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**SIGIR**  
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**YAHOO!**

***The Eighth  
Annual***

**North American  
Computational  
Linguistics  
Olympiad**

**2014**

[www.naclo.cs.cmu.edu](http://www.naclo.cs.cmu.edu)

**SOLUTIONS**

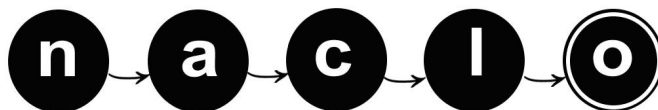
**Open Round**

**January 30, 2014**

# (A) What's the Time in Tallinn? (I/I)

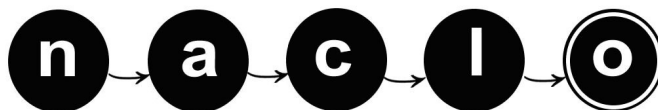
1.
  - a. Kolmveerand üheksa
  - b. Veerand viis
  - c. Pool kaksteist
  - d. Viis minutit seitse läbi
  - e. Pool üks
2.
  - a. 9:25
  - b. 3:15
  - c. 2:30
  - d. 11:45
  - e. 6:35

In Estonian, up to and including 14 minutes past the hour is exactly the same as in English. However, at quarter past, Estonian starts referring to the next hour, so that instead of “quarter past the previous hour” (which is what English does), Estonian thinks it is a quarter on the way to the next hour. This also means that instead of half past the hour, Estonian thinks it is half an hour to the next hour. Quarter to the next hour is simply  $\frac{3}{4}$  on the way to the next hour.



## (B) Māori Loanwords (I/I)

- I.
- |     |   |
|-----|---|
| 1.  | M |
| 2.  | J |
| 3.  | C |
| 4.  | L |
| 5.  | R |
| 6.  | F |
| 7.  | Q |
| 8.  | A |
| 9.  | K |
| 10. | O |
| 11. | H |
| 12. | S |
| 13. | D |
| 14. | G |
| 15. | E |
| 16. | T |
| 17. | N |
| 18. | P |
| 19. | I |
| 20. | B |
- 2.
- |            |           |
|------------|-----------|
| hekeretari | secretary |
| pirinihehe | princess  |
| pirihimana | policeman |
| tiati      | judge     |
- 3.
- |          |         |
|----------|---------|
| Iharaira | Israel  |
| Kiupa    | Cuba    |
| Peina    | Spain   |
| Tiamani  | Germany |
| Tiapana  | Japan   |
- 4.
- |        |        |
|--------|--------|
| beef   | pīwhi  |
| bull   | pūru   |
| cart   | kāta   |
| clock  | karaka |
| lease  | rīhi   |
| meat   | mīti   |
| seal   | hīri   |
| street | tiriti |
| time   | taima  |
| watch  | wāti   |



# (C) Levenshtein's Fine Signs (I/I)

1. Adding a letter: \$5  
Removing a letter: \$2
2. \$40
- 3A. May: \$33  
June: \$33  
July: \$28
- 3B. July  
May  
June

In May, replacing a letter – that is, adding a letter where one was deleted – is only \$5. (In other words, deletion is free if a letter is added in the same spot.) In June, moving a letter to a different position is only \$4. (You might also say something like “Addition is only \$2 if that letter was deleted elsewhere in the word.”) In July, addition is \$7, but deletion is -\$1.



# (D) Wheel of Fortune Cookies (I/I)

1.

CREDIT CARD GAME

ICE CREAM CHEESE

COUCH POTATO CHIP

BOWLING ALLEY CAT FOOD

BEACH HOUSE ARREST WARRANT

FLOWER BED REST ROOM TEMPERATURE

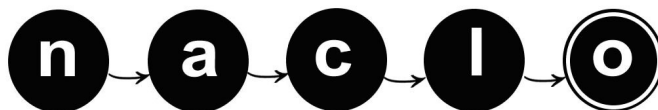
SPACE SHUTTLE BUS STATION WAGON

COWBOY BOOT CAMP FIRE DEPARTMENT STORE

1	2	3	4	5	6	7	8	9	10	11	12	13	14
D	M	O	L	E	A	H	U	R	B	S	I	N	T

2. Here are a selection of some of the high-scoring submissions we received:

OLIVE	OIL	SPILL
BROKEN	HEART	ATTACK
MERRY	CHRISTMAS	TREE
WILD	WEST	SIDE
NURSING	HOME	PLATE
NEW	YEARS	OLD
AFRICAN	AMERICAN	INDIAN
WELCOME	BACK	PAIN
NEW	BABY	BOOMERS
THANK	YOU	SUCK



# (E) Visible Speech (I/I)

1. peaks  
boot  
tap  
cogs

2. back  
peace/piece  
dog  
peas

3. aɪb  
ɔɪʃ  
ʊɒlɑ



# (F) Lontara (1/2)

## Hints

Hint 1: The phrase *mattampa puang lé ri batara* is repeated twice in the scrambled Latin-alphabet Buginese text. Can you find a series of characters that is repeated twice in the Lontara-script Buginese text? Use this as a foothold for discovering what some symbols mean, and learning more symbols.

Hint 2: Try thinking of the symbols as syllables instead of letters.

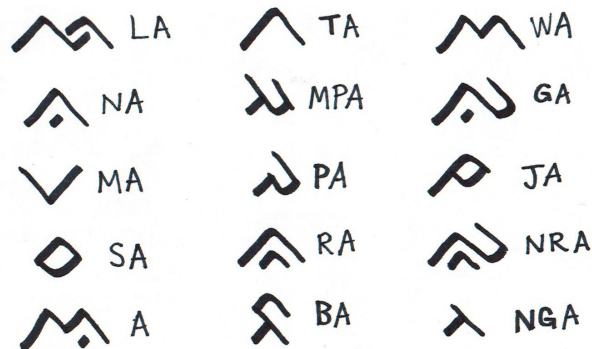
## The Lontara script

Each symbol is a single syllable. Lontara is an abugida: the larger, core part of each symbol represents the initial consonant or consonants, while any smaller, accentuating mark represents the vowel.

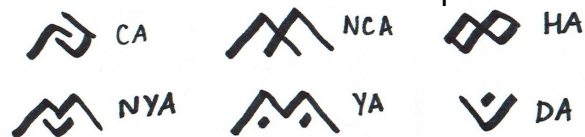
When there is no vowel mark, the syllable defaults to the vowel "A". When a vowel mark is present, the "A" changes to the corresponding vowel. This is similar to Devanagari, another abugida.



Here are more consonants of the Lontara script, in the order they appear in the Buginese text.



For fun, here are some consonants which were not used in the problem.

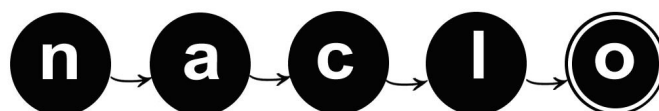


Although some of the Buginese syllables have final consonants, Lontara does not have a way to write down the final consonants. So the *-ng* and *-q* at the end of many of the Buginese words have no representation in the Lontara script: they are ignored. Doubled consonants, as in *mattampa*, are also ignored and just treated as single consonants (*matampa*). Lastly, spaces are ignored.

A single punctuation mark (at right) is used to represent both the comma and the period.



Reference for the Lontaran script: [http://en.wikipedia.org/wiki/Lontara\\_alphabet](http://en.wikipedia.org/wiki/Lontara_alphabet)



# (F) Lontara (2/2)

## The unscrambled poem

Lé namasuaq mua na sia  
mattampa Puang lé ri batara,  
mappaleq wali ri Pérétiwi.  
Tammaga Puang muloq séua rijajiammu,  
tabareq-bareq ri atawareng,  
ajaq naonro lobbang linoé  
makkatajangeng ri atawareng.  
Teddéwata iq, Puang, rékkua masuaq tau  
ri awa langiq, lé ri ménéqna Pérétiwié,  
mattampa Puang lé ri batara.

*There is no one  
to call the gods Lord,  
or to offer praise to the Underworld.  
Why Lord don't you have one of your children descend,  
and incarnate him on the earth,  
do not leave the world empty and  
the earth uninhabited.  
You are not a god, Lord, if there are no humans  
under the heavens, above the Underworld,  
to call the gods Lord.*

The Buginese text and translation were taken from a paper by Sirtjo Koolhof about the epic poem:  
<http://www.sabrizain.org/malaya/library/lagaligo.pdf>

## Answers

Problem 1

1. B
2. E
3. D
4. I
5. H
6. A
7. C
8. J
9. G
10. F

Problem 2

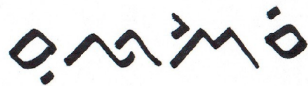
lord = puang

underworld = pérétiwi OR pérétiwié

earth = atawareng

Problem 3

Sulawesi



Amparita



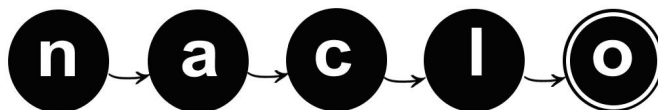
La Galigo



Tenriabéng



Tompoq Tikkaq





# (G) Cameroon Pidgin English (1/2)

1. CPE compound Translation  
open han B) generous  
tai han C) mean  
wan han A) one of a pair
2. CPE compound Translation  
bik het C) intelligent  
klin het B) innocent  
trong het A) stubborn
3. CPE compound Translation  
bat hat E) hatred  
blak hat C) wickedness  
gut hat A) kindness/generosity  
kul hat B) calmness  
koni hat D) cleverness/craftiness
4. CPE compound Translation  
bik maut B) haughtiness/bragging  
koni maut C) dishonesty  
swit maut A) ability to persuade/flattery
5. CPE compound Translation  
blak ai C) dizziness  
blak bush B) heart of a forest  
blak hat A) wickedness



# (G) Cameroon Pidgin English (2/2)

6. CPE compound

drai ai

drai han

drai nek

drai tok

Translation

D) insomnia

C) poverty

B) thirst

A) unsubstantiated statements

7.

A. open han  
gut hat

B. stick  
market  
service  
old  
green

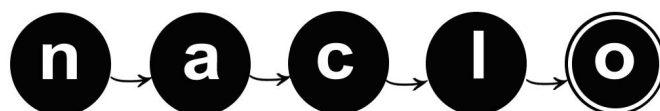
sitik

maket

sevis

ol

grin



# (H) Bertrand and Russell (I/I)

1. D  
J  
B  
A  
E

2. E  
C  
D  
A  
H

