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Class: CS 4395.001
Assignment: Sentence Parsing

Parsing a Sentence

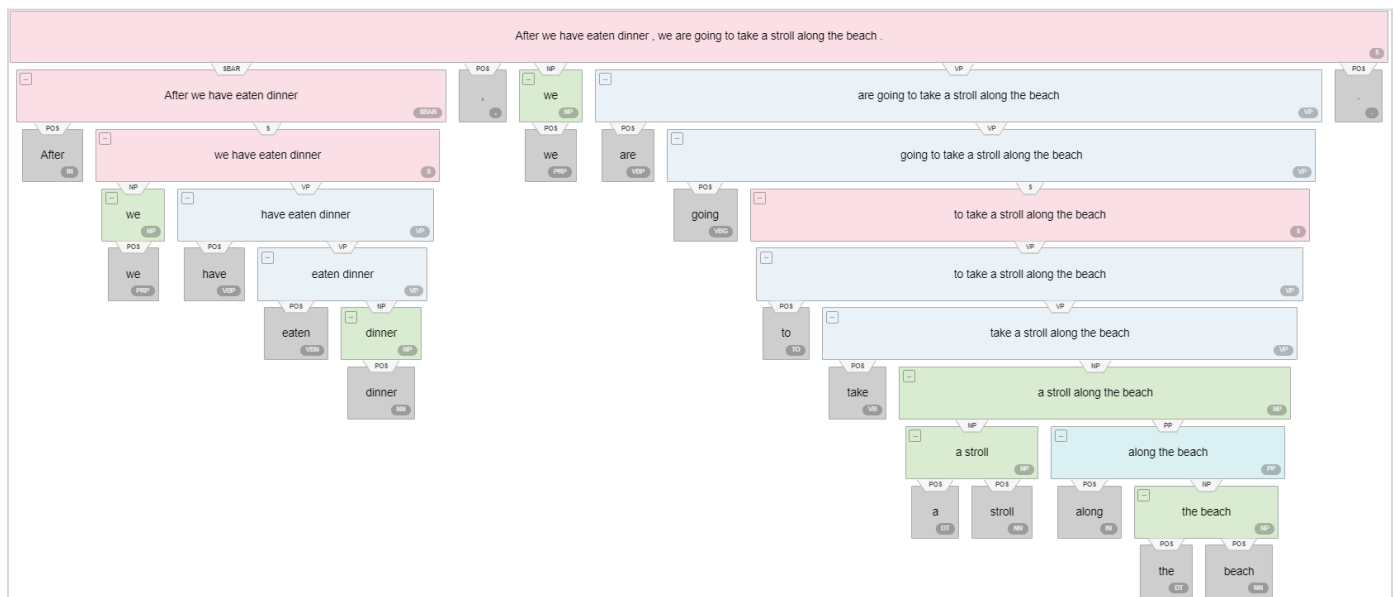
A commonly taught multi-clause sentence is:

“After we have eaten dinner, we are going to take a stroll along the beach.”

This sentence will be parsed with a PSG parser, a dependency parser, and an SRL parser.

PSG Parse

PSG (constituency) tree of the sentence produced by AllenNLP [1]:



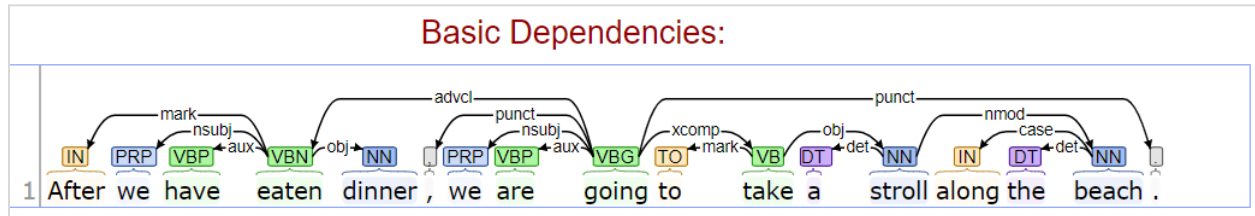
Explanations of tags used in the tree [2]:

- Clause level
 - S: Simple declarative clause, i.e. one that is not introduced by a (possible empty) subordinating conjunction or a wh-word and that does not exhibit subject-verb inversion.
 - SBAR: Clause introduced by a (possibly empty) subordinating conjunction.
- Phrase level
 - VP: Verb Phrase.
 - NP: Noun Phrase.
 - PP: Prepositional Phrase.
- Word level
 - IN: Preposition or subordinating conjunction.
 - PRP: Personal pronoun.
 - VBG: Verb, gerund or present participle.

- VCN: Verb, past participle.
- VBP: Verb, non-3rd person singular present.
- VBZ: Verb, 3rd person singular present.
- NN: Noun, singular or mass.
- DT: Determiner.

Dependency Parse

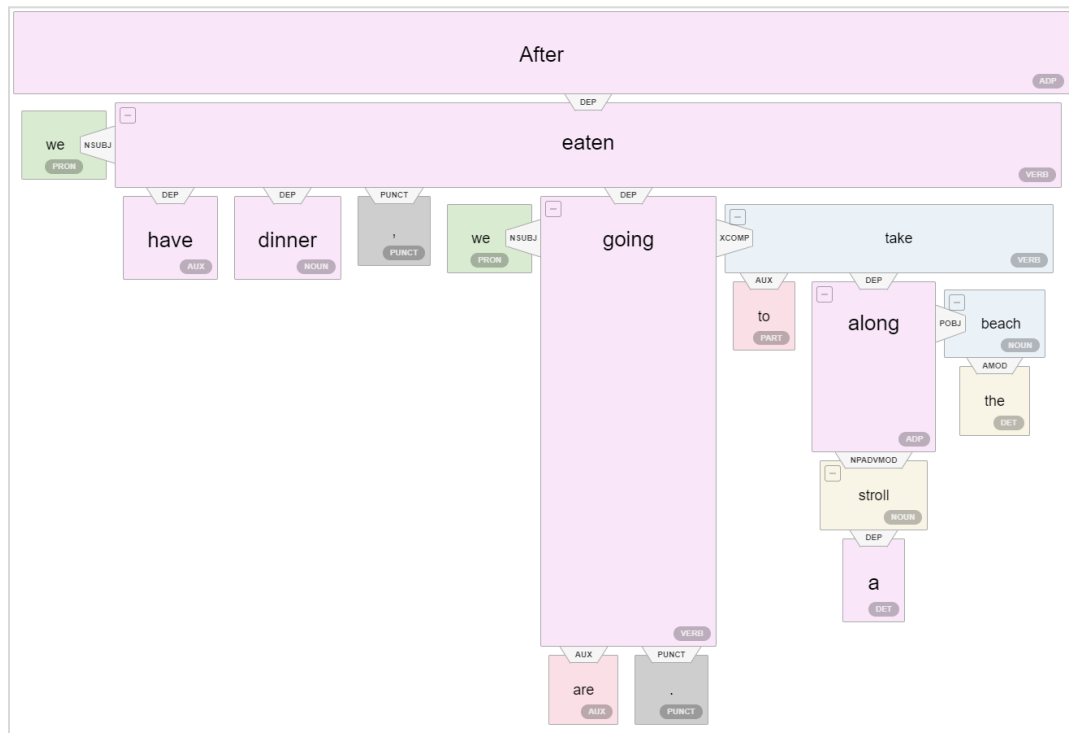
Dependency graph of the sentence produced by CoreNLP [3]:



Explanations of tags used in the graph [4]:

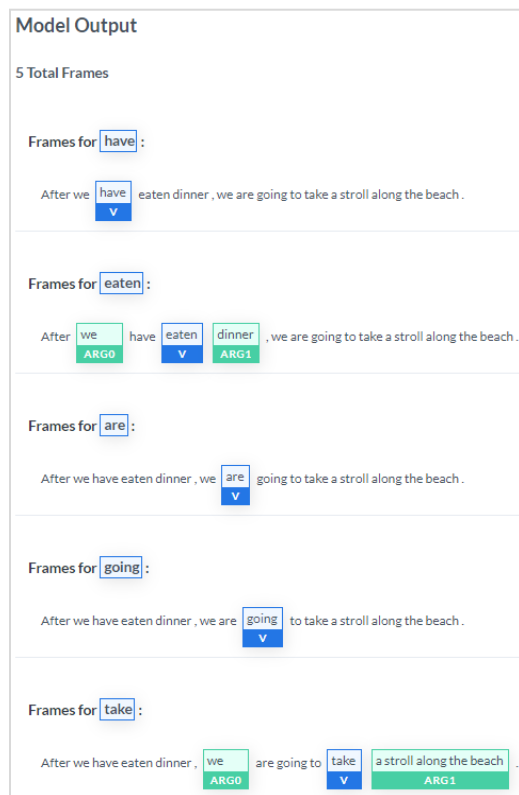
- mark: marker. A marker is the word introducing a finite clause subordinate to another clause.
- nsubj: nominal subject. A nominal subject is a noun phrase which is the syntactic subject of a clause.
- aux: auxiliary. An auxiliary of a clause is a non-main verb of the clause.
- obj: object. The object of a VP.
- advcl: adverbial clause modifier. An adverbial clause modifier of a VP or S is a clause modifying the verb.
- punct: punctuation. This is used for any piece of punctuation in a clause.
- xcomp: open clausal complement. An open clausal complement of a verb or an adjective is a predicative or clausal complement without its own subject.
- det: determiner. A determiner is the relation between the head of an NP and its determiner.
- nmod: noun modifier. A noun modifier of an NP is any noun that serves to modify the head noun.
- case: ...

Compare with the dependency tree produced by AllenNLP [5]:



SRL Parse

SRL (semantic role labeling) parse of the sentence produced by AllenNLP [6]:



Sources

- [1] <https://demo.allennlp.org/constituency-parsing/s/after-we-have-eaten-beach/K1W4T6I9D7>
- [2] <https://gist.github.com/nlothian/9240750>
- [3] <https://corenlp.run/>
- [4] https://downloads.cs.stanford.edu/nlp/software/dependencies_manual.pdf
- [5] <https://demo.allennlp.org/dependency-parsing/s/after-we-have-eaten-beach/H4S0Q8K6X6>
- [6] <https://demo.allennlp.org/semantic-role-labeling/s/after-we-have-eaten-beach/E0U1Q6F2U9>