

Computational Linguistics (Spring 2009) — Esperanto

Esperanto is an artificial language created by the Polish oculist L.L. Zamenhof in the nineteenth century. Zamenhof designed the language to have a very simple and regular morphology, on the theory that war and pestilence were caused by irregular verbs. While his dream of world peace has not been achieved, his language has turned out to be very useful for constructing problem sets in introductory linguistics classes.¹

For this exercise, you will be applying the grammar engineering techniques you have mastered for English to a small grammar of Esperanto. To get ready for that, try out this pencil-and-paper exercise first. Based on the sentences in (1), write a small English–Esperanto morpheme ‘dictionary’ (a table of translations at the level of morphemes), and use it to translate the English sentences in (2) into Esperanto. You won’t need to turn in your results, but working through this will give you a feel for the language and you will find the Esperanto grammar easier to follow.

- (1)
- a. La alta knabo malsaniĝis.
‘The tall boy fell ill.’
 - b. Ĉu li grandigis la grandecon de la dormejo?
‘Did he increase the size of the dormitory?’
 - c. Ankaŭ malaltaj knabinoj povas esti belaj.
‘Short girls, too, can be beautiful.’
 - d. Mia patro estas sana ĉar li ne trinkas vinon.
‘My father is healthy because he doesn’t drink wine.’
 - e. La bonaj monaĥinoj volis preĝi en la preĝejo.
‘The good nuns wanted to pray in church.’
 - f. Lerni la esparantan lingvon estas facila.
‘It’s easy to learn Esperanto.’
 - g. Mi vidis ŝian onklon en la trinkejo.
‘I saw her uncle in the bar.’
 - h. La beleco de la lingvo estas ĝia facileco.
‘The beauty of the language is its simplicity.’
 - i. Ĉu vi konas miajn onklojn?
‘Do you know my uncles?’
- (2)
- a. Did her aunt know my mother?
 - b. His health has deteriorated.
 - c. The boys can also learn difficult languages at school.
 - d. The monks adorned the church.
 - e. Does your mother want to put the boys to sleep?

¹Warmest thanks to Rob Malouf, professor at San Diego State University, for his profound knowledge of its grammar and for creating this exercise.

The first step in analyzing a new language like this is to figure out which words in Esperanto match up to which words in the English translations. Look for sentences with the same or related words in the English translation, and then look for words which look similar in the corresponding Esperanto sentences. In this case, it's pretty easy, since Esperanto's syntax is almost exactly the same as that of English (Zamenhof didn't have a lot of imagination). To take the first sentence as an example, we can break it down like this:

| | | | |
|-----|------|-------|-------------|
| La | alta | knabo | malsaniĝis. |
| The | tall | boy | fell ill |

Once you have a good idea what the rules for constructing sentences are, look for patterns across individual words. Find words with similar meanings or similar grammatical functions, and see if there are common elements in their spellings. Keep in mind that Esperanto has no irregular morphology, so stems and endings always have exactly one spelling. Working from the first example again, you might notice that adjectives often end in *a* and nouns often end in *o*, so these would be good candidates for adjective and noun endings. You might also notice a similarity between *malsaniĝis* 'fell ill' and *malaltaj* 'short' in example (1c), *sana* 'healthy' in (1d), and *volis* 'wanted' in example (1e). From this you might guess that the structure of this word is:

| | | | | |
|-----|---------|--------|------|----------------------|
| mal | san | iĝ | is | = became not healthy |
| not | healthy | become | past | |

Continue in the same way with all the words, and you will collect an inventory of morphemes that you can use to construct the new words you need to translate the sentences in (2).