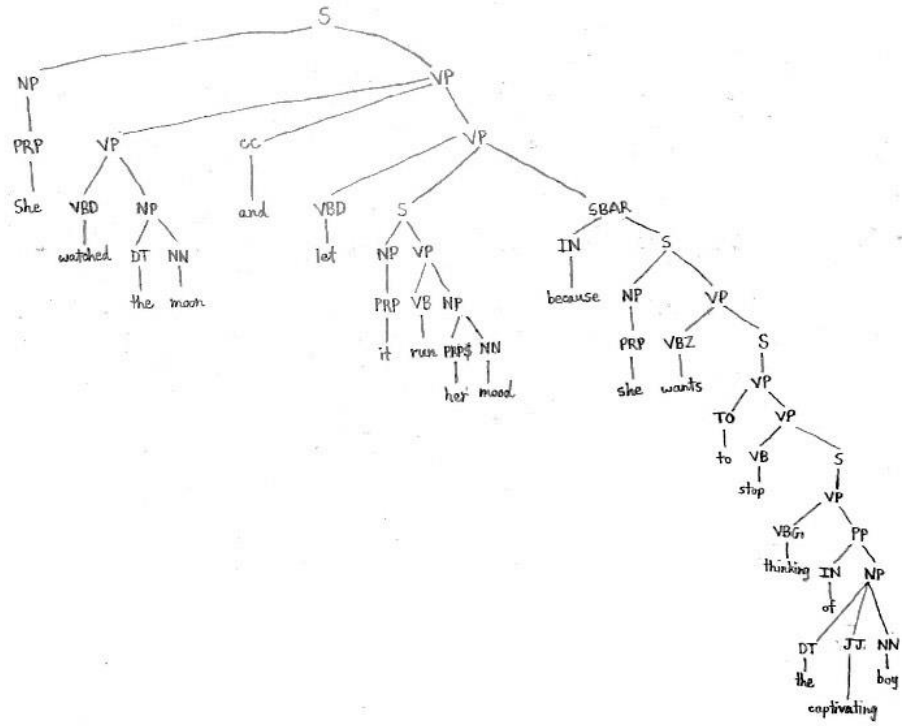
Sentence Syntax Parsing

Sentence: *She watched the moon and let it run her mood because she wants to stop thinking of the captivating boy.*

PSG Parsing

The sentence above can be visualized using the following phrase structure grammar (PSG) parse tree, with labeled parts of speech:

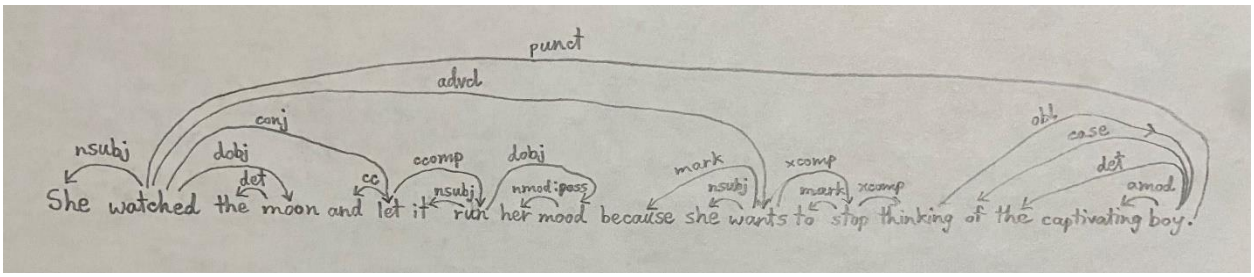


Referencing https://gist.github.com/nlothian/9240750, the table below defines all the phrase terms that appear in the tree:

Phrase Term	Meaning
S	simple declarative clause that does not start with a subordinating conjunction, which may be empty, or a wh-word and that does not exhibit subject-verb inversion
NP	noun phrase
VP	verb phrase
SBAR	subordinating conjunction, which may be empty, that starts with a clause
PP	prepositional phrase

Dependency Parsing

Below is the dependency parse of the sentence, with labeled dependency relations:



Referencing the Stanford Dependencies Manual and https://universaldependencies.org/, the table defines all dependency relations that occur in the parse:

Dependency Relation	Meaning
nsubj	nominal subject → a noun phrase which is the syntactic subject of a clause
punct	punctuation in a clause if the punctuation is being retained in the typed dependencies
advcl	adverbial clause modifier of a VP or S → a clause that modifies the verb (temporal clause, consequence, conditional clause, purpose clause, etc.)
obl	oblique → relation for a nominal (noun, pronoun, noun phrase) functioning as a non-core (oblique) argument or adjunct
conj	conjunct → the relation between two elements connected by a coordinating conjunction like “and”
case	relation used for any case-marking element which is treated as a separate syntactic word
dobj	direct object of a verb → the noun phrase which is the (accusative) object of the verb
ccomp	clausal complement of a verb or adjective → a dependent clause with an internal subject which functions like an object of the verb, or adjective
mark	marker → the word introducing a finite clause subordinate to another clause
xcomp	open clausal complement of a verb or an adjective → a predicative or clausal complement without its own subject
det	determiner → the relation between the head of an NP and its determiner
cc	coordination → the relation between an element of a conjunct and the coordinating conjunction word of the conjunct
nmod:poss	nominal modifier → occurring before its head in the specifier position used for ‘s possessives
amod	adjectival modifier of an NP → any adjectival phrase serving to modify the meaning of the NP

SRL Parsing

For the semantic role labeling (SRL) parse:

- Predicate: watched
  Arguments: **ARG0** [She] watched **ARG1** [the moon] and let it run her mood because she wants to stop thinking of the captivating boy.
  ARG0 is the agent doing the action of watching the moon, while ARG1 is the patient or passive actor that is being acted upon by the agent.
- Predicate: let
  Arguments: **ARG0** [She] watched the moon and let **ARG1** [it run her mood because she wants to stop thinking of the captivating boy].
- Predicate: run
  Arguments: She watched the moon and let **ARG0** [it] run **ARG1** [her mood] **CAU** [because she wants to stop thinking of the captivating boy].
  Modifiers: CAU modifier is the reason for action, as in the reason she watched the moon and let it run her mood.
- Predicate: wants
  Arguments: She watched the moon and let it run her mood because **ARG0** [she] wants **ARG1** [to stop thinking of the captivating boy].
- Predicate: stop
  Arguments: She watched the moon and let it run her mood because **ARG0** [she] wants to stop **ARG1** [thinking of the captivating boy].
- Predicate: thinking
  Arguments: She watched the moon and let it run her mood because **ARG0** [she] wants to stop thinking **ARG2** [of the captivating boy].
- Predicate: captivating
  Arguments: She watched the moon and let it run her mood because she wants to stop thinking of the captivating **ARG0** [boy].

Summary

A phrase structure grammar (PSG) parse, or constituent parse, broke down the sentence into a hierarchical organization of phrases, or constituents. The highest level of the hierarchy was the start symbol 'S', next-to bottom level of the hierarchy contained the parts of speech (POS), and the bottom level consisted of each token of the sentence. Dependency parsing set the relationships between head words and the corresponding words modifying the head words in the sentence. Semantic role labeling (SRL) parse was a shallow semantic parse of the sentence as it determined a role for each constituent relative to each predicate, or verb, in the sentence. As the SRL parse was able to answer basic questions about the sentence's meaning, including why she did what she did, the arguments, or actors, and modifiers that provided further details about each verb, such as reason for action, successfully parsed the sentence the best.