𐭠𐭪 ← 𐭠+𐭪	𐭠𐭫 ← 𐭠+𐭫
𐭠𐭬 ← 𐭠+𐭬	𐭠𐭭 ← 𐭠+𐭭	𐭠𐭮 ← 𐭠+𐭮	𐭠𐭯 ← 𐭠+𐭯
𐭠𐭰 ← 𐭠+𐭰	𐭠𐭱 ← 𐭠+𐭱	𐭠𐭲 ← 𐭠+𐭲	𐭠𐭳 ← 𐭠+𐭳

- [scientific transliteration] ↔ [transcription]:

𐭠	∅, ā	k	k, -g	t	t, -d, h
b	b	l	l, r	w	w, ō, u, ū
c	č, -z	m	m	y	ǰ, -y, ī
d	d, -y, ē	n	n	z	z
g	g	r	r	'	-∅
h	h, x	s	s	—	a, e, i
		š	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. 𐭠𐭡𐭢𐭣 = 𐭠𐭡𐭢𐭣 'hlmn' Ahreman 'the evil spirit'.

- (c) EE. 𐭠𐭡𐭢𐭣 b<sup>o</sup>nbšn' bāmbišn queen  
 FF. 𐭠𐭡𐭢𐭣 ch<sup>o</sup>l čahār four  
 GG. 𐭠𐭡𐭢𐭣 tl tar over, through, across  
 HH. 𐭠𐭡𐭢𐭣 h<sup>o</sup>k' xāk earth, dust  
 II. 𐭠𐭡𐭢𐭣 hwn' xōn blood  
 JJ. 𐭠𐭡𐭢𐭣 hwk' hūg pig

(d)

KK. DKRA 𐭠𐭡𐭢𐭣 LL. dlwnd 𐭠𐭡𐭢𐭣 MM. stwl 𐭠𐭡𐭢𐭣 NN. cmbll 𐭠𐭡𐭢𐭣

**Problem 4.**  $\overset{R}{\downarrow}C_1VC_2$  (V is the stressed vowel)

- North dialect:  $R = C_1VC_2$ , but
  - $C_1 = C_2 \Rightarrow R = C_1V$
  - there is a vowel before  $C_1 \Rightarrow R = C_2$
- Coast dialect:  $R = C_1V_1C_2V_2$ , but
  - $\neg \exists V_2 \Rightarrow R = C_1V_1C_2$
  - $\exists V_2 \wedge C_2 \in \{C_1, \mathbf{k}, \mathbf{g}, \mathbf{\eta}, \mathbf{w}\} \Rightarrow R = C_1V_1$

( $C_1, C_2$  are consonants;  $V, V_1, V_2$  are vowels)

Answers:	North dialect	Coast dialect
etaleŋa	etaŋleŋa	etaleleŋa
jaga	jagjaga	jajaga
gasírana	garsírana	gasirasírana
daramota	daratmota	daramotamota
pɔwna	pɔwpɔwna	pɔwpɔwna
ertɔpa	ertɔptɔpa	ertɔpatɔpa
dabuka	dakbuka	dabubuka
ŋuŋim	ŋuŋuŋim	ŋuŋuŋim
igónŋ	iŋgónŋ	igónŋgɔŋ

**Problem 5.** Rules:

- word order:

–  $A(T) \text{ n} \acute{u} B$  (‘A is B’/‘A was B’, T = tense:  $\begin{cases} \text{c} \acute{\text{i}} & \text{(past)} \\ \emptyset & \text{(future)} \end{cases}$ )

–  $S T V O (\text{l} \acute{e}) L D$

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

\* ‘to see’ =  $y \acute{e}n$  (O)  $l \acute{e}$

\* after a consonant:  $l \acute{e} > \acute{e}$

	tense	‘just now’/‘be about to ...’	today	< 3 days	> 3 days
• tense:	past (V)	$n \hat{o}:$	$b \hat{e}:$	$c \acute{\text{i}} n \hat{o}:$	$t \grave{o} n \hat{o}:$
	future (V)	$n \acute{u}$	$n \acute{u} g \acute{e}:$	$n \acute{u} b \acute{o}y$	$n \acute{u} y \acute{u}:$

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

–  $nb > mb$

–  $nk/ng > \eta k/\eta g$

–  $nn > n$

- after  $\hat{a}, \hat{e}, \hat{o}$ :  $\acute{a} > \acute{e}$

Answers:

- (a) 16.  $bv \acute{u}s \grave{o}w \text{ n} \acute{u} f \grave{o} sh \acute{e} ntf \acute{u}:$ . *Bvusow is the day after tomorrow.*  
 17.  $me \text{ n} \acute{u} \eta g \acute{e}:$   $ny \acute{e}n \text{ k} \acute{e} \eta k f \acute{u} l \acute{e} \acute{e} b \grave{e}n.$  *Today, I will see the yam.*  
 18.  $w \acute{v} \acute{u} t \grave{o} n \hat{o}:$   $y \acute{e}n \text{ b} \acute{e} s \acute{e}n \acute{e} \text{ b} \acute{v} \acute{u} m b \acute{o}n.$  *On Bvumbon, he saw us.*  
 19.  $b \acute{e} s \acute{e}n \text{ n} \acute{u} b \acute{o}y t \acute{o} f \acute{o} w \acute{a}y \text{ b} \acute{v} \acute{u} z h \acute{\text{i}}: d \acute{e}n.$  *On Bvuzhiden, we will come to the market.*

(b)

**Bvutfu, Bvuŋka, Bvuzhi, Bvukema, Bvuŋkaden, Bvuzhiden, Bvusow, Bvumbon.**

- (c) 20. *On Bvusow, I helped the man.*  $me \text{ n} \acute{c} \acute{\text{i}} n \hat{o}:$   $n f \acute{\text{i}} d \acute{\text{i}} \acute{e} m s \acute{e} n \text{ b} \acute{v} \acute{u} s \grave{o}w.$   
 21. *The thief stole the yam just now.*  $c \acute{o} \eta n \hat{o}:$   $c \acute{o} \eta \text{ k} \acute{e} \eta k f \acute{u}.$   
 22. *On Bvuŋkaden, I will hear the car.*  $me \text{ n} \acute{u} n y \acute{u}:$   $ny \acute{o} w \text{ m} \acute{u} t \acute{u} \text{ b} \acute{v} \acute{u} \eta k \acute{a}: d \acute{e}n.$   
 23. *Today, the woman will kill the man.*  $k w \acute{o}: n \text{ n} \acute{u} g \acute{e}:$   $y \acute{o} d \acute{\text{i}} \acute{e} m s \acute{e} n \acute{e} b \acute{e}n.$   
 24. *Today, the man saw you(sg).*  $d \acute{\text{i}} \acute{e} m s \acute{e} n \text{ b} \hat{e}:$   $y \acute{e}n \text{ w} \acute{o} l \acute{e} \acute{e} b \acute{e}n.$