

Assumption: in class, the professor mentioned that we could use digital tools to draw the stuff in this assignment. As such, I assumed it was ok for me to use LucidChart to make the diagrams. I still handmade the diagrams, just using the digital tool so that they would be pretty and easily readable.

Here is the link to the LucidChart document:

https://lucid.app/lucidchart/7a107bc8-6c45-4900-94c6-d65947a7de06/edit?viewport_loc=-85%2C-277%2C2481%2C1757%2C0_0&invitationId=inv_5daed903-7ef1-4005-9c17-f9b6a88877cd

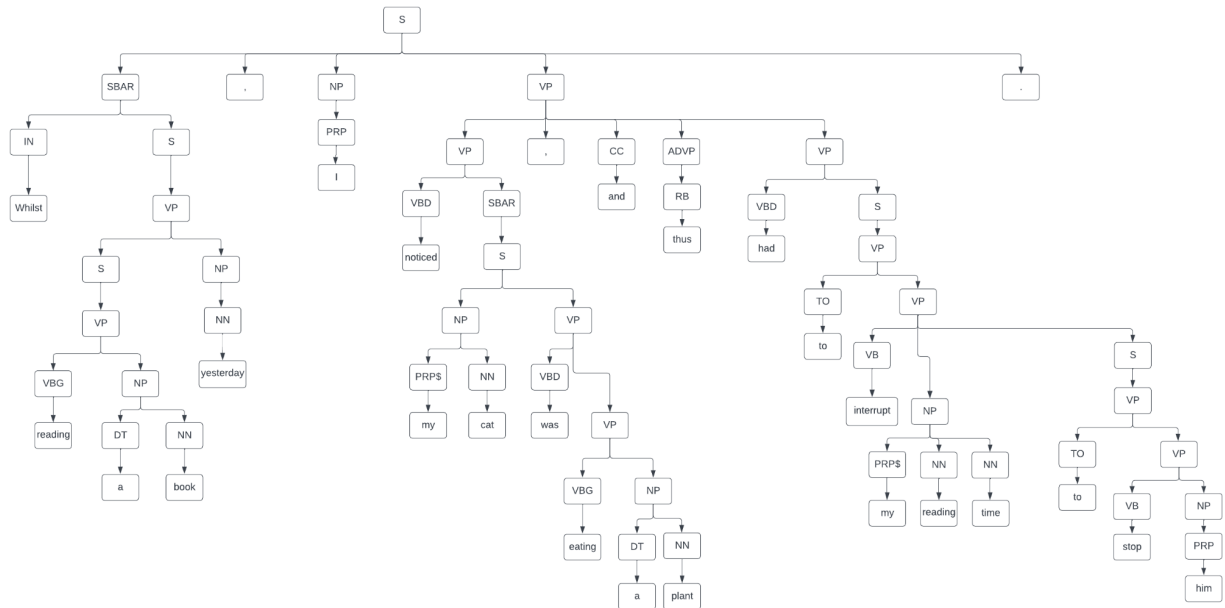
[1]

My sentence is the following:

“Whilst reading a book yesterday, I noticed my cat was eating a plant, and thus had to interrupt my reading time to stop him.”

[2] PSG

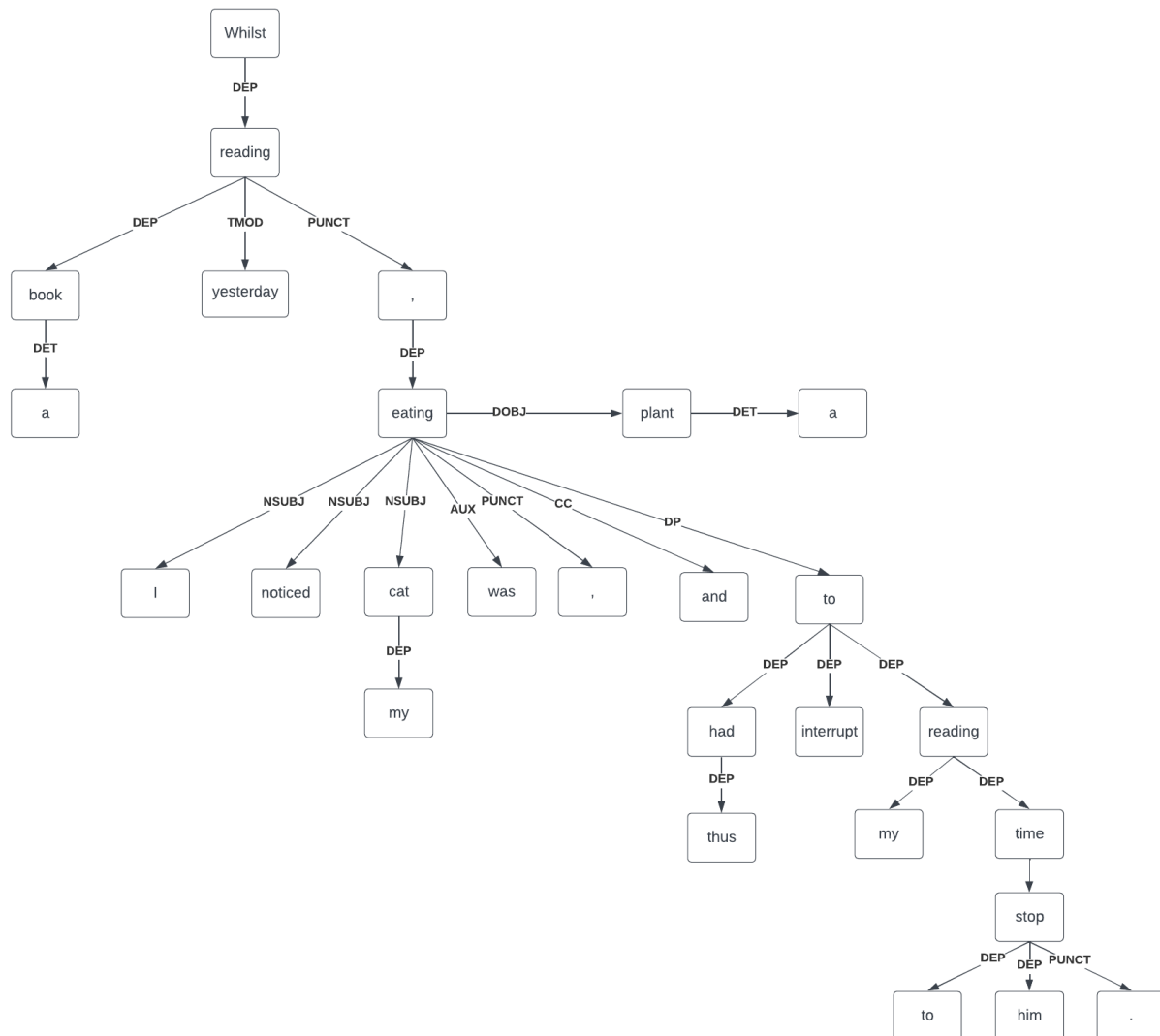
Here is the PSG tree:



Brief definition of terms that appear:

- S: simple declarative clause [1]
- SBAR: clause introduced by a subordinating conjunction [1]
- IN: preposition or subordinating conjunction [1]
- VP: verb phrase
- VBG: verb, gerund or present participle [1]
- NP: noun phrase
- DT: determiner
- NN: noun, singular or mass [1]
- PRP: personal pronoun [1]
- VBD: verb, past tense [1]
- PRP\$: possessive pronoun [1]
- CC: coordinating conjunction [1]
- ADVP: adverb phrase [1]
- RB: adverb [1]
- TO: to [1]
- VB: verb, base form [1]

[3] Dependency Parse



Brief definition of relations that appear:

- DEP: dependent (when unable to determine a more precise relation) [2]
- DET: determiner relation [2]
- TMOD: temporal modifier [2]
- NSUBJ: nominal subject [2]
- DOBJ: direct object [2]
- AUX: auxiliary (non-main verb of the clause) [2]
- PUNCT: punctuation [2]
- CC: coordination [2]

[4] SRL Parse

Sentence: "Whilst reading a book yesterday, I noticed my cat was eating a plant, and thus had to interrupt my reading time to stop him."

7 verbs total

Verb 1: reading

ARG1: a book (the passive actor/patient that is being read)

ARGM-TMP: yesterday (temporal modifier)

ARG0: I (agent of that is doing the reading)

Verb 2: noticed

ARM-TMP: Whilst reading a book yesterday (temporal modifier)

ARG0: I (agent that noticed something)

ARG1: my cat eating the plant (passive actor that was noticed)

Verb 3: was

No arguments or modifiers since this is an auxiliary verb to 'eating'

Verb 4: eating

ARG0: my cat (agent that is doing the eating)

ARG1: a plant (passive actor that is being eaten)

Verb 5: had

No arguments or modifiers since this is an auxiliary verb to 'interrupt'

Verb 6: interrupt

ARG0: I (agent that is doing the interrupting)

ARG1: my reading time (patient that is being interrupted)

ARGM-PRP: to stop him (purpose modifier)

Verb 7: stop

ARG0: I (agent that is doing the stopping)

ARG1: him (passive actor that is being stopped)

[5] Pros and Cons of each Parse in my opinion

In my opinion, SRL parse has the advantage that it gets into a shallow level of semantics, and thus could be really useful for an NLP application to get the meaning of a sentence. The weakness that I think SRL parse has is that it does not identify POS and it does not create a comprehensive model of the relationships between the different clauses and constituents of a sentence.

Dependency parse has the advantage that it identifies those relationships between the different parts of the sentence and creates a tree structure that can be used to identify the dependencies in the sentence. It does have the disadvantage of dependency parsing is that it can be ambiguous when a sentence has multiple interpretations, and it sometimes does not identify which type of dependency exists between constituents of a sentence.

One advantage of the Phrase Structure Grammar Parse (PSG) is that it very neatly identifies all the sub-phrases of a sentence and their types. It generates a useful tree structure that gives a lot of insight into the construction of the sentence from the different clauses that make it up. One disadvantage of PSG is that it does not offer much insight into semantics as it mainly focuses on the syntax.

References

[1]

262588213843476. (n.d.). *Penn Treebank II tags*. Gist. Retrieved March 4, 2023, from <https://gist.github.com/nlothian/9240750>

[2]

Stanford Natural Language Processing Group. (2014). Dependencies Manual. Retrieved from https://downloads.cs.stanford.edu/nlp/software/dependencies_manual.pdf