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Computational Syntax: Introduction

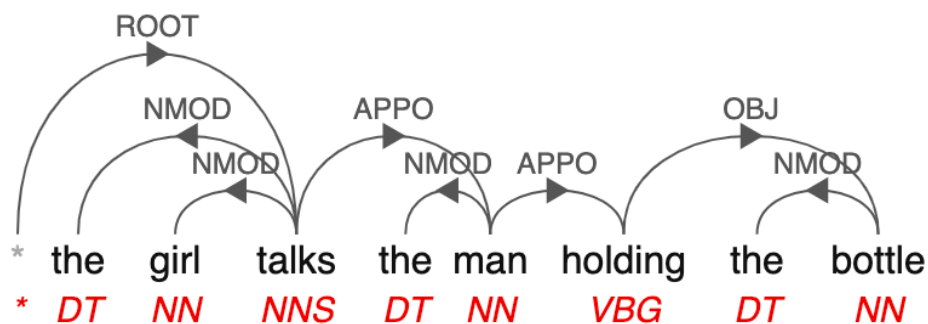
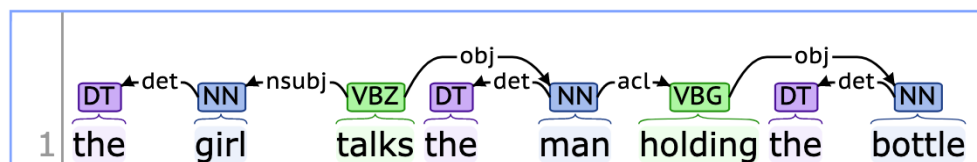
Exercises. Parsing.

1. Think of 5 examples of ambiguity cases in the different steps of analysis: tokenization, morphology, Syntax (PoS, coreference, PP attachment...). Check also supposedly unsolvable examples.

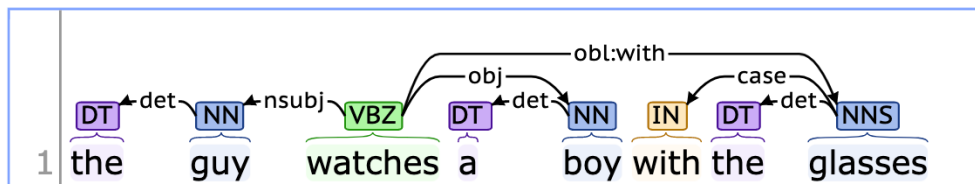
If possible, try to find examples different from the ones in the handouts.

1.1 Parse the sentences using **Freeling** and **CoreNLP**.

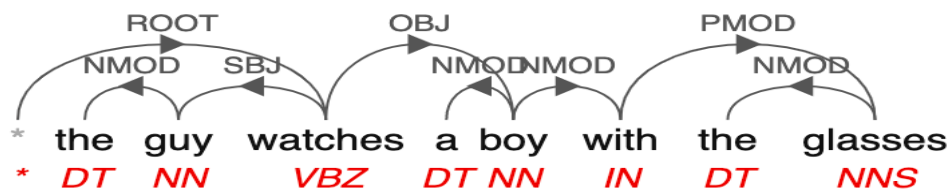
2.2. Explain how the ambiguity has been resolved for each case in both parsers. Add screenshots and explain.



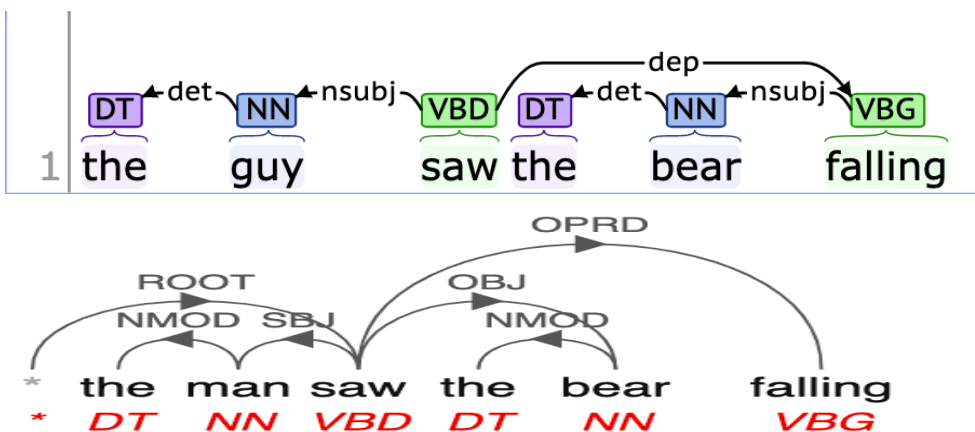
The phrase "holding the bottle" is linked to the nearest possible constituent by both parsers, it can be because the verb to talk doesn't need more complements.



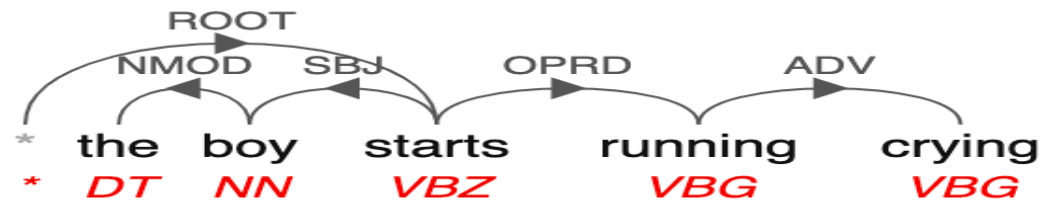
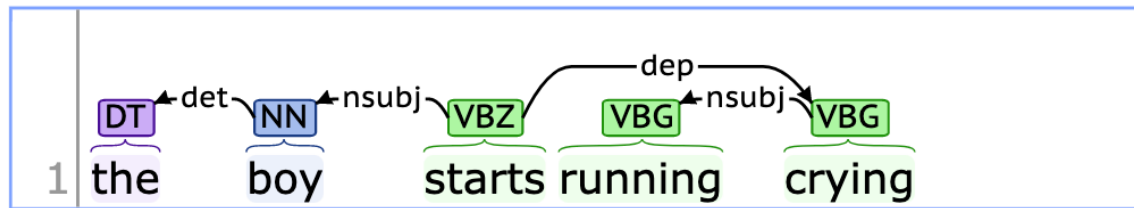
CoreNLP assumes that the verb “to watch” can regent an instrumental phrase, so that parser gives priority to the main verb to hold the complements.



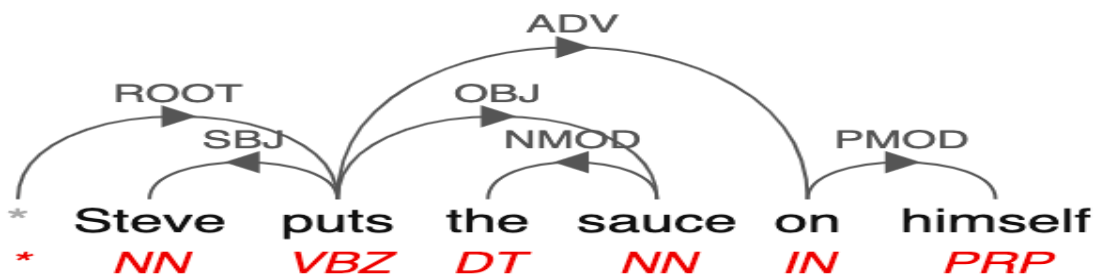
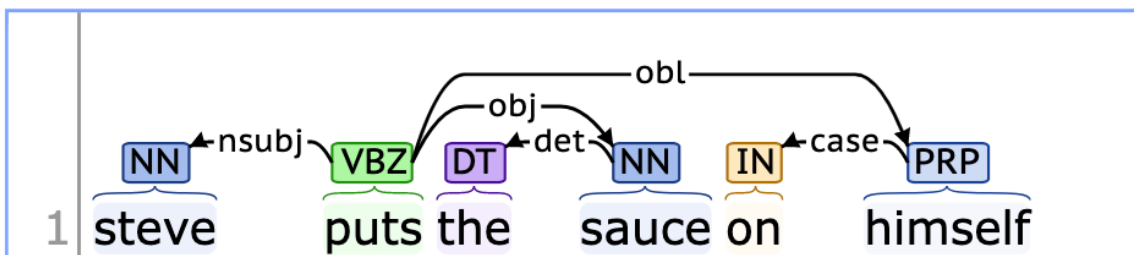
Freeling parser always gives dependencies to the nearest core that can hang it.



Both parsers assumes the “bear” is who is falling.



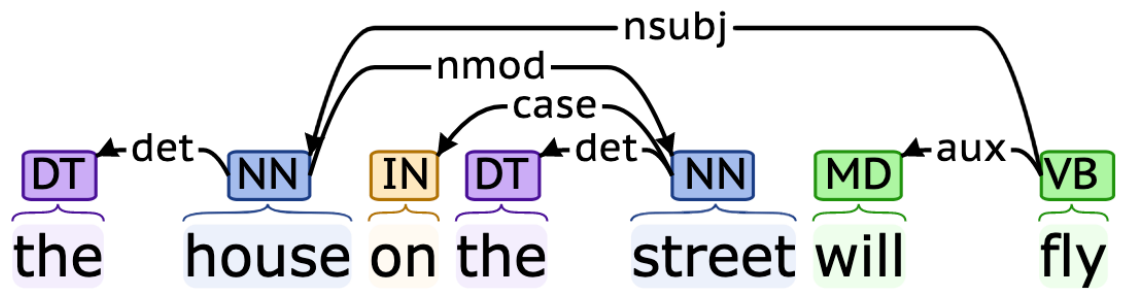
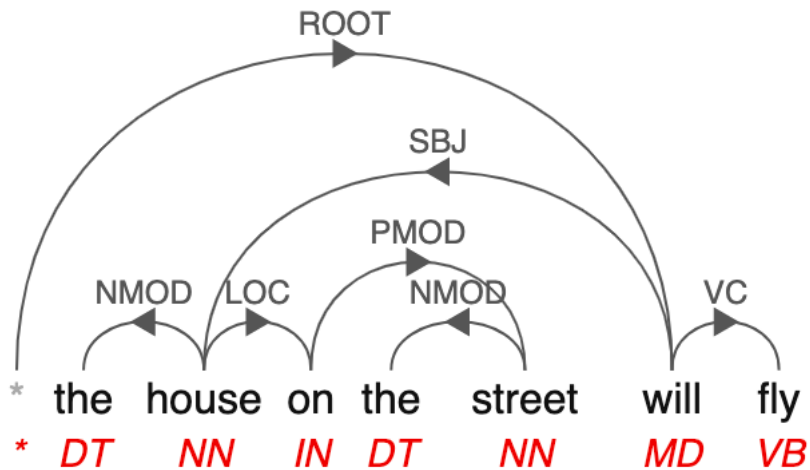
In this sentence, CoreNLP is saying that the boy starts crying when running, and Freeling, as always, is linking the complements to the nearest core.



The parsers assumes that “on” regents himself, and the verb is “to put”, and not the phrasal verb “to put on”.

2. In Universal Dependencies, the heads of the dependency relation are typically lexical words (content words).

2.1 Compare the dependency trees produced by **Freeling** and **CoreNLP** parses in the way they deal with: prepositional phrases, determiners and auxiliary verbs. Add screenshots and explain briefly.



Freeling with the prepositional phrases “on the street” stipulates that the head is the preposition “on”, while CoreNLP prefers to note that the head is the noun “street”.

Freeling makes the head the auxiliary verbs as we can see with the “will fly” example, while CoreNLP prefers to note that the head is the main verb.

With determiners both parsers agree.

2.2. Which of the two parsers best meets the universal dependencies?

CoreNLP follows the rules of Universal Dependencies.