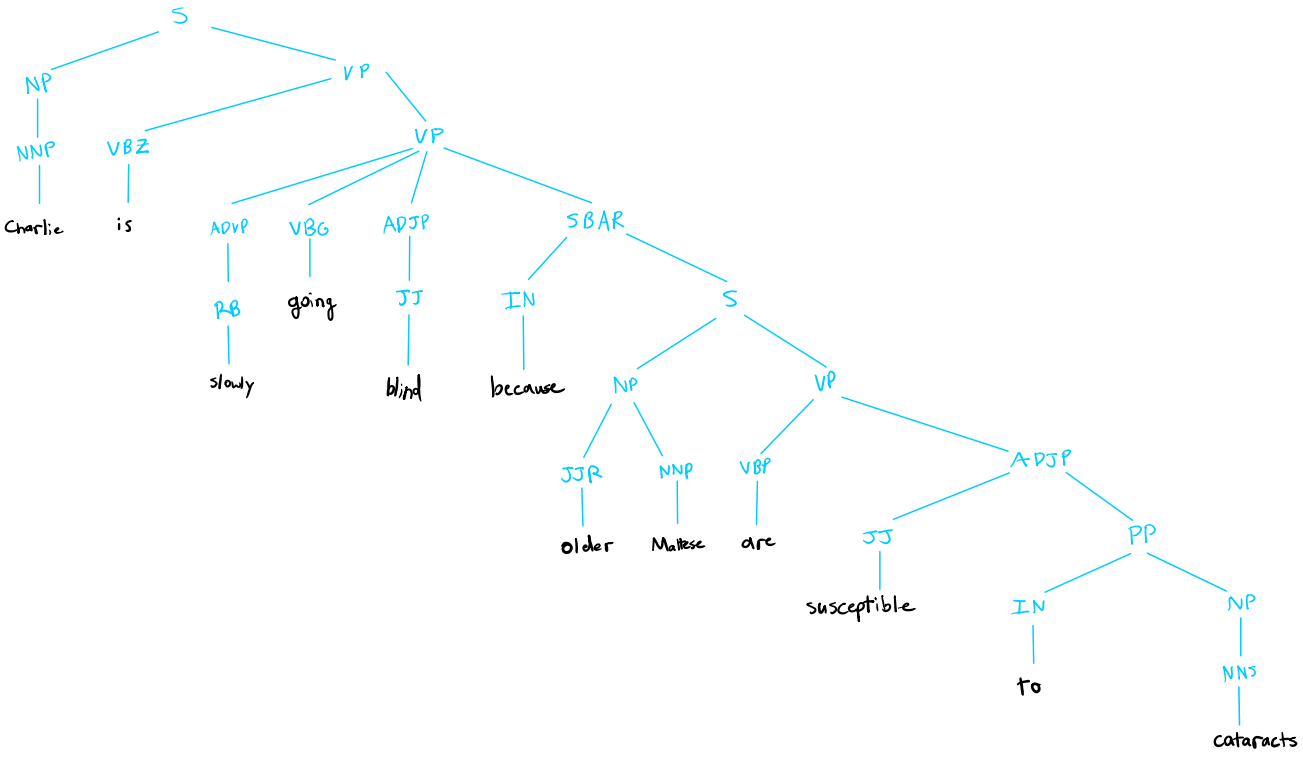
Syntax

Sunday, October 16, 2022 6:20 PM

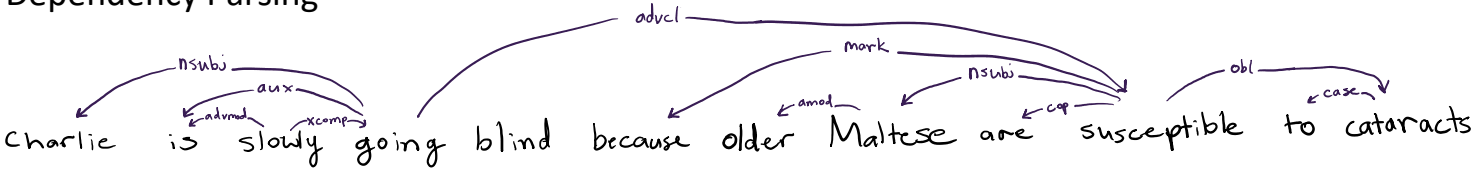
Constituency Parsing (PSG)



Clause and Phrase Level Terms

S: simple declarative clause
NP: noun phrase; AKA nominal, performs the same function as a noun
VP: verb phrase; phrase composed of a verb and its modifiers
ADVP: adverb phrase; phrase that modifies other expressions
ADJP: adjective phrase; the entirety of a phrase that acts as an adjective
SBAR: clause introduced by a (possibly empty) subordinating conjunction
PP: prepositional phrase; a phrase containing a modifying preposition and the object

Dependency Parsing



Dependency Relations:

advmod: adverb modifer; phrase that serves to modify the meaning of a word
xcomp: open clausal complement; predicative or clausal complement without its own subject
amod: adjectival modifier; any phrase serving to modify the meaning of a noun phrase (NP)
cop: copula; relation between the complement of a copular verb and the copular verb
case: elements marked to indicate dependency to some noun or clause they're attached to
aux: auxiliary; a non-main verb of the clause

nsubj: nominal subject; noun phrase that is the subject of a clause
obl: oblique nominal; relation used for a nominal that functions as a non-core argument
mark: marker; used to introduce a finite clause subordinate to another clause
advcl: adverbial clause modifier; a clause that modifies the verb

Semantic Role Labeling (SRL)

Charlie is slowly going blind because older Maltese are susceptible to cataracts.

Predicate: 'going blind'

Args for 'is':
None

Args for 'going':
1: 'Charlie'
2: 'blind'

Notes:
Arg2, 'blind', plays the thematic role of the 'instrument' used on Arg1, 'Charlie', the 'patient'. In this case, the verb 'going' is used to dictate how 'Charlie' is affected.

MNR represents how the action was performed, and in this case, the action was performed 'slowly'. CAU represents the reason for the action, and in this case, the action was 'because older Maltese are susceptible to cataracts'.

Args for 'are':
1: 'older Maltese'
2: 'susceptible to cataracts'

Notes:
Arg2, 'susceptible to cataracts', plays the thematic role of the 'instrument' used on Arg1, 'older Maltese', the 'patient'. In this case, the verb 'are' is used to convey how 'older Maltese' are affected.

PSG vs. Dependency Parsing vs. SRL

While all of the different sentence parsers succeed in providing a greater understanding of the sentence that I created, each one of them individually shine and struggle in certain unique aspects.

Phrase structure trees are comprehensive, full detailed, trees that break down every word into its POS. This may be useful in visually determining how the sentence came to be constructed, but it may seem confusing the reasoning behind the given structure of the tree. That is where dependency parsing comes in, which simplifies the visualization of purpose and reasoning behind sentence structure. Dependency parsing helps visualize only the relations between phrases and words. We could go further, however, and say that dependency parsing leaves much to be desired, and that semantic role labeling helps break down the concept and analysis further. SRL uses verbs in the sentence as roots for determining relevant 'actors' in the clause attached to the verb. This is useful for seeing how certain words or phrases modify and affect objects and determining what kind of context the modifiers and objects are in. Where SRL struggles is in identifying the individual POS for each word.

Given all three types of parsing, I believe all have their own use cases, and I will need to utilize different parsers under different circumstances.