COGS 200 - Assignment 2

Hard copies to be submitted in class, and electronic copies via Connect, on 7 October.

Your answers to the following questions must be entirely your own, although you should feel free to discuss them with other students in the course, either in person or via the Connect discussion board. Give citations for any sources that you use.

1. It is sometimes suggested that the meaning of a sentence is given by the set of circumstances in which that sentence would be true. How would this approach help you translate "Beauty is truth, truth beauty,--that is all / Ye know on earth, and all ye need to know.'" into another language? (5 points)

2. When (if ever) is translation between two natural languages *impossible*? When (if ever) is it possible to create a perfectly equivalent translation of a text from one language into another? Briefly explain and defend both answers. (6 points)

3. Devise a sentence that has a clear meaning, but that you think Google Translate would struggle to translate. Explain which features of the sentence create the difficulty. (If you happen to know more than one language, you can use an example from a non-English language. In that case be sure to explain, without presupposing knowledge of that language, why Google's translation of it into English is wrong.) (3 points)

4. Are there any types of translation that humans *can* accomplish, but that you think would be impossible for any machine translation system to cope with? Briefly explain your answer. (4 points)

5. Give an example of a sentence that is *vague*, but not *ambiguous*. (2 points)

6. Consider the expression, "I smell coffee." Describe two different situations in which you might say this sentence: (a) a situation in which the *denotation* of the utterance is the most important aspect of its meaning, and (b) a situation in which some *connotation* of its meaning is the most important. For (b), be sure to characterize what that connotation is. Finally, (c) construct a different expression that would have the same connotation as the one you described in (b). (6 points)

7. Give one argument for, and one argument against the view that the meaning of the word 'dog' is the biologically defined species, *Canis familiaris*? (4 points)

8. Currently, there are official Wikipedias in 287 different languages. For the most part, articles in any one language are not translations of articles in any other language.

a) Suppose your task is to build automatic translation systems to translate articles *directly* from any one of the official Wikipedias to the language of any other. How many distinct translation systems would you need to build? Briefly justify your answer. (2 points)

b) Suppose, instead, you decide to invent a new, "intermediate," language for Wikipedia articles. Automatic translation of articles would then be a two step process. First, the source article is translated from its language to the intermediate language. Second, the version in the intermediate language is translated to the intended target language. With this approach, how many distinct translation systems would you need to build? Briefly justify your answer. (2 points)

c) Suppose Wikipedia were to grow to have official versions in n languages, for some n greater than 287. Generalize your results from parts a) and b) to determine how many distinct translation systems you would need to build if you followed the approach in part a) and how many you would need to build if you followed the approach in part b). Express your results as a function of n. (3 points)

d) In the long run, which seems the more viable approach? Briefly justify your answer. (3 points)

e) Think of the person you know who is fluent in the most number of natural languages. There's no need to identify the person. But, how many languages does this person know? Suppose the number is three or greater. How do you think this person "translates" from one language he or she knows to another? Is it more like part a) or like part b)? Pick one of the research methods that we have discussed in this course, and briefly describe how you, as a COGS researcher, might use it to investigate the way in which this person "translates" among the languages that he or she knows. (5 points)

9.   Consider the following sentences:

  "Jack apologized to Bill, but he didn't want to."
  "Jack apologized to Bill, but he didn't hear him."

What are the anaphoric pronouns in these sentences? How can a listener come to know what each pronoun refers to? (5 points)