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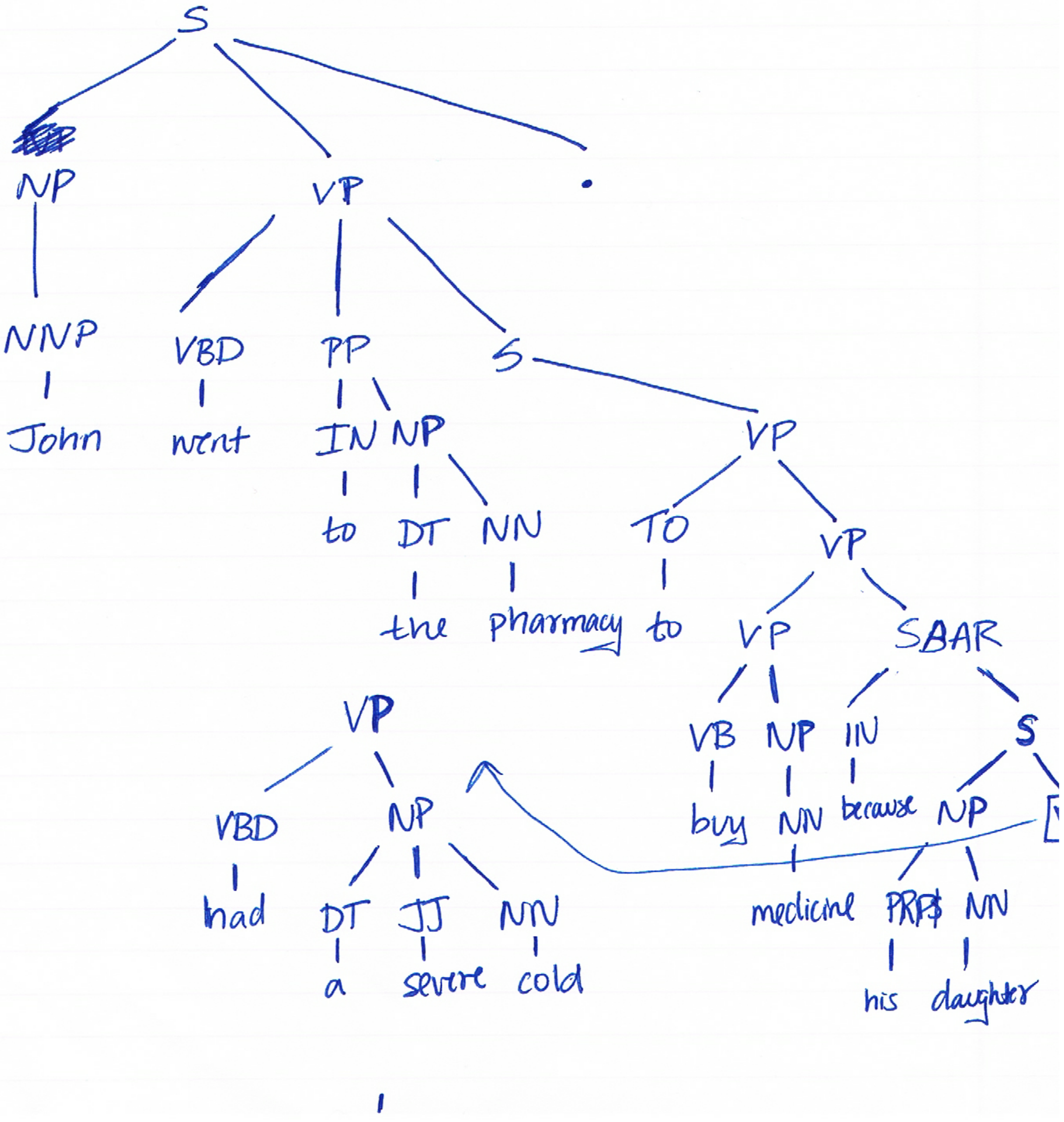
CS 6301.M02

Portfolio Component Sentence Parsing

1.7 John went to the pharmacy to buy medicine because his daughter [redacted] had a severe cold.

2.7 PSG tree



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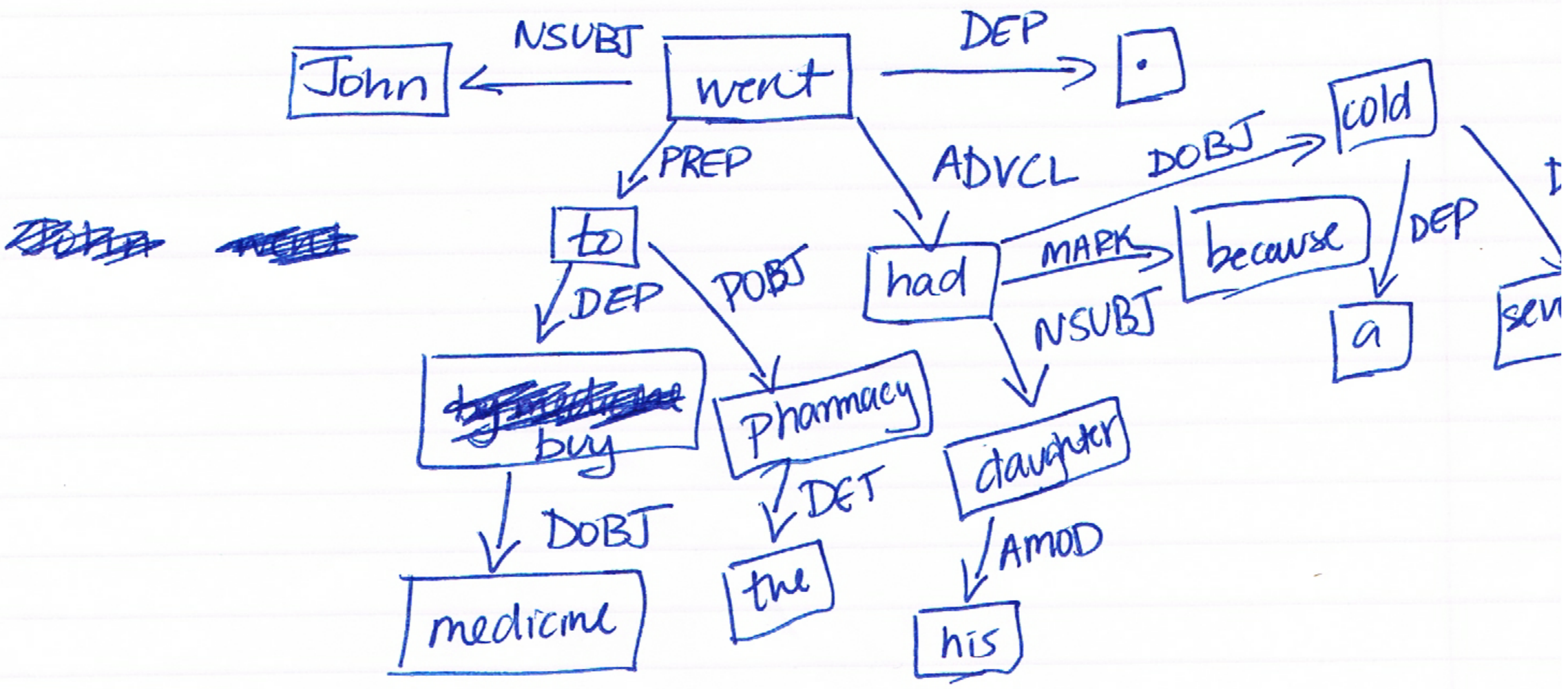
S- simple declarative clause.
NP- noun phrase.
VP- verb phrase.
NNP- singular proper noun.
VBD- past tense verb.
PP- prepositional phrase.
IN- preposition / subordinating conjunction.
DT- determiner.
NN- singular/uncountable noun
TO- to
SBAR- clause that starts with a subordinating conjunction.
VB- verb in base form.
PRP$- possessive pronoun.
JJ- adjective.

3. Dependency Parse



NSUBJ- (nominal subject) a noun phrase that is the syntactic subject of a clause.

DEP- (dependent) label indicating that precise dependency relation cannot be determined.

PREP - (prepositional modifier) a prepositional phrase that serves to modify the meaning of the verb/ adjective/ noun/ another preposition.

ADVCL - (adverbial clause modifier) a clause modifying the verb.

DOBJ - (direct object) the noun phrase that is the object of the verb in verb phrase.

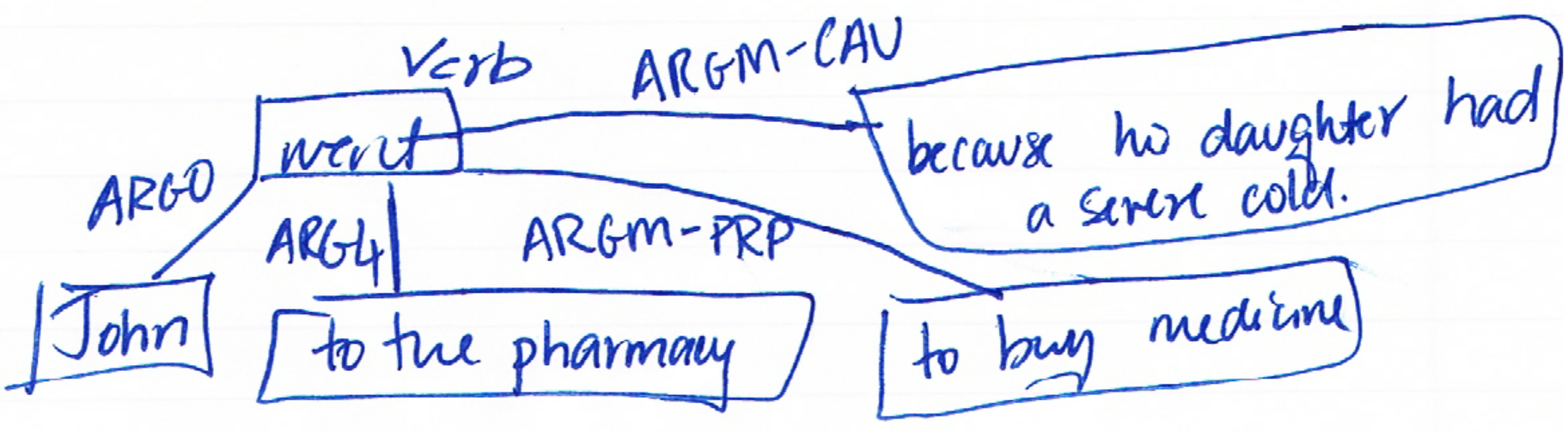
POBJ - (object of a preposition) head of a noun phrase following the preposition or the adverbs "here" and "there".

MARK - (marker) word introducing a finite clause subordinate to another clause.

AMOD - (adjective modifier) any adjectival phrase that serves to modify the meaning of the noun phrase.

4. SRL parse

1.) went



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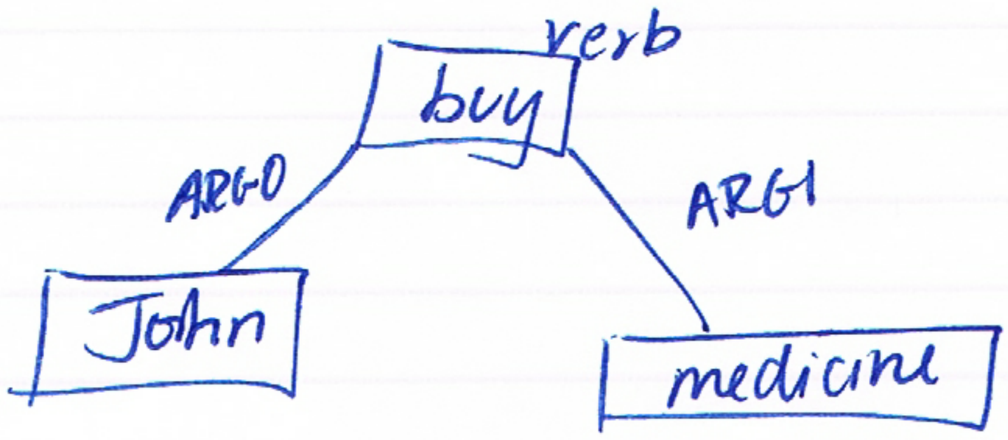
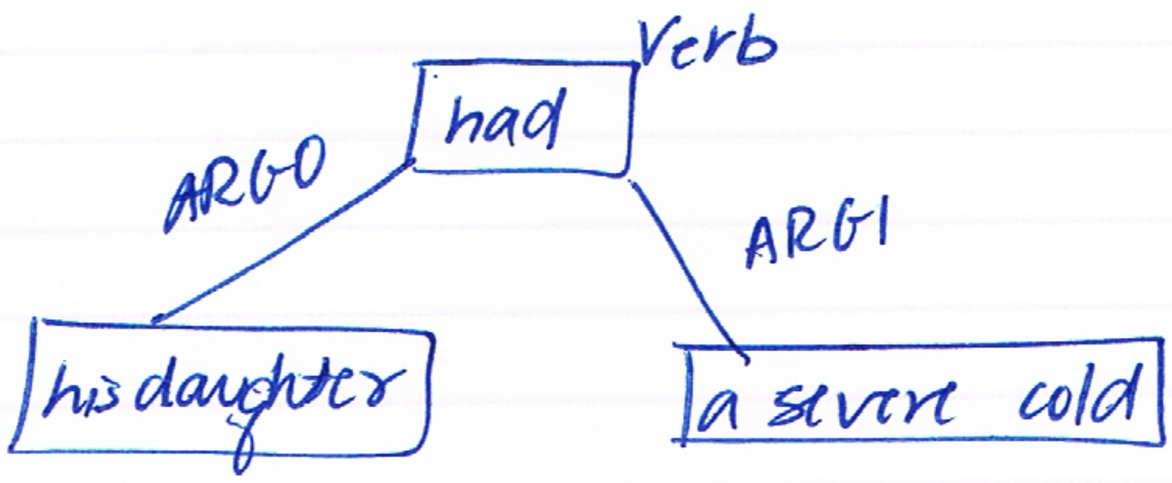
- ARG0 - (Argument 0) one doing the action.
- ARG4 - (Argument 4) the end product of an event.
- ARGM-PRP - (Argument modifier - purpose) purpose of the action.
- ARGM-CAU - (Argument modifier - cause) purpose of the action.

2.) buy



- ARG0 - (Argument 0) one doing the action
- ARG1 - (Argument 1) one being acted upon.

3.) had



- ARG0 - (Argument 0) one doing the action
- ARG1 - (Argument 1) one being acted upon

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5. Pros of PSG parse are that it breaks a sentence into a hierarchy of phrases while labeling POS for each phrase down to the bottom level and is recursive. Cons of PSG parse is that a user cannot gauge the relationship between the verb phrase to a noun phrase or sentence. Dependency parse identifies the main verb and provides relationships between each word with each other in a hierarchical fashion, but is complicated to use and relationships are too low-level. SRL parse identifies the role of sentence phrase relative to each verb, the roles it provides is very high-level and clear to the user, but it looks like it has trouble identifying the main verb. To me, SRL parse is the closest to natural language parsing due to its clearly defined roles it provides for each verb, but ideally using one or more parsing techniques plus other NLP techniques would make more sense when attempting natural language parsing.

References

[1] The Allen Institute for Artificial Intelligence, "AllenNLP Demo," demo.allennlp.org. https://demo.allennlp.org