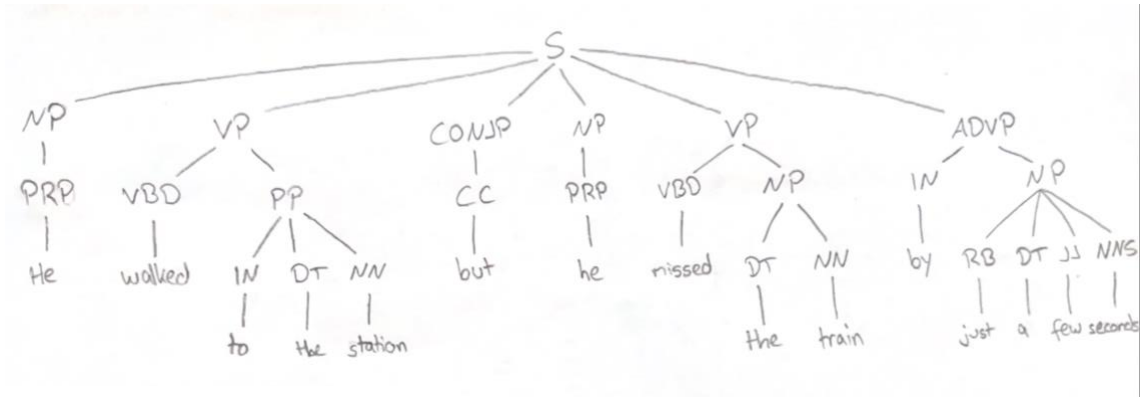
Linus Fackler

Portfolio Assignment: Sentence Parsing

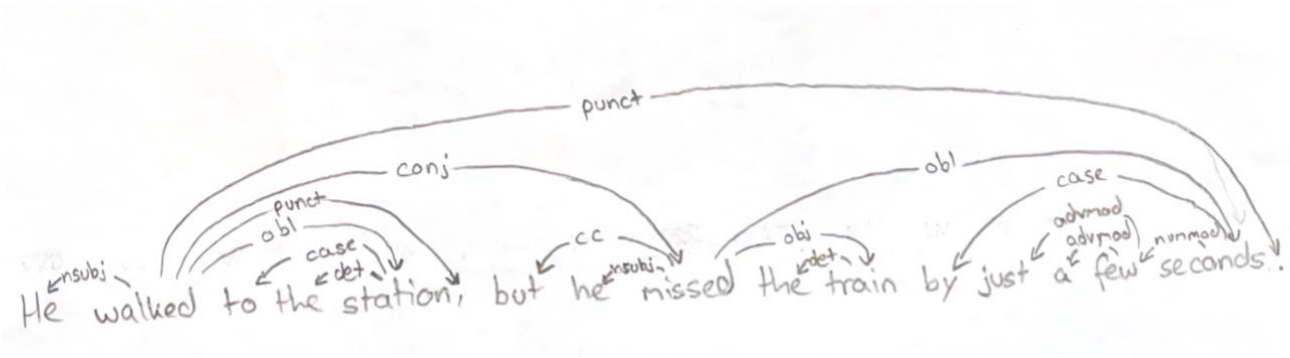
1. He walked to the station, but he missed the train by just a few seconds.

2.



S	– sentence/declarative clause
NP	– Noun Phrase
VP	– Verb Phrase
CONJP	– Conjunction Phrase
ADVP	– Adverb Phrase
PP	– Prepositional Phrase
PRP	– Personal Pronoun
VBD	– Verb, past tense
IN	– Preposition
DT	– Determiner
NN	– Noun, singular
CC	– Coordinating Conjunction
RB	– Adverb
JJ	– Adjective
NNS	– Proper noun, plural

3.



nsubj	– nominal subject
det	– determiner
case	– case marking
obl	– oblique normal
punct	– punctuation
conj	– conjuct
cc	– coordinate conunction
advmod	– adverbial modifier
nummod	– numerical modifier

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4. SLR Parse:

Predicate:

- "walked" – predicate of 1st independent clause
- "missed" – predicate of 2nd independent clause

Arguments:

Arg0: "He" – subject of both independent clauses
→ subject of verbs "walked" and "missed"
Arg2: "the station" – direct object of predicate "walked" (clause 1)
Arg2: "the train" – direct object of predicate "missed" (clause 2)

Modifiers:

- "to the station" – prepositional phrase, modifies the verb "walked"
  → expresses the destination of the walking
  → **DIR**
- "by just a few seconds" – prepositional phrase, modifies "missed"
  → expresses the manner in which the train was missed
  → **MNR**

5. PSG

The PSG is easy to understand and when generating it, not hard to identify each phrase or word. It already took a bit to parse a sentence with 2 clauses. The more clauses now, the harder it will get. In general, PSGs are computationally expensive, especially for longer/more complex sentences. It will also most likely not understand expressions and figurative language.
Although harder to understand at first, dependency parsing seems faster and more efficient, especially for larger volumes of text in a real-time application (chatbots for example). It might not capture the full complexity of the sentence structure and might be difficult for things like disjunction and phrasal verbs.
SLR parsing gives a more detailed information of the actual meaning of the sentence. Especially with regards to the roles played by different entities/actions. This makes it useful to extract information from the text. This also means that it can be computationally more expensive than other parse types, especially for large-scale datasets.