NLP - Exercise 5

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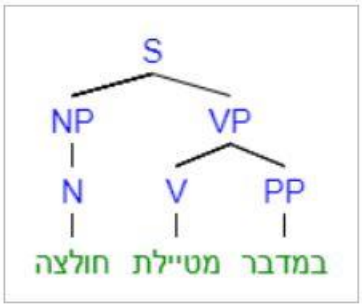
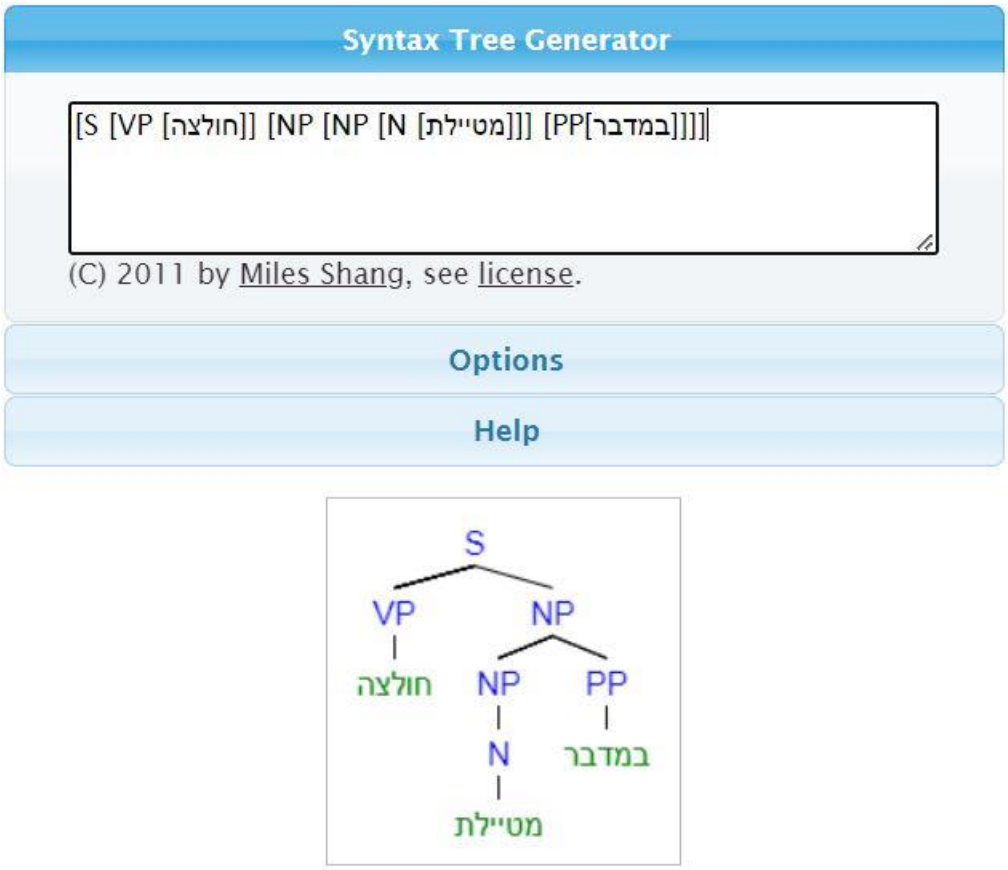
Part 2:

1. The sentence "חולצה מטיילת במדבר" can be parsed in two different ways, here are the syntax tree of each way of them:





2. For GP sentences I have chosen:

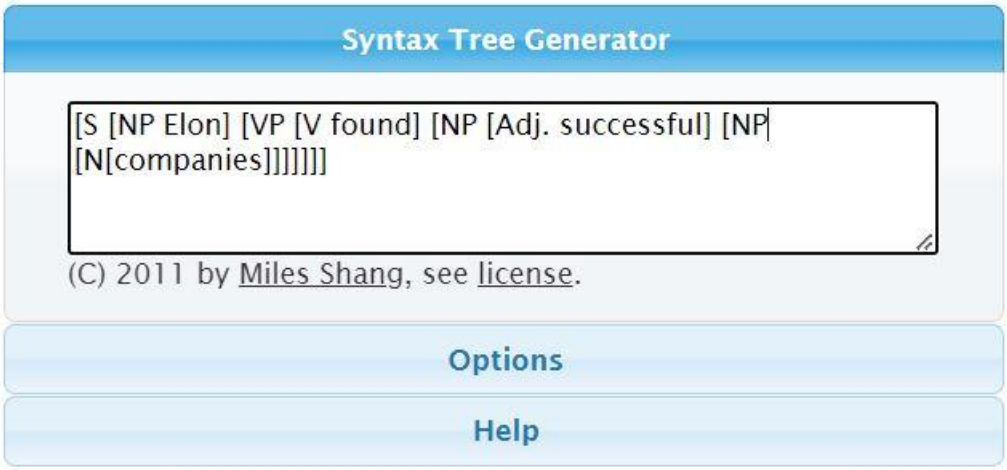
   a. "The boat floated down the river sank". When we reach the word "floated" we consider it as a verb, but when we reach "sank" we suddenly realize that the initial interpretation is not valid, and the right thing to do is to think about "floated" as an adjective not as a verb. Therefore, the word "floated" has the GP effect in this sentence.

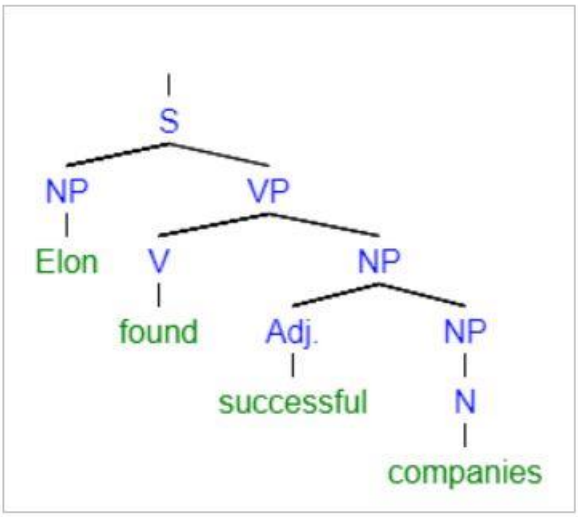
   b. "The girl told the story cried". This GP sentence is first parsed as so that the phrase "told the story" initially describes an action undertaken by the girl, until the word "cried" is reached, at which point the parse of the sentence changes to reflect that "told the story" describes something that was done to the girl. This sentence can be phrased more clearly as "The girl who was told the story cried".

   Sentences with GP effect are challenging ones for the language module. In general, these sentences have several meanings which makes the processing of the sentence hard like in sentence translation. In most of the times, the sentence with the GP effect has a one unique meaning and one unique parse tree which will give the most sensible meaning. To know which parse tree is the most suitable is not an easy task for the computer. It needs to process every possible meaning of each word in the sentence and try to find the most frequent meaning. However, sometimes the author means the less frequent meaning but the computer will not have it.

3. The sentence “Elon found successful companies” is lexically ambiguous. That is because the word “found” has two different meanings, one is the past form of “find”, and the other is the verb “found” in the base form.

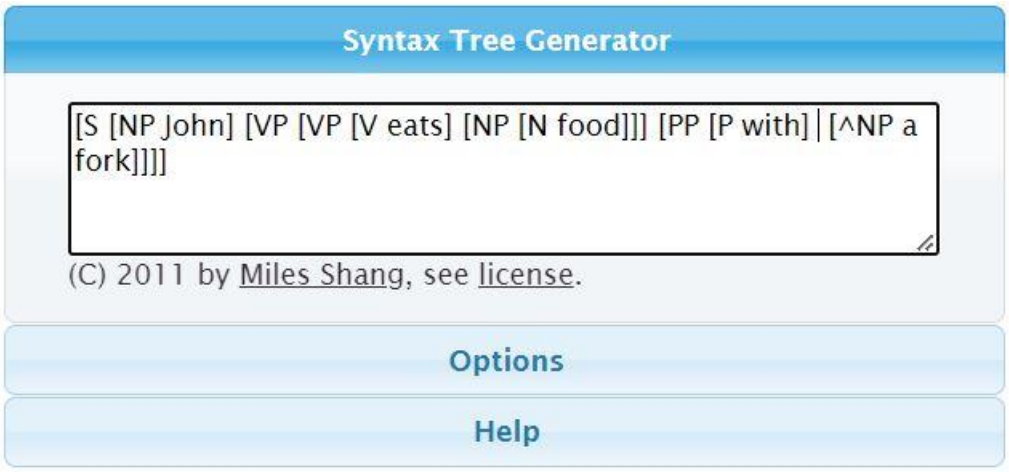
   For both meanings, we get the same parse tree, however; the meaning still differs due to the real form of the verb “found” in the sentence. Here is the parse tree for both meanings:

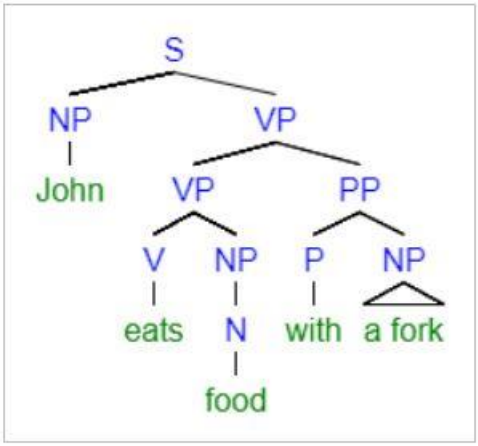




The sentence “John eats food with a fork” is syntactically ambiguous. That is because of the word “with”. The sentence could be understood as “John uses a fork for eating food” and could be understood as “John eats both the food and a fork together”.

For the first meaning, we get the following parse tree:





While the last meaning indicates the following parse tree: