Exercise 5 (Due by June 13)

Give the tree sets of two non-local MCTAGs that derive the following sentences. Try to give a linguistically sound analysis, and say why it is sound, and why it is non-local (if that is the case). You do not have to use features! As always, also provide the derivation tree and the derived tree.

1. Extraction out of a complex NP:

   (1) [Which painting], did you see a picture of ____? 

   Solution:

   Derivation tree:

   ```
   S
   /\ 
  AUX did NP↓ S VP NP↓ 
     /\  
    V see  NP↓ 
           /\ 
          NP↓ a picture 
         /\  
        NP↓ you 
       /\  
      NP* PP 
     /\ 
    P of NP↓ 
   /\ 
  NP  
   /\ 
  S*  
   /\ 
 S  
   /\ 
 NP↓  
   /\ 
  which painting  
   /\  
   NP↓ NP  
   /\  
    `  
```

   Derived tree:

   ```
   S
   /\ 
  NP↓ which painting 
    /\  
   AUX did NP↓ S VP NP↓ 
     /\  
    V see  NP↓ 
           /\ 
          NP↓ a picture 
         /\  
        NP↓ you 
       /\  
      NP* PP 
     /\ 
    P of NP↓ 
   /\ 
  NP  
   /\ 
  S*  
   /\ 
 S  
   /\ 
 NP↓  
   /\ 
  which painting  
   /\  
   NP↓ NP  
   /\  
    `  
```
Sound: (1) common, uniform analysis (NPs are initial trees, PPs are auxiliary trees); (2) NPs and PPs make up separate elementary trees (smaller grammar).
Strictly non-local: the trees of the tree set consisting of the wh-moved constituent and its trace attach to different elementary trees.

2. Extrapolation of a relative clause:

(2) Somebody lives nearby [who has a CD burner].

Solution:

\[
\begin{array}{c}
S \\
NP \\
VP \\
\text{somebody} \\
lives \\
\end{array}
\quad
\begin{array}{c}
S \\
NP \\
S_{REL} \\
\text{who...CD-burner} \\
\end{array}
\quad
\begin{array}{c}
S \\
NP \\
\epsilon \\
\end{array}
\]

Derived tree:

\[
\begin{array}{c}
S \\
NP \\
VP \\
\text{somebody} \\
lives \\
\end{array}
\quad
\begin{array}{c}
S_{REL} \\
\text{who...CD-burner} \\
\end{array}
\]

Derivation tree:

\[
\begin{array}{c}
lives \\
\text{somebody} \\
\end{array}
\quad
\begin{array}{c}
S_{REL} \\
\text{who...CD-burner} \\
\end{array}
\]

Sound: (1) no extra structure (except what is needed for binary trees obeying the co-occurrence constraint); (2) accounts for embedded antecedents.
Strictly non-local: the relative clause and the antecedent marker, that make up a tree set, attach to different trees.