AILO Workshop – Jan 2018

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My background

- About you introduction
  - Undergrad, postgrad, career

Aims of AILO

- Enhance problem-solving skills

- Introduce you to logic, linguistics and language technology

- Encourage you to take Science, Technology, Engineering (STEM) courses in University

Timeline

- First Round end Jan 2018 in your own school (5 Qs, 2 hours)

- 100 qualify for the national final 13th March 2018, DIT Grangegorman

- Four students qualify for the International Linguistics Olympiad in Prague 26-30 July 2018
- Team training 20-25 July 2018

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Prizes

- Trophies and prizes for Junior (under 16) and Senior (16 and over) categories

- Top 100 in the country invited to the national final. Further prizes to be won!

- At the final, you compete for 4 places to represent Ireland at the International Linguistics Olympiad (IOL) in Prague in July 2018

Nunavut ᓄᓇᕗᑦ

Iqaluit ᐃᖃᓗᐃᑦ

Not always left to right or even top to bottom!

- Writing systems e.g. Inuit
  - A writing system is any conventional method of visually representing verbal communication
- Morphology
  - The study of the structure of words
- Morphonemics
  - the interaction between morphological and phonological or phonetic processes
- Syntax
  - The set of rules that govern the structure of sentences in a given language

- Every problem can be solved
- Look carefully
  - The fine detail matters, look for patterns
  - Look for clues in the title and the description
- Build on what you already know
  - but beware of the assumptions you make
- Write down everything you notice about the language structure in a systematic way

Let's try some exercises

- Give students the exercise sheets (2018 AILO Exercises.pdf)

- Give them 5 minutes for each

- Write the answers together

- Write the rules together

Let's try some puzzles

- Give students one puzzle to try for 10 minutes

- Solution ideas from students

- Discuss strategies for solving problems and key findings

- It's not necessary to work out the complete solution once you/they can see HOW to do it

Pali

- Structure of problem:
  - 6 sentences in Pali with their translations
  - Notice that some repeated words have different endings
- Challenge:
  - Work out which words correspond
  - and why the endings differ

Pali

- This question is about case endings, typical of Indo-European languages.
  - The nominative or subject case marker is -o
  - The accusative or object marker is -am
  - The dative or indirect object plural -e
  - The genitive or possessive -assa
- In addition, the verb agrees in number with the subject:
  - -ti for singular
  - -nti for plural
- Note also the word order:
  - the verb comes at the end of the sentence
  - the genitive follows the noun it applies to. So rājo gāmassa is 'king of the village', not 'village of the king'.

Pali: What do you see?

- Look for patterns in the data
    - sets of similar words
        - e.g. *mahāmatto*, *mahāmattam, mahāmattassa* all mean 'minister' but in different roles
    - other words with similar endings
- try to account for everything
- also notice the word order!

Pali: What do you see?

- Sets of similar words e.g. *mahāmatto*, *mahāmattam, mahāmattassa* all mean 'minister' but in different roles. Case endings and verbal agreement.
- a. *rājo nisīdati*   The king sits down
- b. *rājo gāmassa devo hoti*   The {village's king | king of the village} is (a) god

- a. The minister asks the philosophers.   mahāmatto samane pucchati
- b. The philosopher sits down.   samano nisīdati
- c. They sit down.   nisīdanti
- d. The minister asks the kings.   mahāmatto rāje pucchati
- e. The disciple's village.   gāmo upāsakassa
- f. The meaning of the world is god.   attho lokassa devo hoti

Explanations

- Round 2 will ask you to explain your answer

- We do <u>not</u> want you to recap the steps you took in finding the answer

- The "explanation" part asks you to summarise WHAT you have discovered, not HOW you discovered it.

- For example, Slide 14 summarises what you discovered about Pali, but says nothing about how you went about solving the problem (which is of no interest to the AILO markers!)

Pali

- ## Endings indicate roles:
  - The nominative or subject case marker is -o
  - The accusative or object marker is -am
  - The dative or indirect object plural -e
  - The genitive or possessive -assa

- ## The verb agrees in number with the subject:
  - -ti for singular
  - -nti for plural

- ## Word order rules
  - the verb comes at the end of the sentence
  - the genitive follows the noun it applies to. So rājo gāmassa is 'king of the village', not 'village of the king'.

- The first part is to match the words and their pronunciations. Here's just one way to go about it:

  - There's just one 3-character word (L), and just one 3-syllable word (10). Assuming they match up, that gives you the symbols for *ja*자 , *jon*전 and *go*거

  - Now find other words with any of these syllables, and start the process of elimination: 7, 12 and 17 all end with *ja*, so find three words that end with자 and see if you can match up the other symbol.

- Once you have got all the pairs matched, start looking at the individual symbols

- Can you notice any similarities?

- Try grouping them in some systematic way, and notice how the symbols represent the consonants and vowels of each syllable.

- From this chart you should be able to see how the consonants and vowels are represented
- The next part of the question requires you to deconstruct these and then reassemble new symbols, in both transcription and Korean

	ba 바	pa 파	ja 자	cha 차							
	bal 발			chan 찬		tag 탁					
			jang 장	chang 창	dang 당						
awee 외					daw 도			haw 호	law 로	maw 모	saw 소
			ji 지			gi 기					sig 식
			jib 집								sin 신
					too 투				moon 문	soo 수
		bo 버	jon 전			go 거				
uee 의										su 스

So now you can read and write Korean!

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Ye Olde English Probleme

- Similar to Pali
- Have a go and check the solution online
- www.adaptcentre.ie/ailo

Good luck!

- And enjoy the fun of combining:
    - Problem-solving
    - Sherlock Holmes
    - Language learning