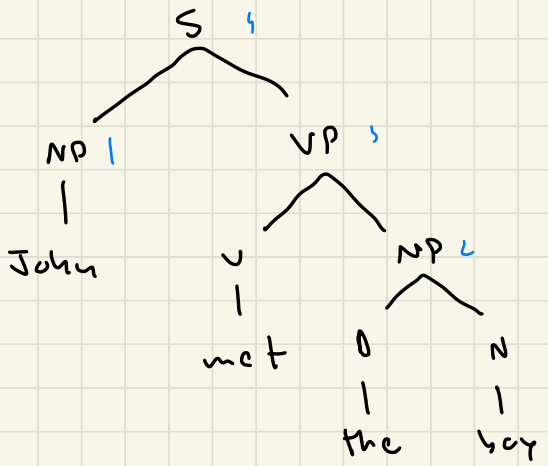
2.2 C

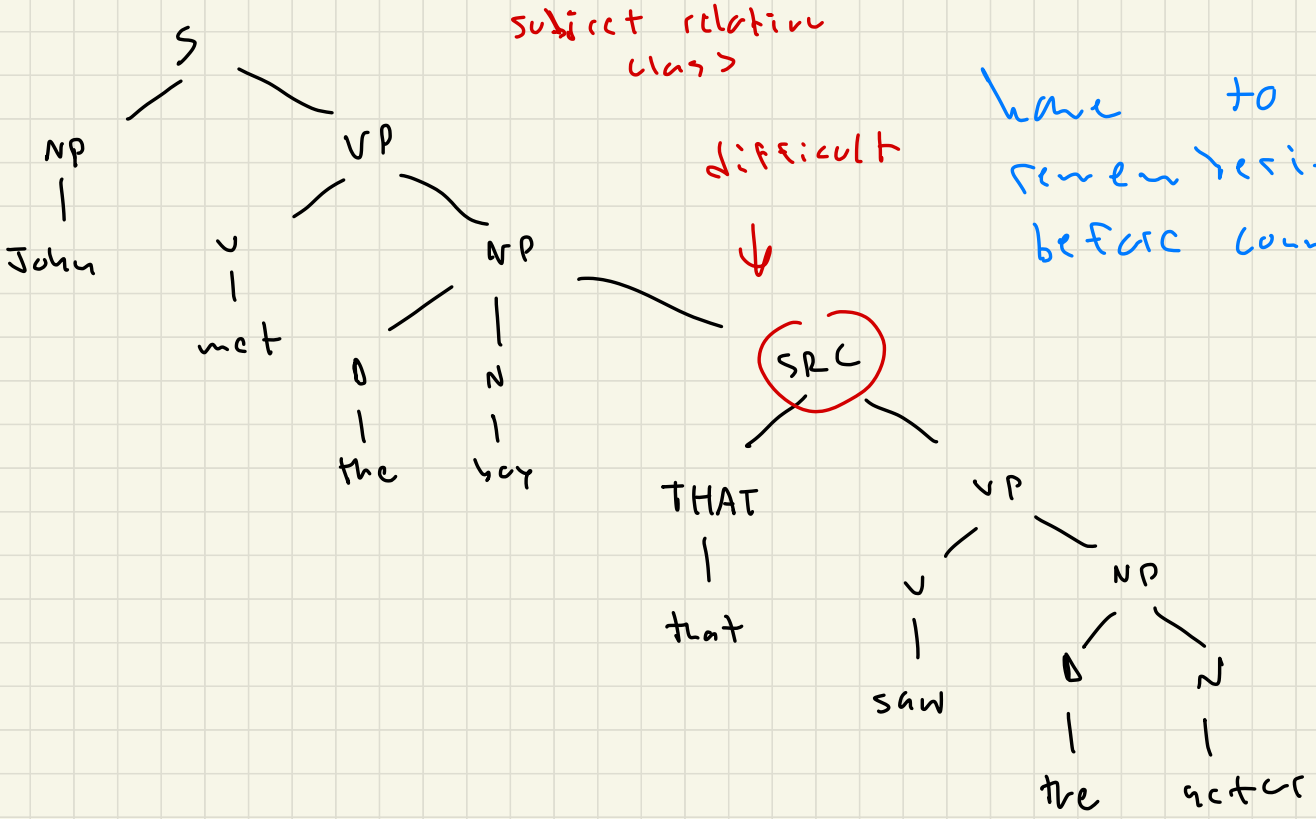
This vowel pattern is not local as the vowel harmony constraint applies over an entire morpheme which means the morpheme must keep track of vowels early on in the morpheme and compare them to ones at the end of the morpheme until it encounters a morpheme boundary. In this case, we are simply not checking adjacent symbols (vowels).

John met the boy



scratch work for 3.2 A

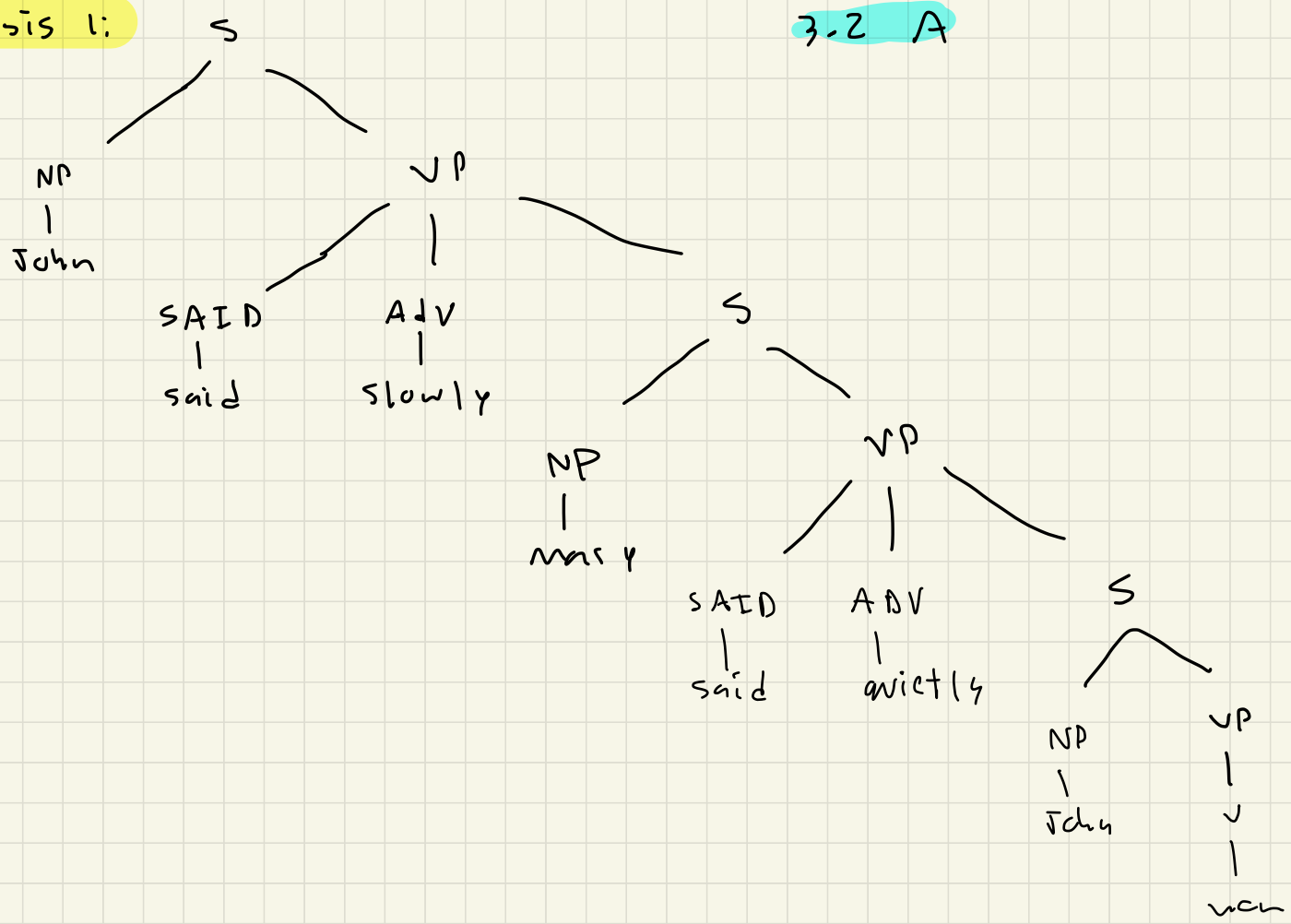
John met the boy that saw the actor



have to keep remembering before continuing

Hypothesis 1:

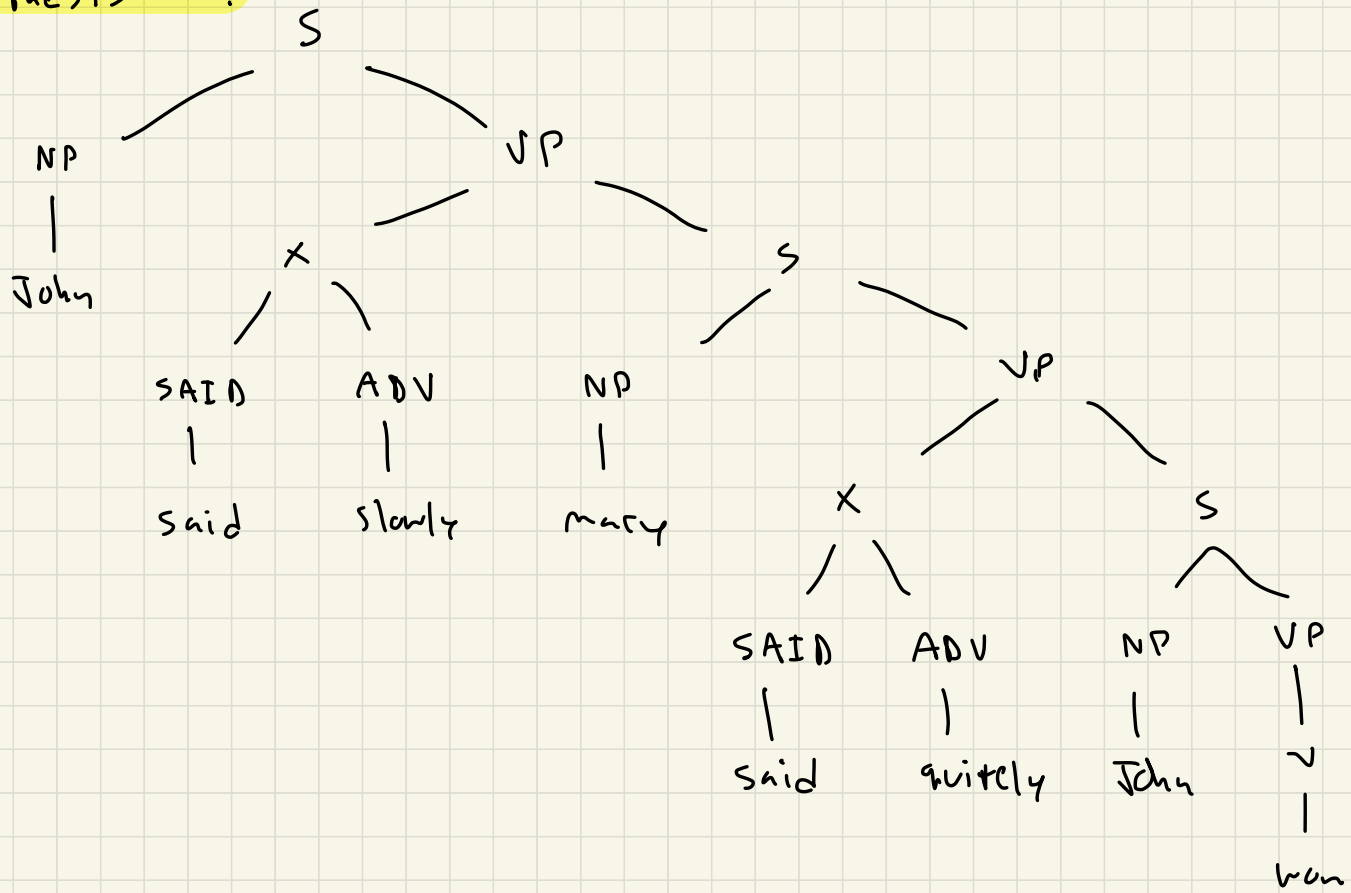
3.2 A



Hypothesis 1:

	Type of transition	Rule used	Configuration
0	——	——	(ε, John said slowly Mary said quietly John won)
1	Shift	NP → John	(NP, said slowly Mary said quietly John won)
2	Shift	SAID → said	(NP SAID, slowly Mary said quietly John won)
3	Shift	ADV → slowly	(NP SAID ADV, Mary said quietly John won)
4	Shift	NP → Mary	(NP SAID ADV NP, said quietly John won)
5	Shift	SAID → said	(NP SAID ADV NP SAID, quietly John won)
6	Shift	ADV → quietly	(NP SAID ADV NP SAID ADV, John won)
7	Shift	NP → John	(NP SAID ADV NP SAID ADV NP, won)
8	Shift	V → won	(NP SAID ADV NP SAID ADV NP V, ε)
9	reduce	VP → V	(NP SAID ADV NP SAID ADV NP VP, ε)
10	reduce	S → NP VP	(NP SAID ADV NP SAID ADV S, ε)
11	reduce	VP → SAID Adv S	(NP SAID ADV NP VP, ε)
12	reduce	S → NP VP	(NP SAID ADV S, ε)
13	reduce	VP → SAID Adv S	(NP VP, ε)
14	reduce	S → NP VP	(S, ε)

Hypothesis 2:



Hypothesis 2:

	Type of transition	Rule used	Configuration
0	——	——	(ϵ, John said slowly Mary said quietly John won)
1	Shift	NP → John	(NP, said slowly Mary said quietly John won)
2	Shift	SAID → said	(NP SAID, slowly Mary said quietly John won)
3	Shift	ADV → slowly	(NP SAID ADV, Mary said quietly John won)
4	reduce	X → SAID ADV	(NP X, Mary said quietly John won)
5	Shift	NP → Mary	(NP X NP, said quietly John won)
6	Shift	SAID → said	(NP X NP SAID, quietly John won)
7	Shift	ADV → quietly	(NP X NP SAID ADV, John won)
8	reduce	X → SAID ADV	(NP X NP X, John won)
9	Shift	NP → John	(NP X NP X NP, won)
10	Shift	V → won	(NP X NP X NP V, ϵ)
11	Reduce	VP → V	(NP X NP X NP VP, ϵ)
12	Reduce	S → NP VP	(NP X NP X S, ϵ)
13	Reduce	VP → X S	(NP X NP VP, ϵ)
14	Reduce	S → NP VP	(NP X S, ϵ)
15	Reduce	VP → X S	(NP VP, ϵ)
16	Reduce	S → NP VP	(S, ϵ)

3.2 B

Considering that we are told these Martians have memory limitations, we notice that hypothesis #1 does not reduce the structure until the whole sentence has been analyzed (in memory). This is an issue as Martians would have to remember the entire sentence before reducing the structure. In contrast, hypothesis #2 allows for parts of the sentence to be reduced earlier with the rule X → SAID ADV. For this reason, it makes sense to choose Hypothesis #2 as it has better parsing efficiency when analyzing those sentences with multiple embeddings such as sentence 2B. Sentence 2B consists of an SRC (embedded clause) which is what causes Martians to encounter difficulty versus a sentence like 2A which does not contain an embedded clause.

4.2

After trying to modify G3 so that the Martian NPI licensing constraint is satisfied, I would say this is impossible. To explain, it would be difficult to keep track of the number of licensors and licensees. We are told that as an example, 25 of each can be accepted which would be difficult to account for in a tree like (14). If we were to have 24 licensors and 25 licensees with a tree setup like (14) it would be difficult to know if we matched the correct number of licensors and licensees once we have reached the tree's root. Since the number of licensors and licensees is not restricted, it would be impossible to know the number of states and transitions needed to make this work.
Furthermore, an idea I had in mind that would possibly make this work is assigning each licensor a specific licensee. This would mean we can say ‘anybody’ is NEG1 and ‘not’ is LIC1. Also ‘ever’ is NEG2 and ‘nobody’ is LIC2. However, after trying to apply this idea to trees (12) and (13), I noticed that the licensor ‘not’ can be assigned the licensor ‘anybody’ like in tree (12) or ‘ever’ like in tree ‘13’. Since we are told Martians would mark these as well-formed trees this idea would not work. For these reasons, I would say it is not possible to modify G3 to make this Martian constraint work.