

# Transfer Example

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## 1 The Input

In a hole in the ground there lived a Hobbit.

This reaches transfer as

```
^In<pr>/En<pr>$ ^a<det><ind><sg>/uno<det><ind><GD><sg>$ ^hole<n><sg>/agujero<n><m><sg>$  
^in<pr>/en<pr>$ ^the<det><def><sp>/el<det><def><GD><ND>$ ^ground<n><sg>/tierra<n><f><sg>$  
^there<adv>/allí<adv>$ ^live<vblex><past>/vivir<vblex><past>$  
^a<det><ind><sg>/uno<det><ind><GD><sg>$ ^Hobbit<n><sg>/Hobbit<n><m><sg>$  
^.<sent>/.<sent>$^.<sent>/.<sent>$
```

## 2 The Rules

```
gender = m f;
number = (ND sg) sg pl ND;
definite = def ind;
tense = past pres ifi;
person = (PD p3) p1 p2 p3 PD;
```

```
tense > tense : past ifi;
```

```
n: _.gender.number;
det: _.definite.gender.number;
pr: _;
vblex: _.tense.person.number;
adv: _;
```

```
NP: _.gender.number;
DP: _.gender.number;
PP: _;
VP: _.tense.person.number;
```

```
NP -> %n { 1 } |
      10: %n PP { 1 _1 2 } ;
```

```
PP -> pr DP { 1 _1 2 } ;
```

```
DP -> det %NP { 1(gender=2.gender, number=2.number) _1 2 } ;
```

```
VP -> %vblex DP { 1(tense=$tense, person=$person, number=$number) _1 2 } |
      adv %VP (if (1.lem/sl = there)
                { %2 }
                else
                { 1 _1 %2 } ) |
      PP %VP { 1 _1 %2 } ;
```

### 3 The Parsing

#### 3.1 Read Some Input

<b>In</b>	<b>a</b>	<b>hole</b>
pr	det.ind.sg	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>
pr	det.ind.GD.sg	n.m.sg

#### 3.2 Fork the Stack

<b>In</b>	<b>a</b>	<b>hole</b>
pr	det.ind.sg	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>
pr	det.ind.GD.sg	n.m.sg

<b>In</b>	<b>a</b>	<b>hole</b>
pr	det.ind.sg	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>
pr	det.ind.GD.sg	n.m.sg

#### 3.3 $NP \rightarrow n$

NP  
unknown  
m.sg

<b>In</b>	<b>a</b>	<b>hole</b>
pr	det.ind.sg	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>
pr	det.ind.GD.sg	n.m.sg

<b>In</b>	<b>a</b>	<b>hole</b>
pr	det.ind.sg	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>
pr	det.ind.GD.sg	n.m.sg

#### 3.4 $DP \rightarrow \text{det NP}$

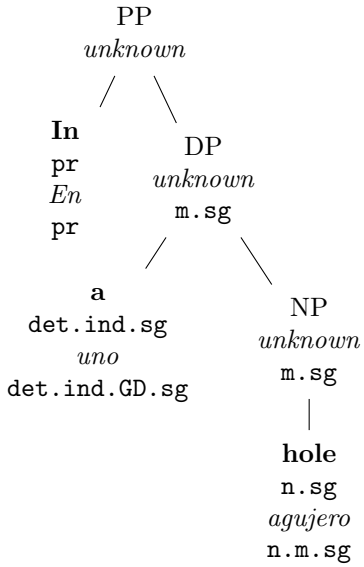
DP  
unknown  
m.sg

/      \  
 a      NP  
 det.ind.sg    unknown  
*uno*    m.sg  
 det.ind.GD.sg

<b>In</b>	<b>hole</b>
pr	n.sg
<i>En</i>	<i>agujero</i>
pr	n.m.sg

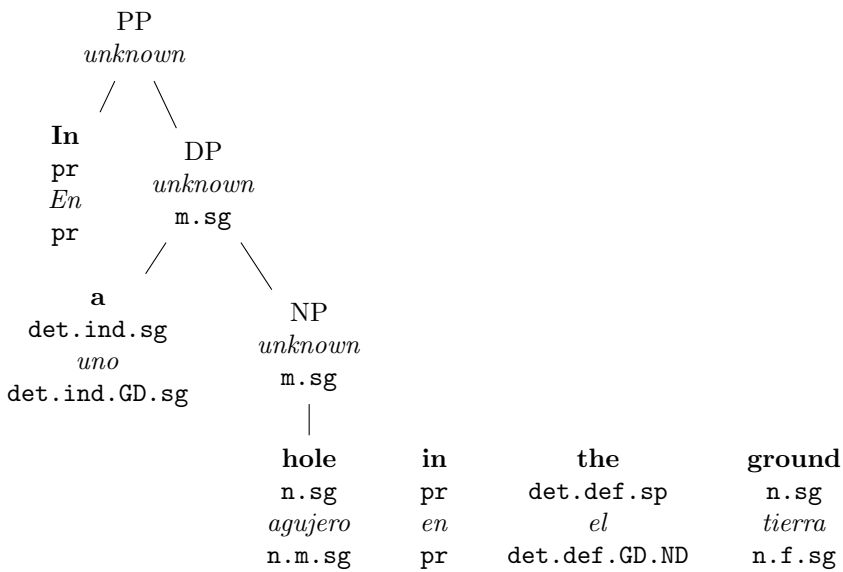
<b>In</b>	<b>a</b>	<b>hole</b>
pr	det.ind.sg	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>
pr	det.ind.GD.sg	n.m.sg

### 3.5 PP → pr DP



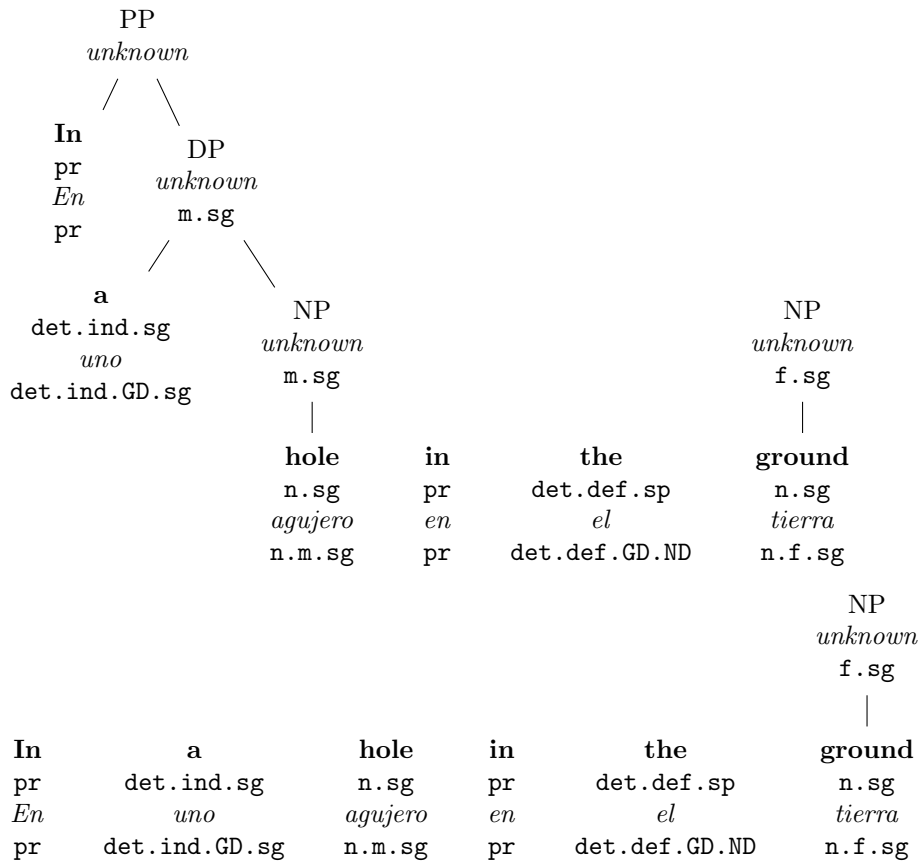
<b>In</b>	<b>a</b>	<b>hole</b>
pr	det.ind.sg	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>
pr	det.ind.GD.sg	n.m.sg

### 3.6 Read Some Input

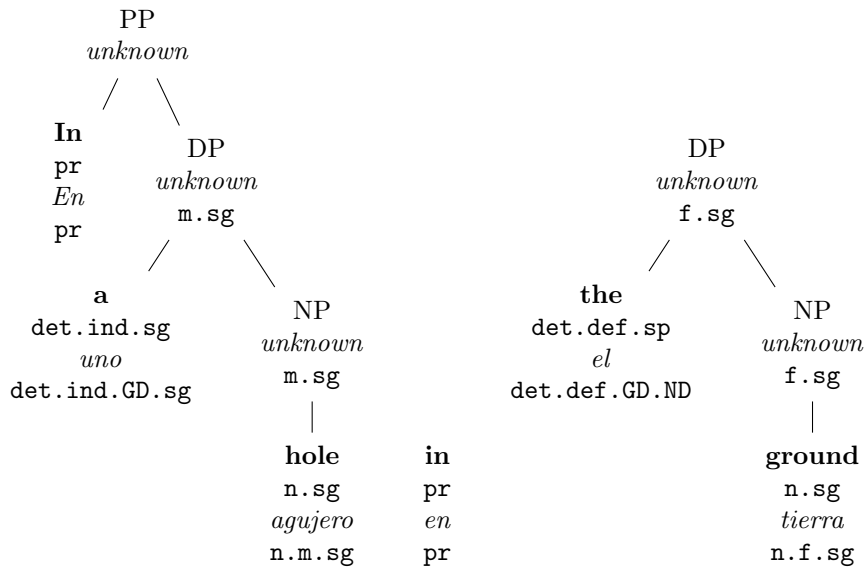


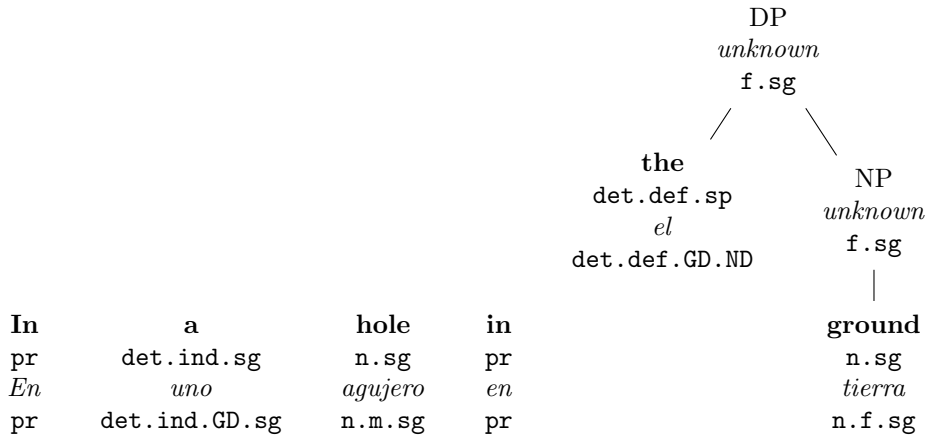
<b>In</b>	<b>a</b>	<b>hole</b>	<b>in</b>	<b>the</b>	<b>ground</b>
pr	det.ind.sg	n.sg	pr	det.def.sp	n.sg
<i>En</i>	<i>uno</i>	<i>agujero</i>	<i>en</i>	<i>el</i>	<i>tierra</i>
pr	det.ind.GD.sg	n.m.sg	pr	det.def.GD.ND	n.f.sg

### 3.7 NP → n

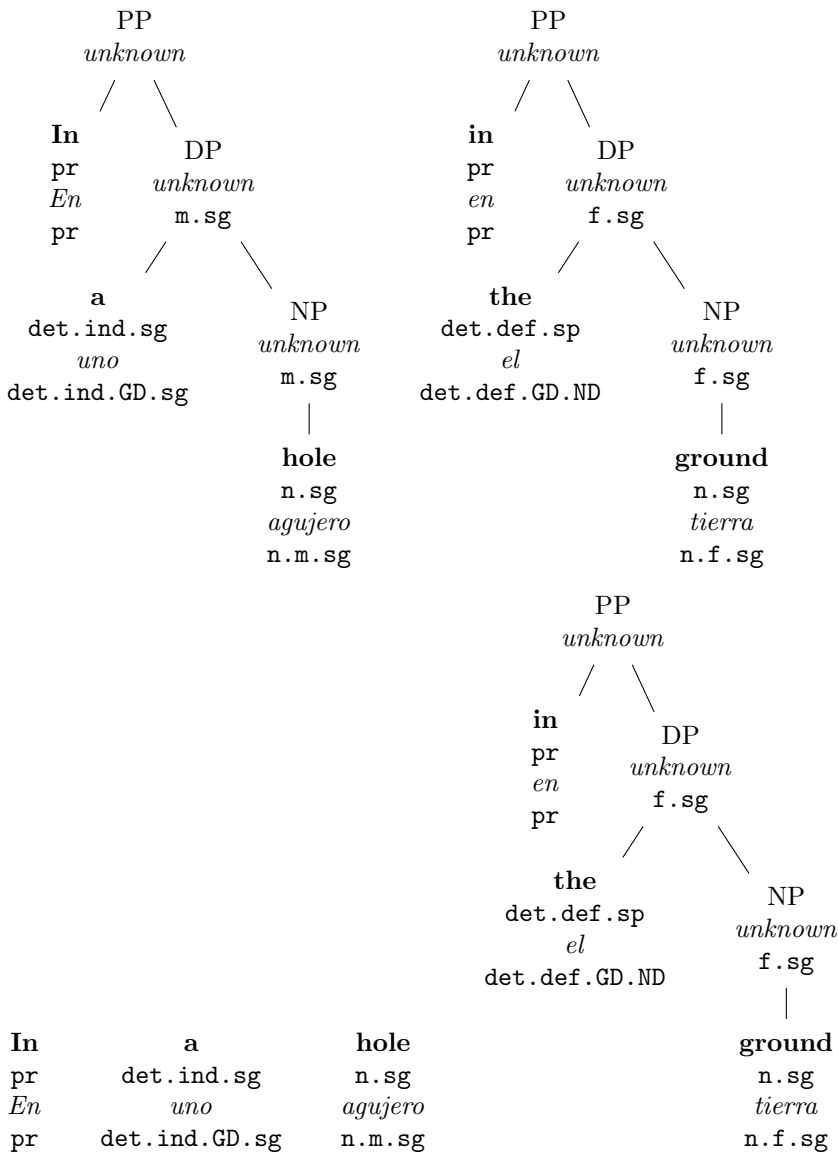


### 3.8 DP → det NP

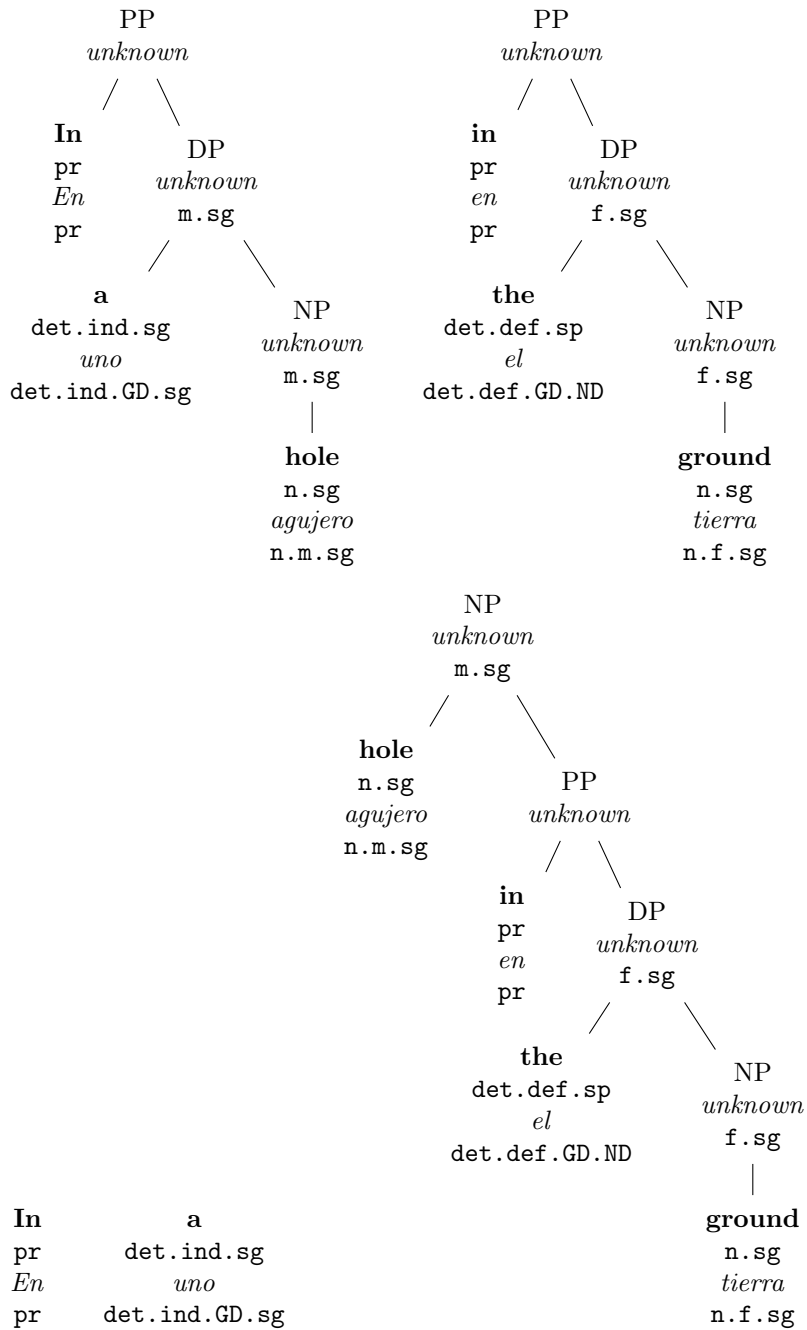




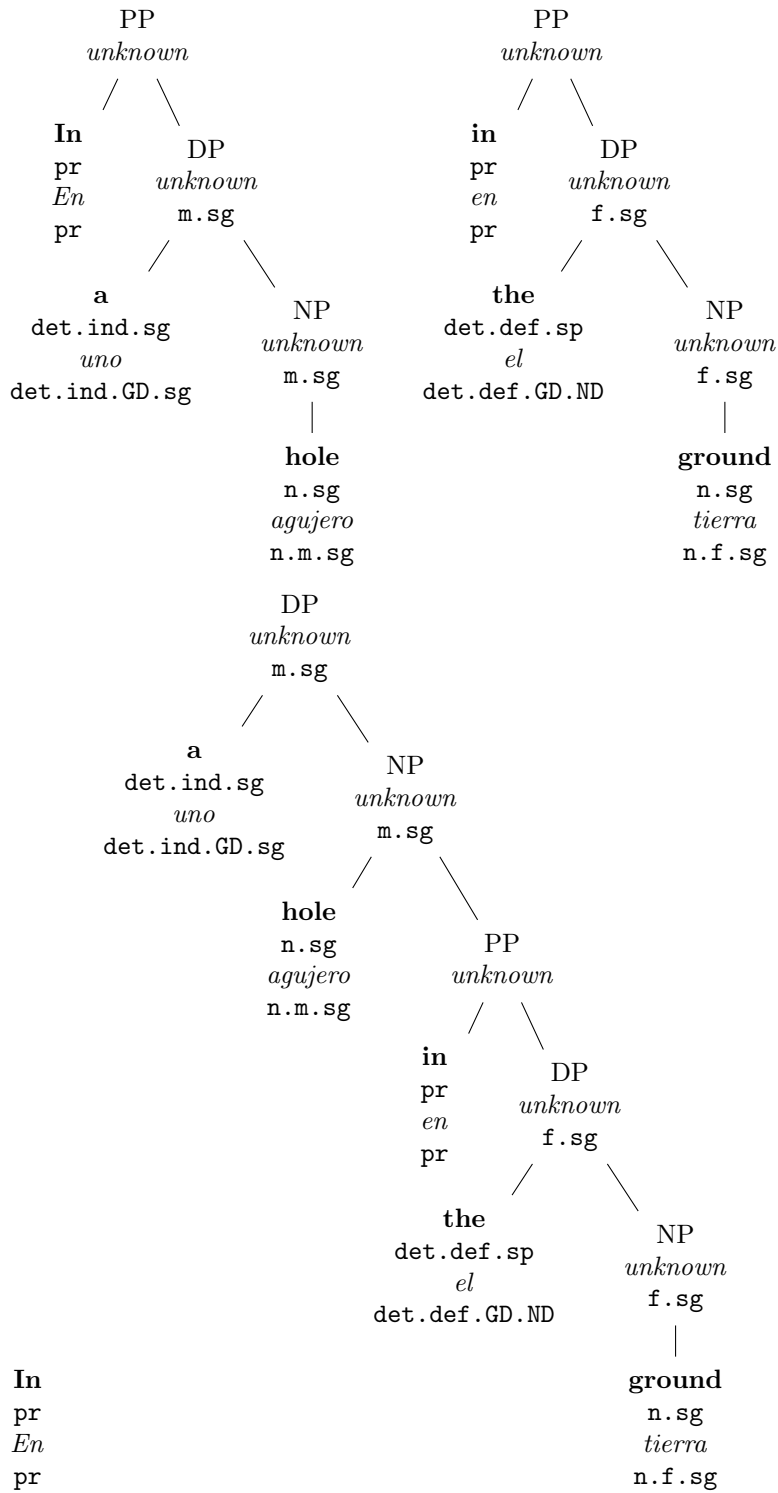
### 3.9 PP → pr DP



### 3.10 NP → n PP

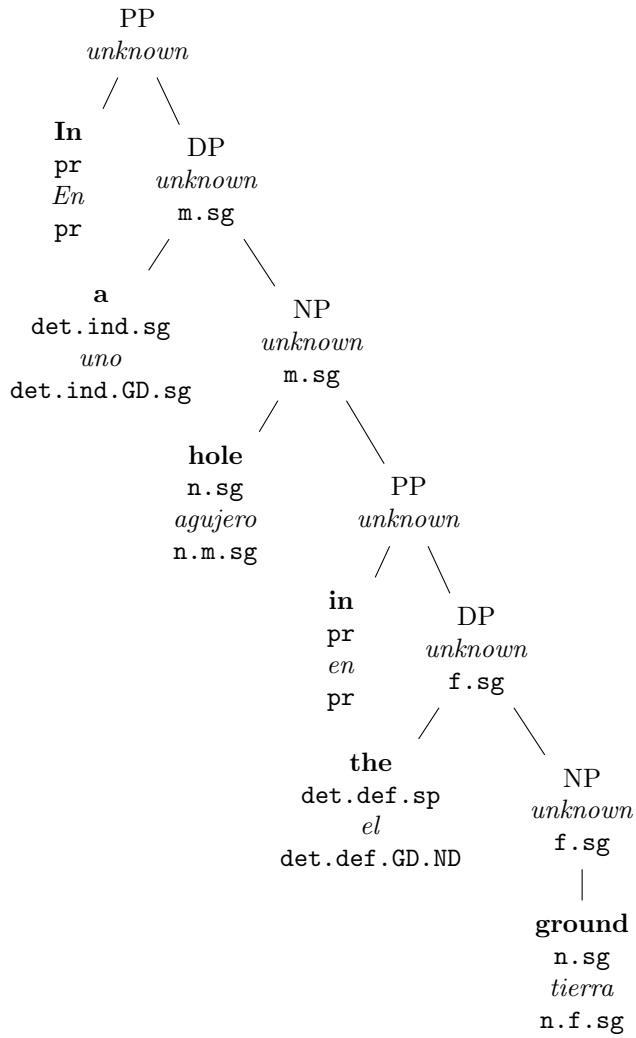
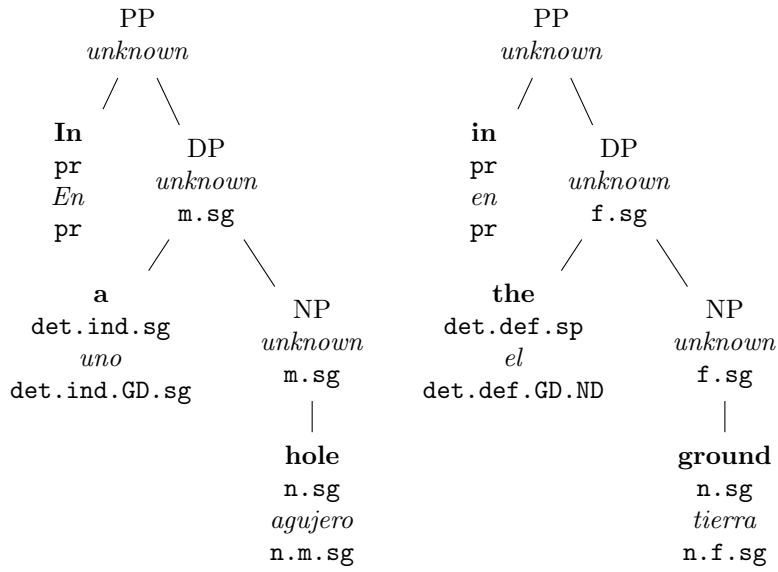


### 3.11 DP → det NP

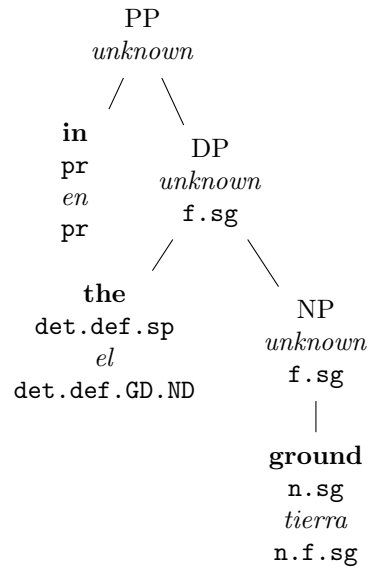
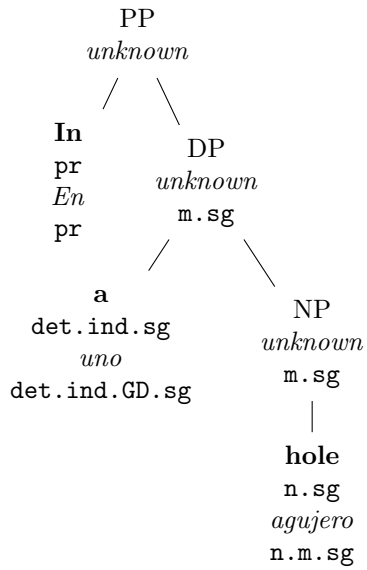




### 3.12 PP → pr DP



### 3.13 Read Some Input

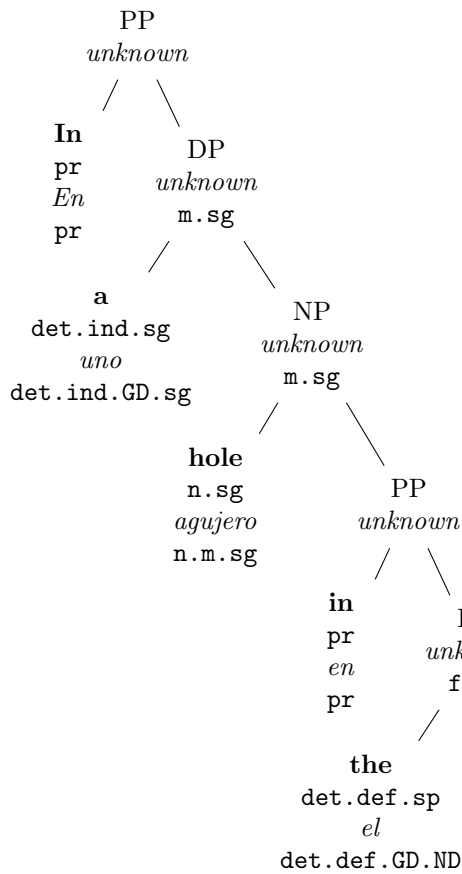


there  
adv  
allí  
adv

live  
vblex.past  
vivir  
vblex.past

a  
det.ind.sg  
uno  
det.ind.GD.sg

Hobbit  
n.sg  
Hobbit  
n.m.sg



ground  
n.sg  
tierra  
n.f.sg

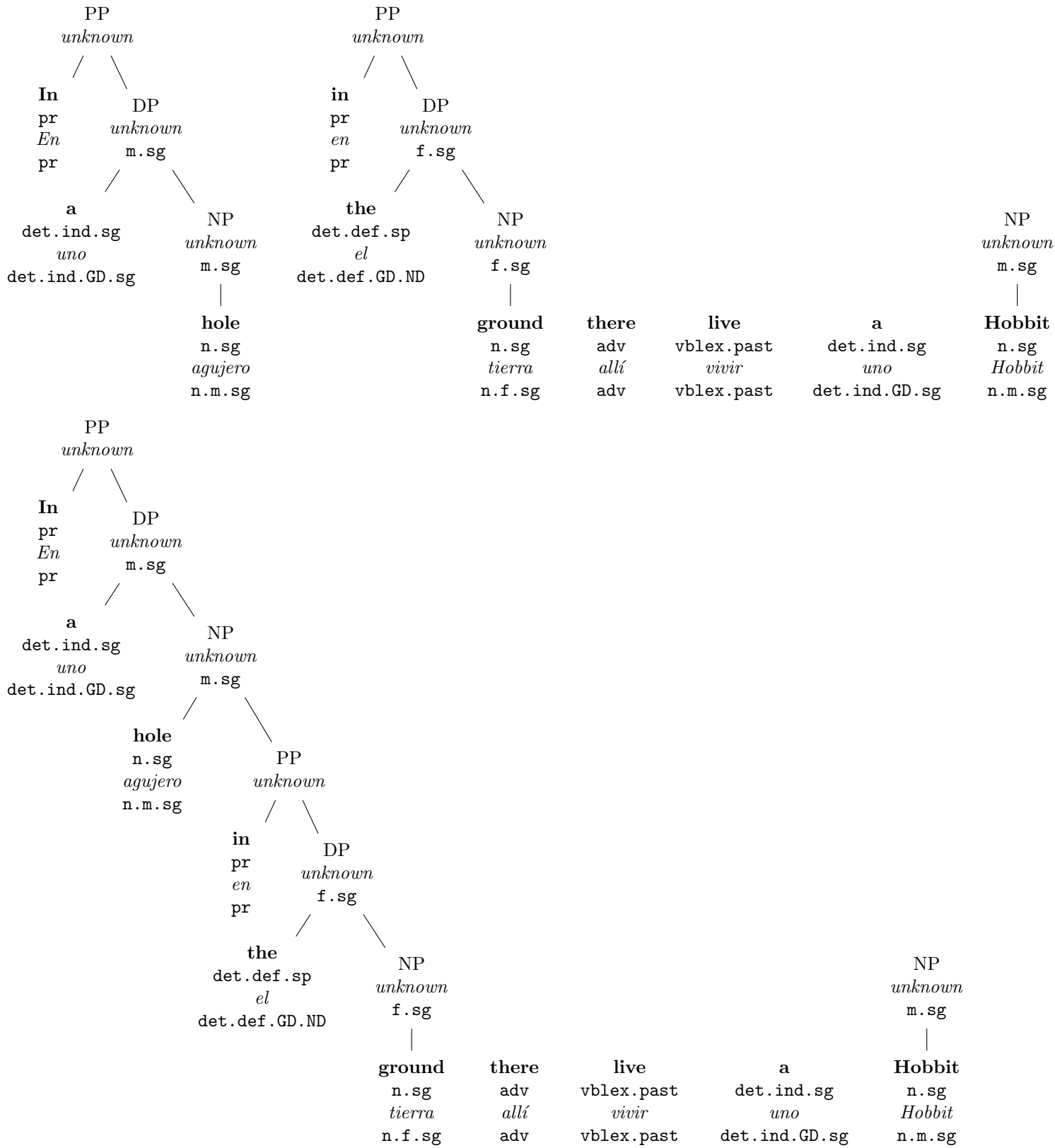
there  
adv  
allí  
adv

live  
vblex.past  
vivir  
vblex.past

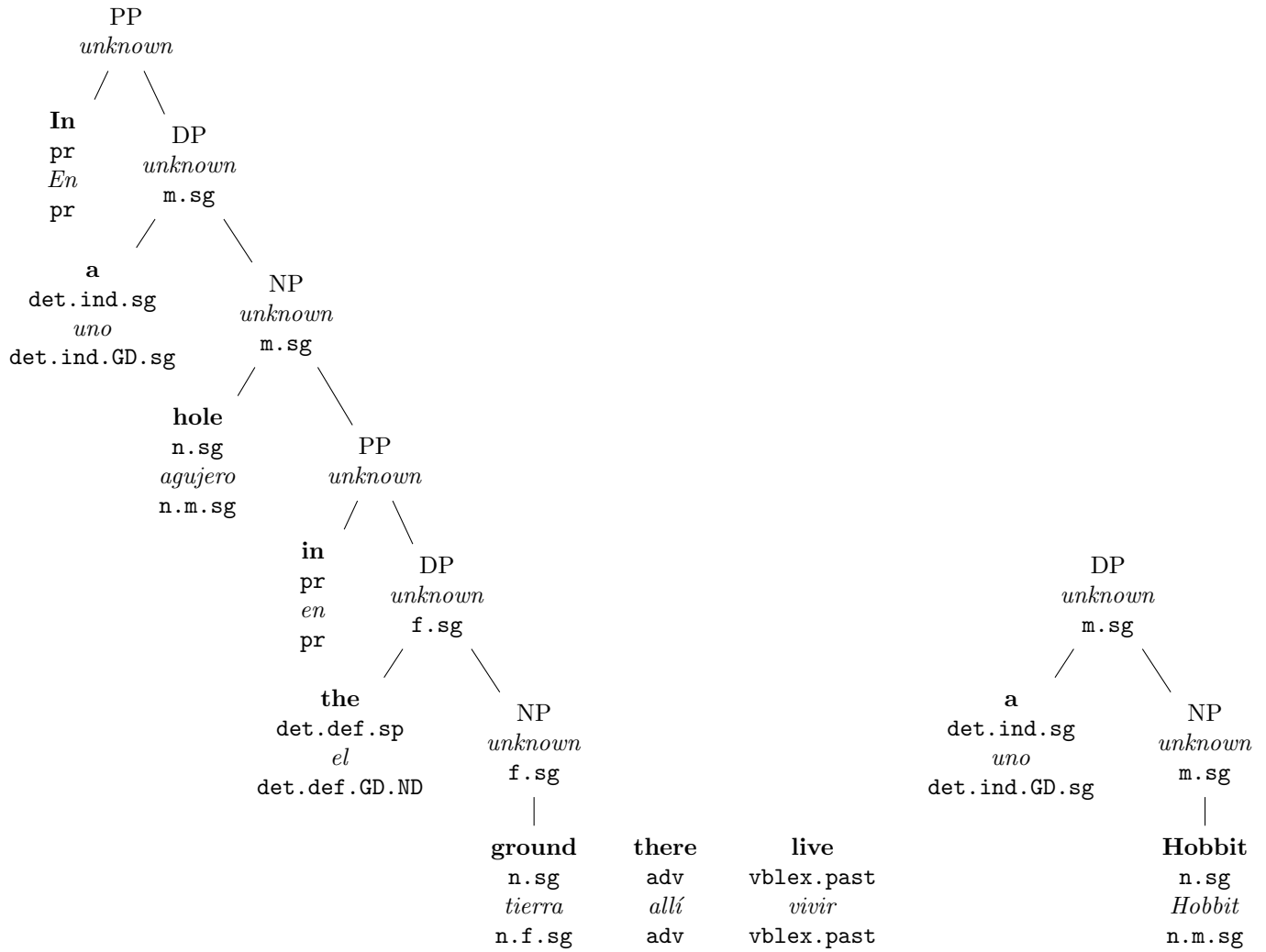
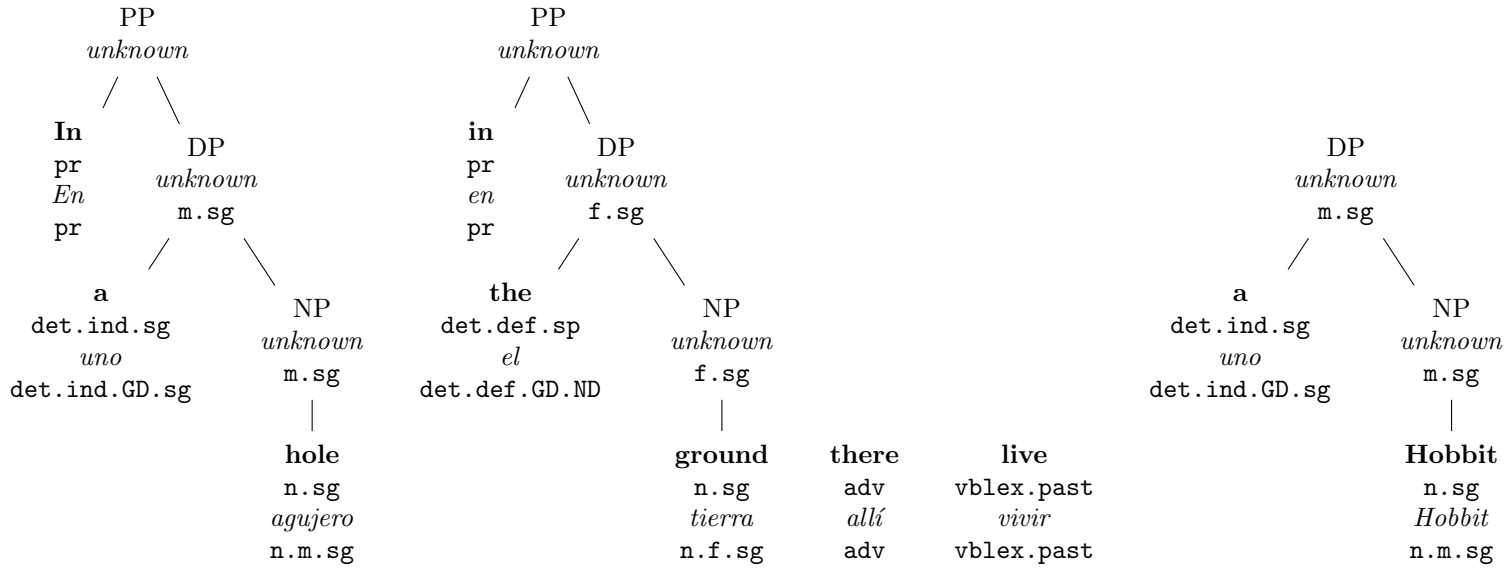
a  
det.ind.sg  
uno  
det.ind.GD.sg

Hobbit  
n.sg  
Hobbit  
n.m.sg

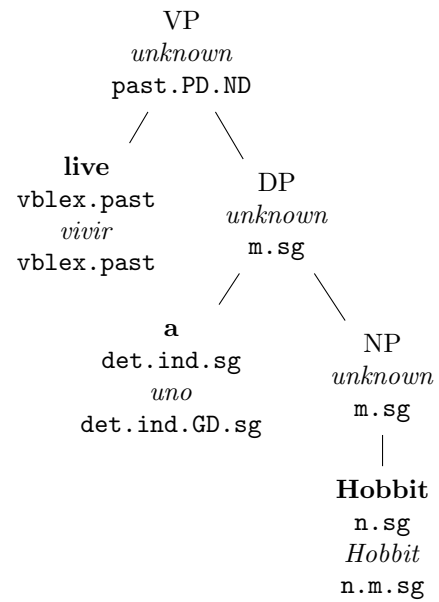
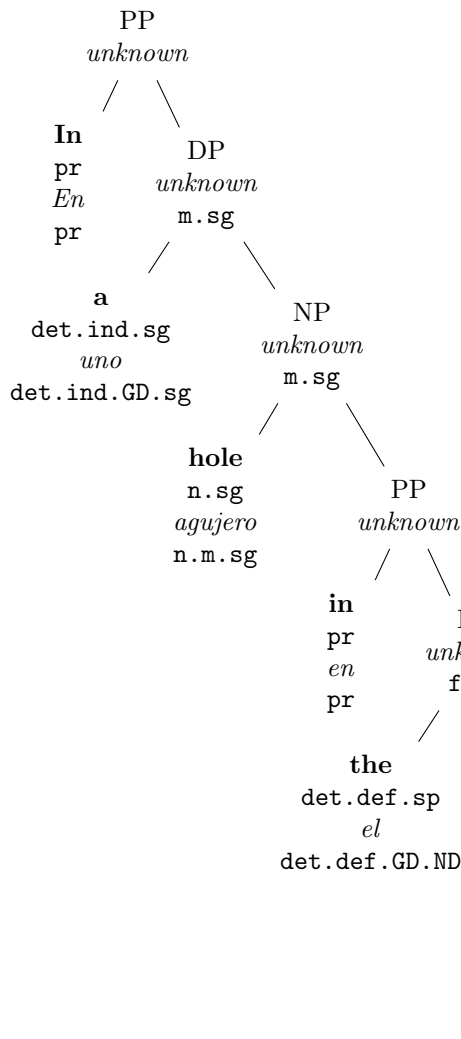
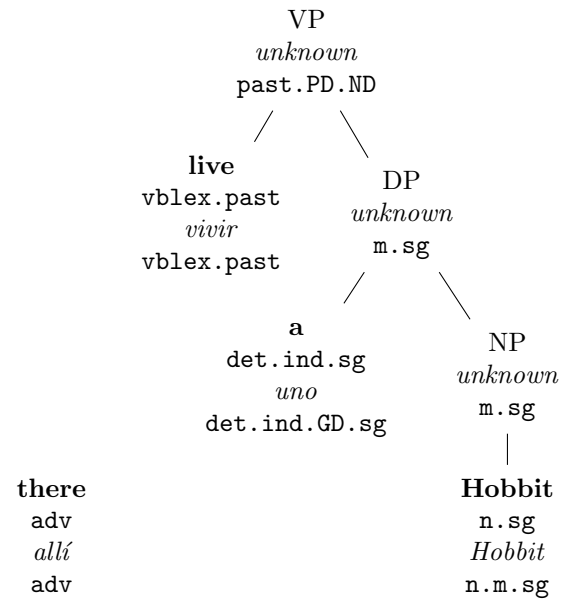
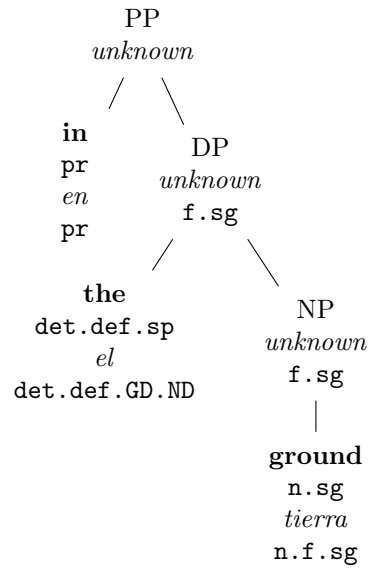
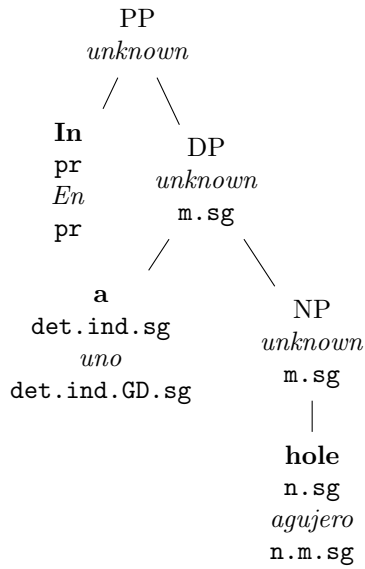
### 3.14 NP → n



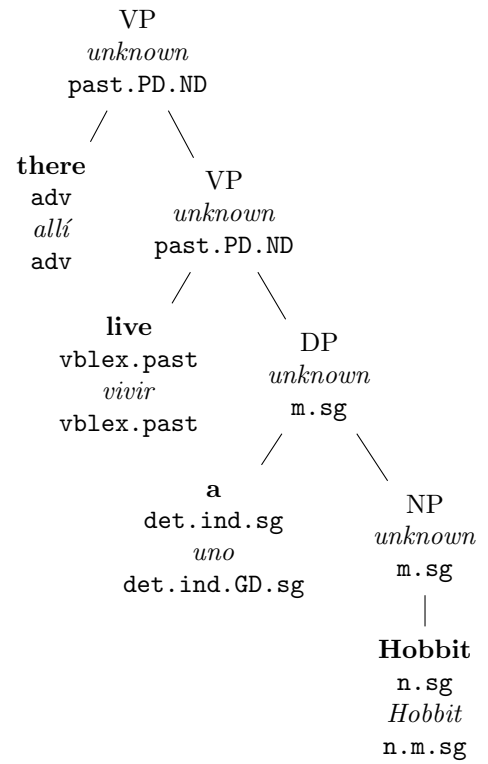
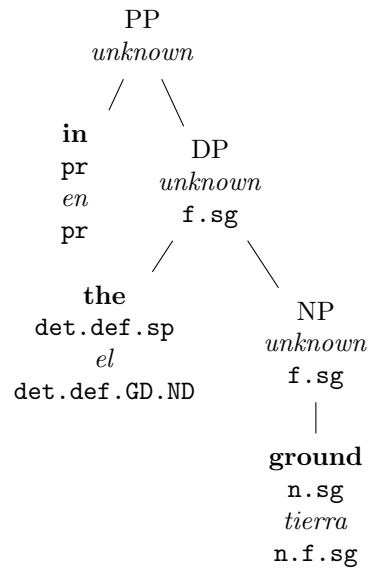
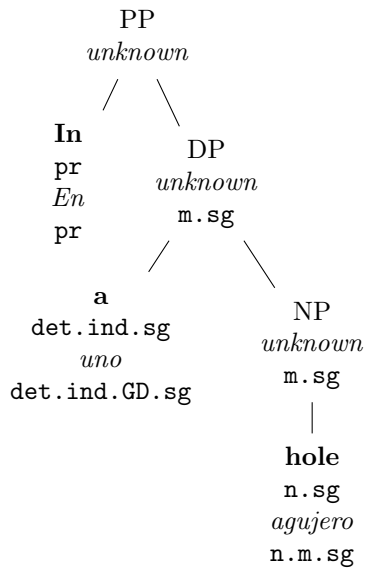
### 3.15 DP → det NP

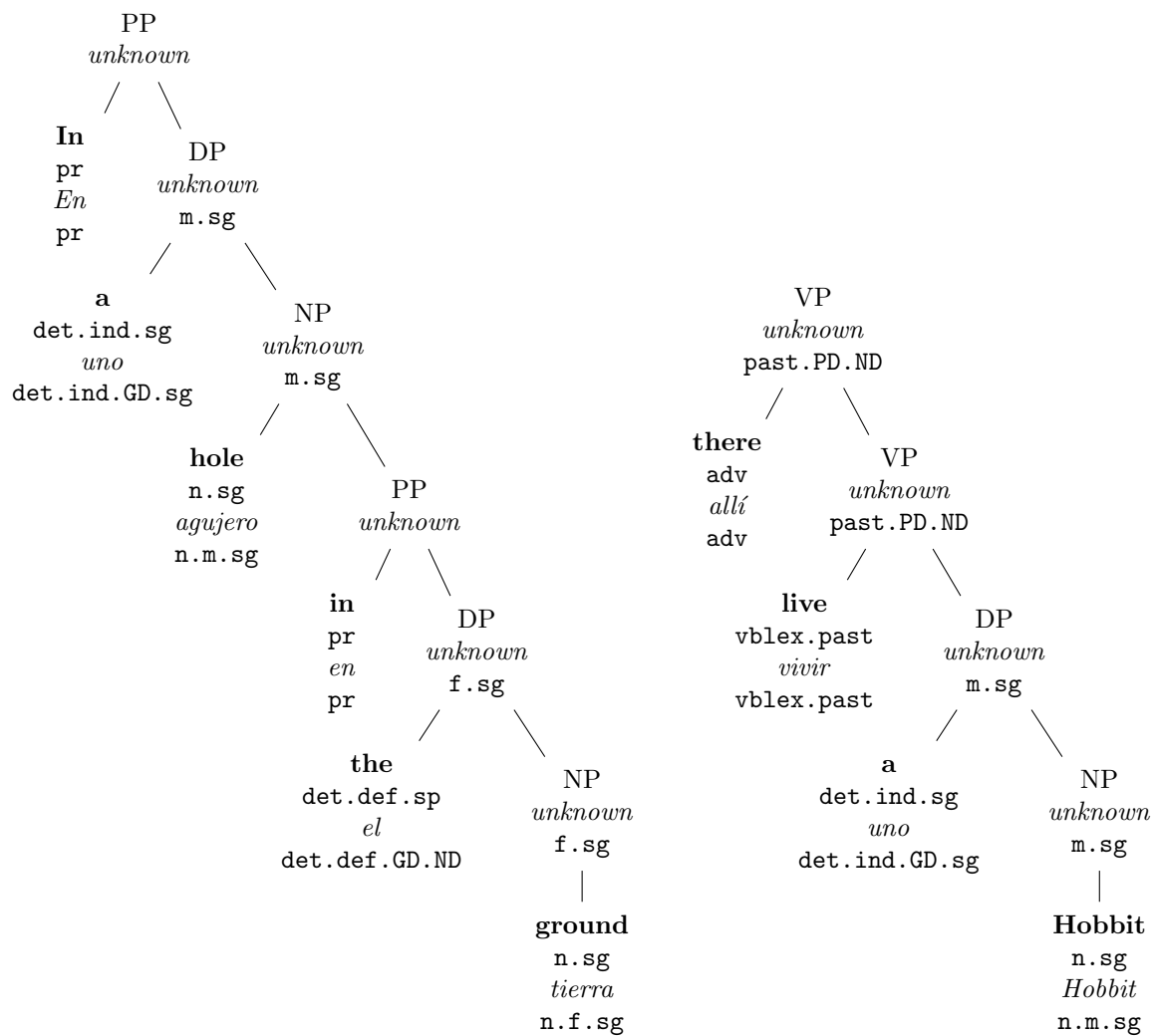


### 3.16 VP → vblex DP

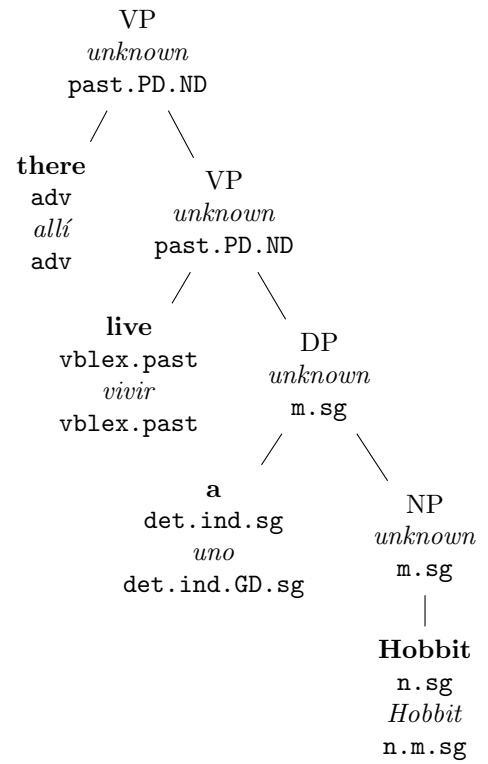
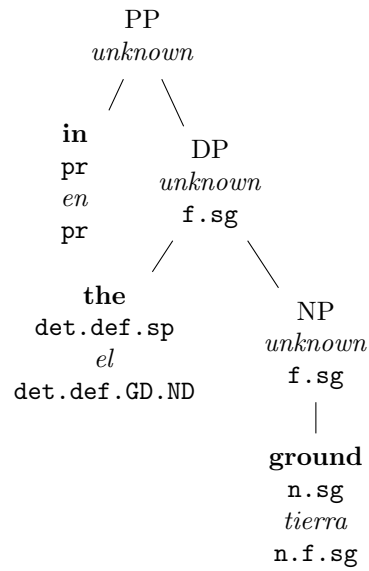
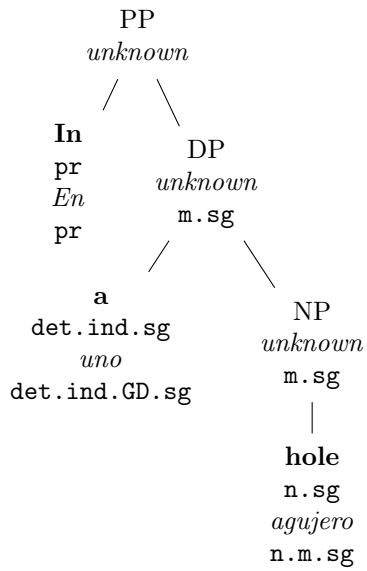


### 3.17 VP → adv VP

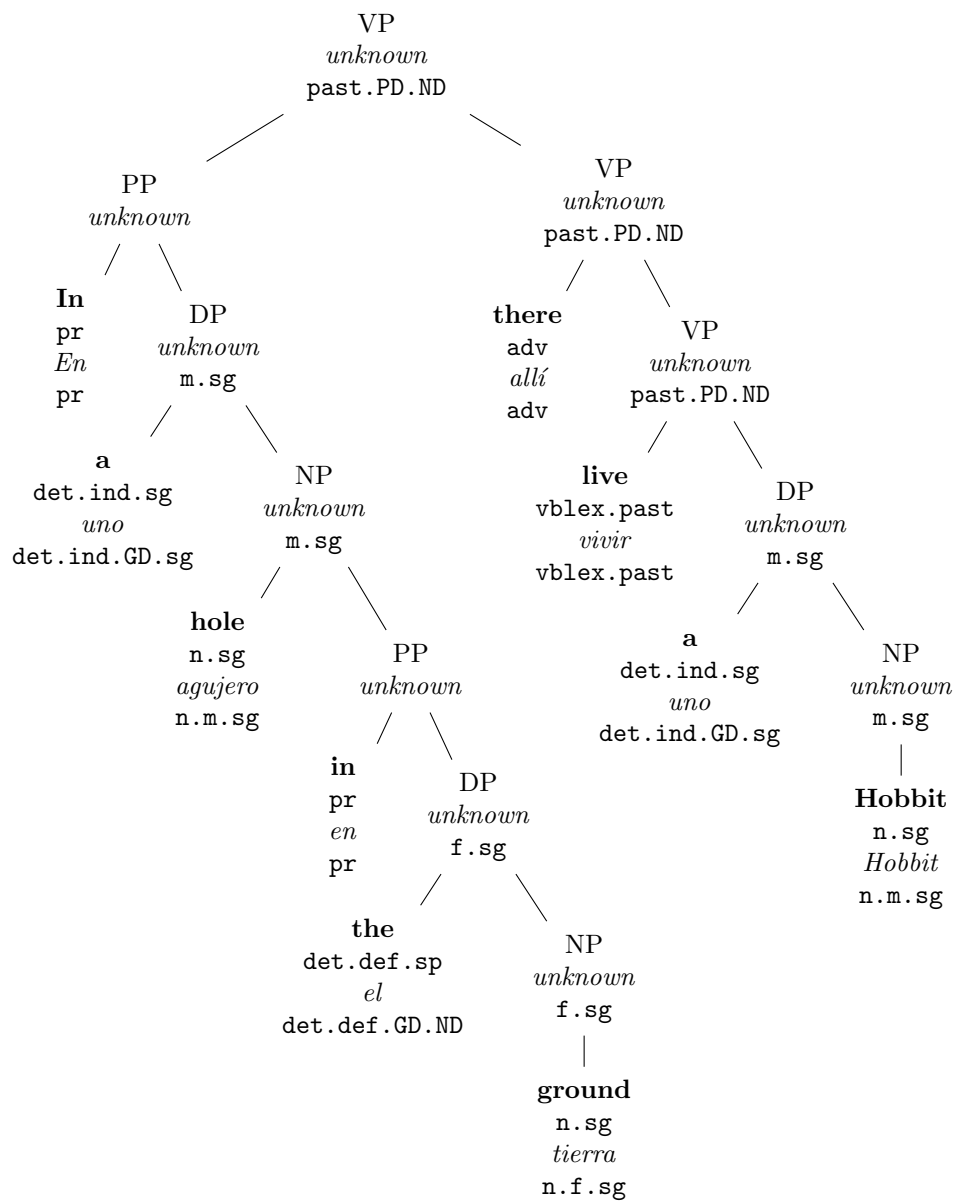




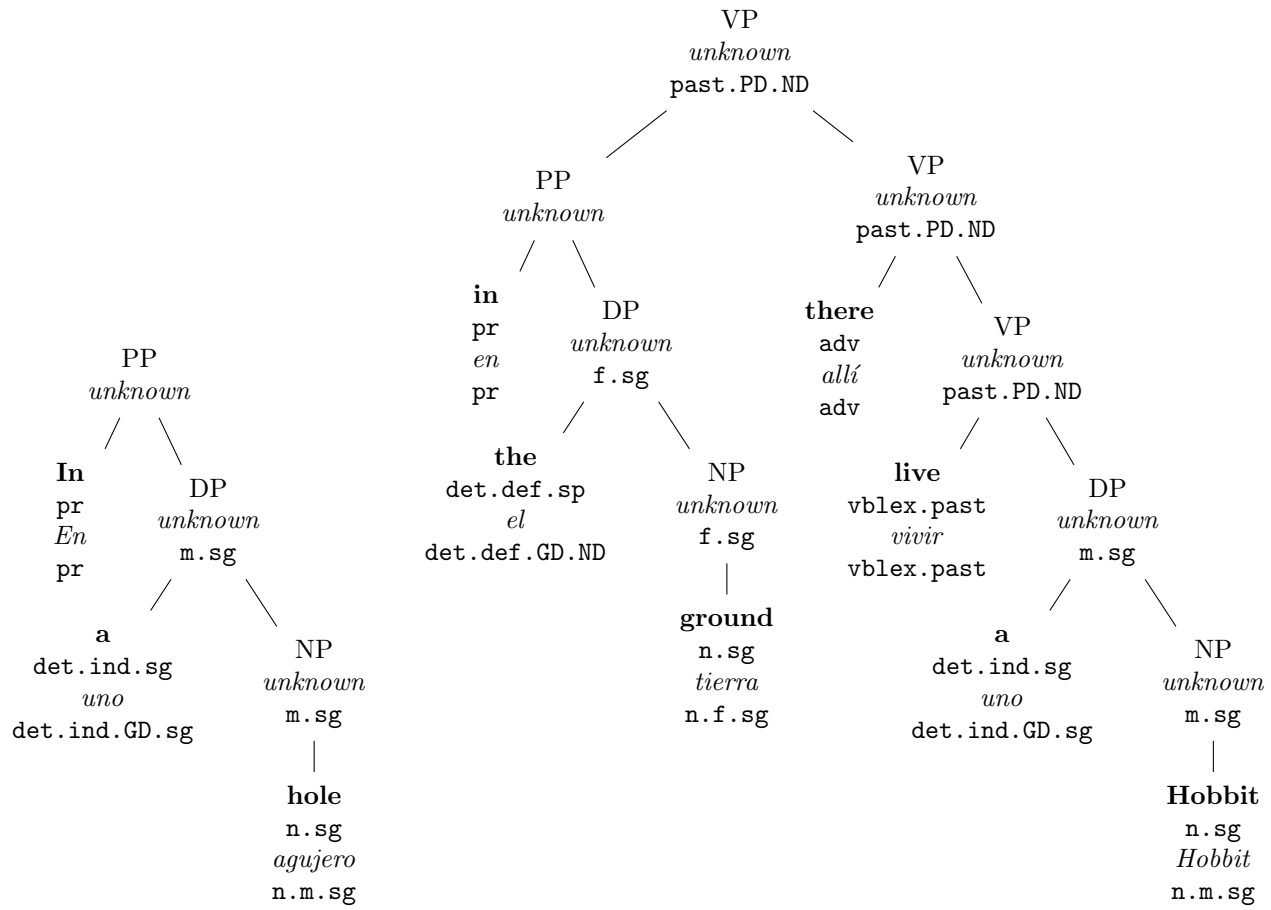
### 3.18 VP → PP VP

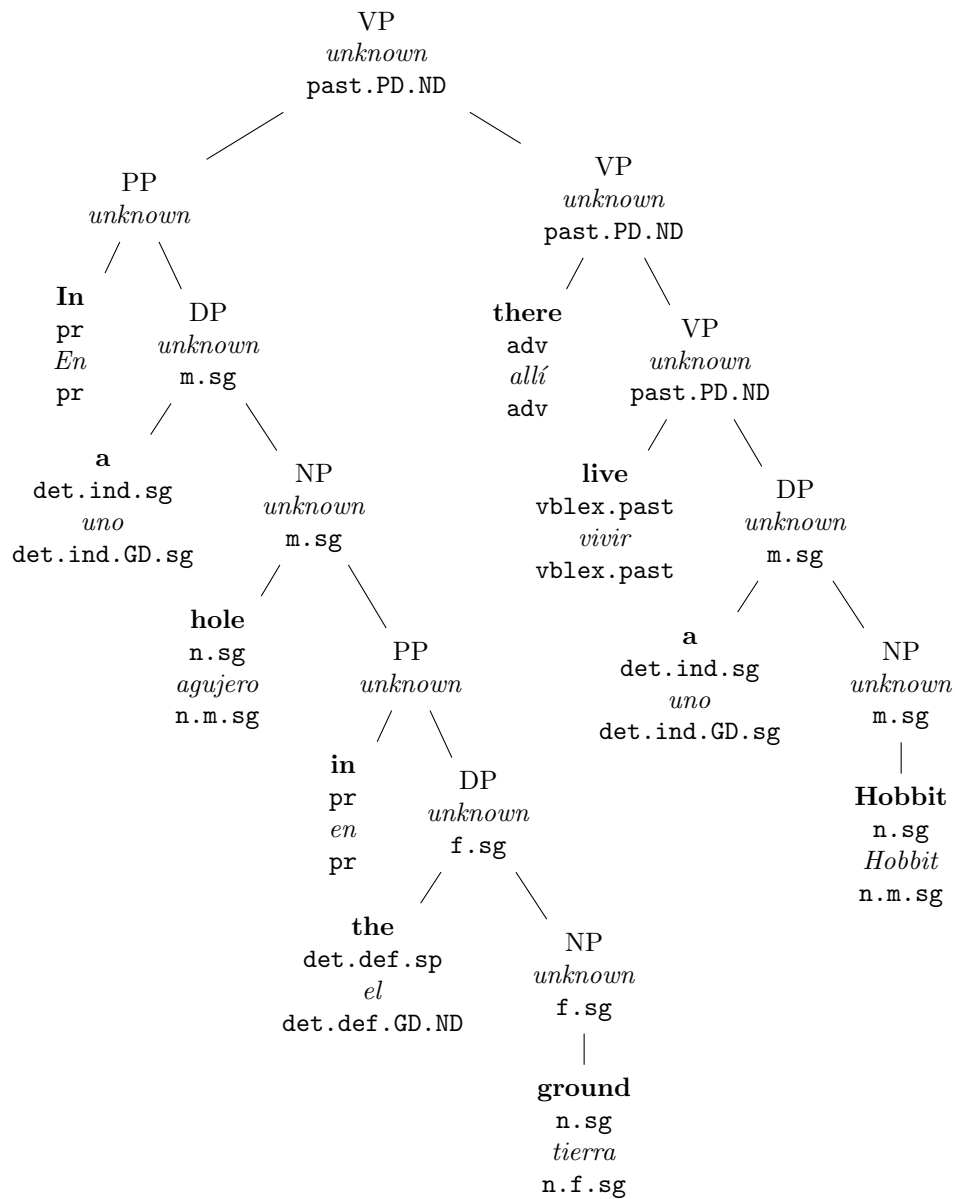




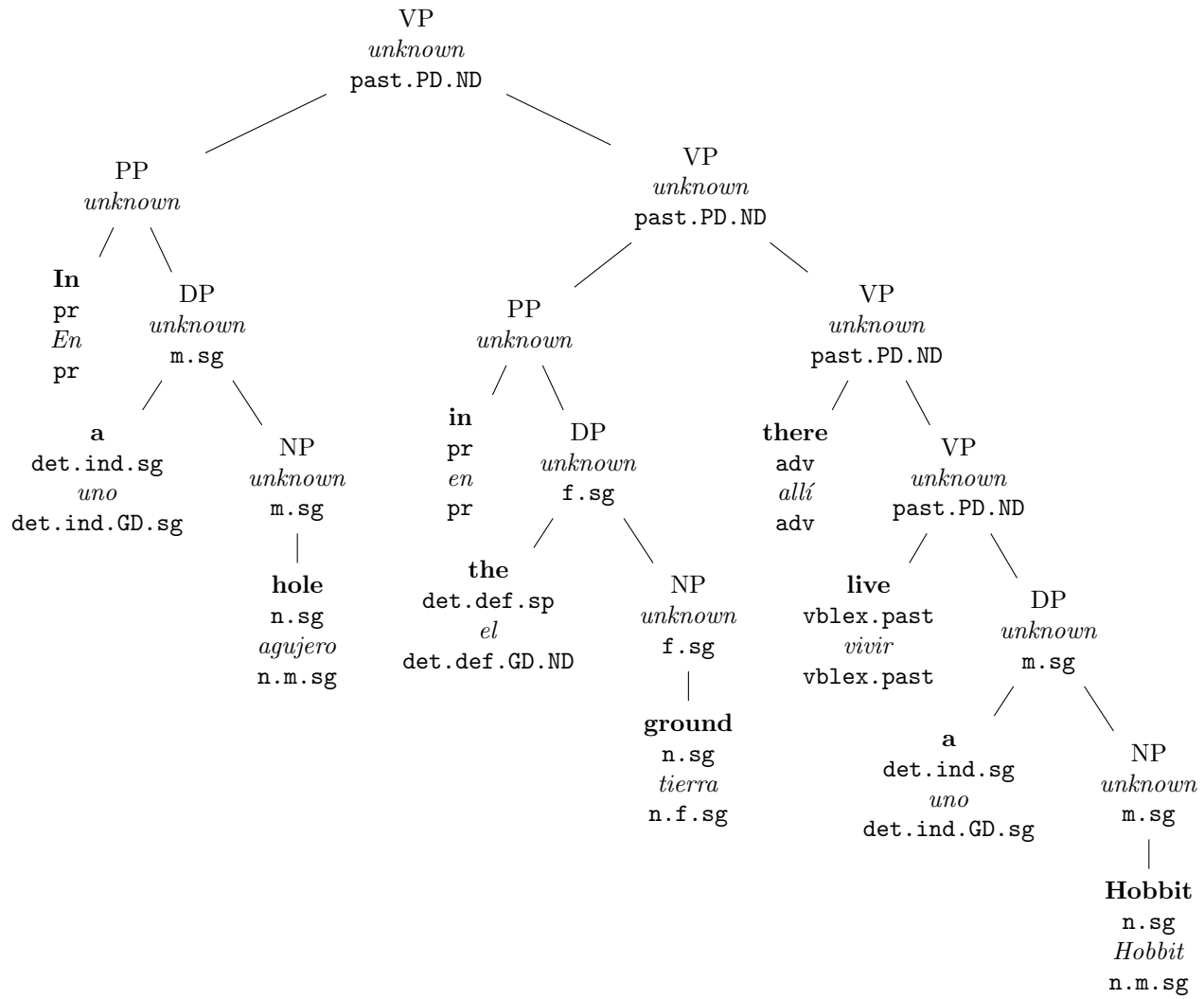


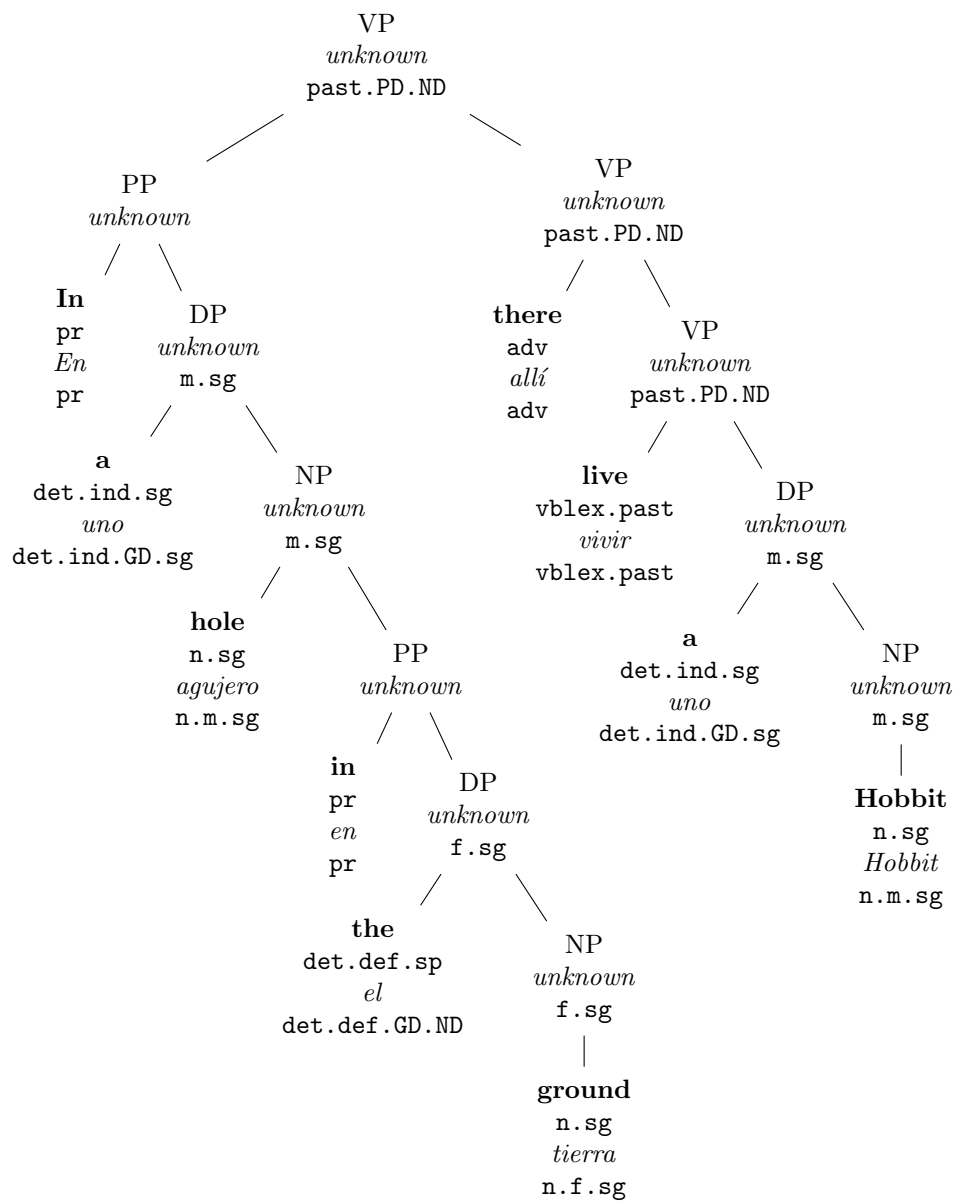
### 3.19 VP → PP VP



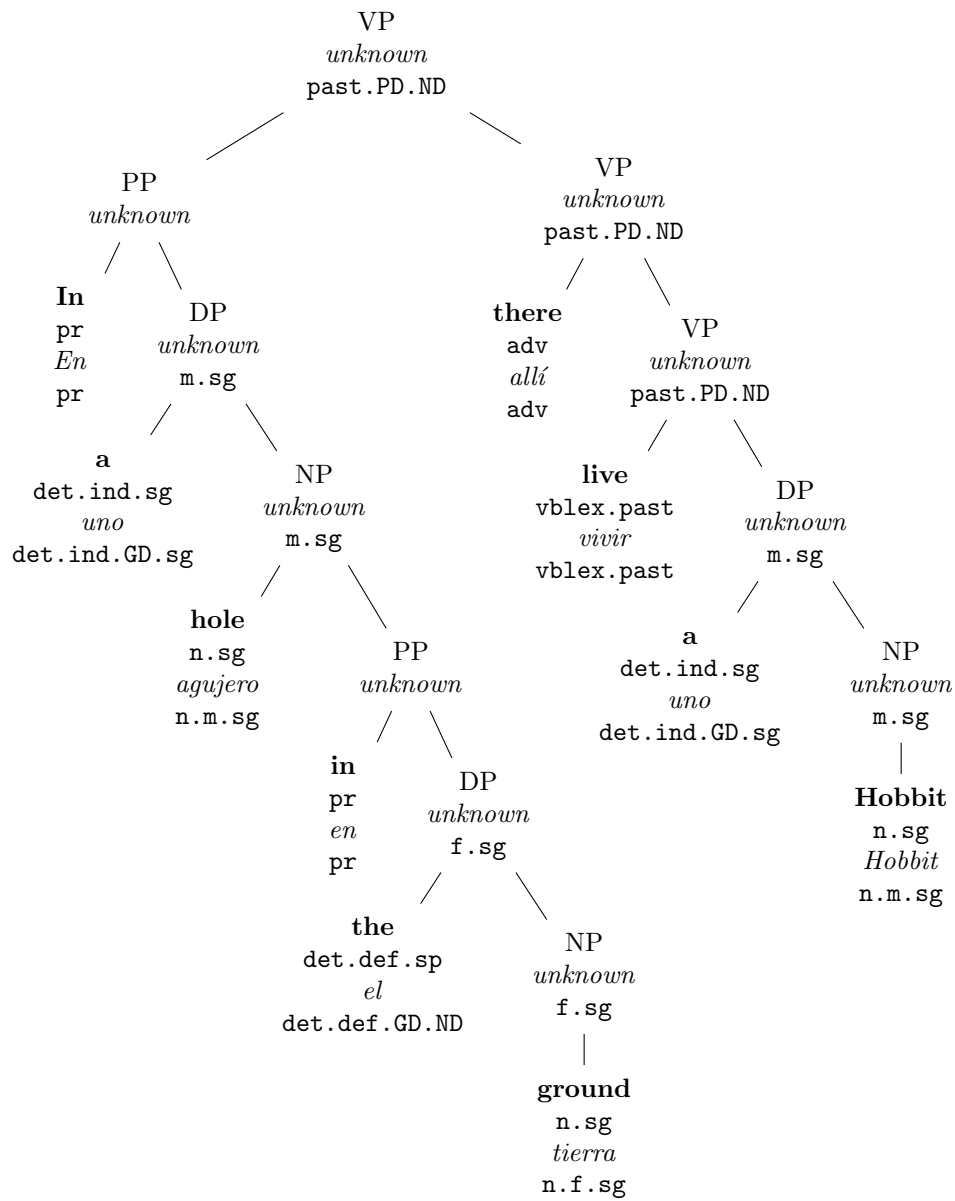


### 3.20 VP → PP VP



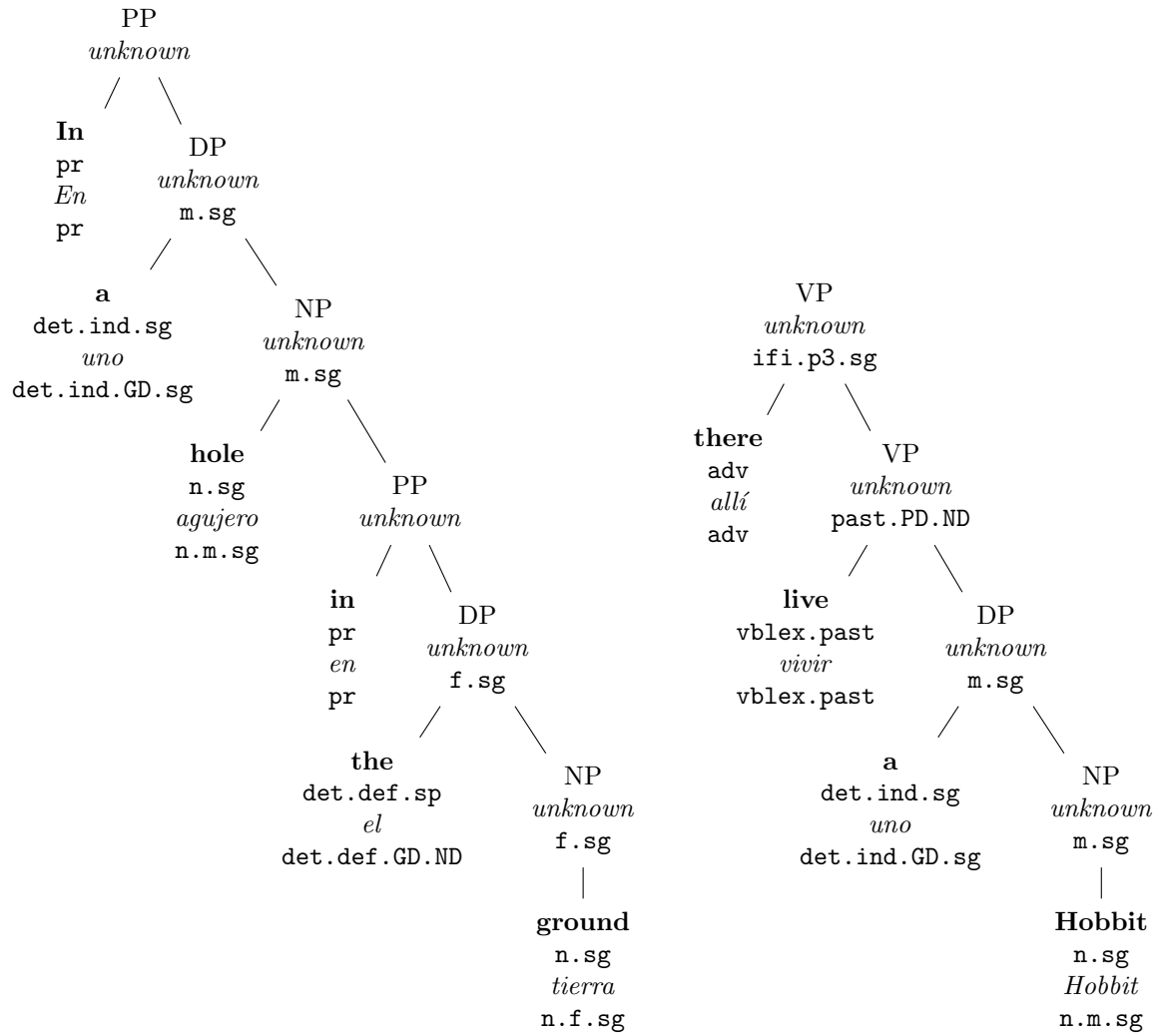


### 3.21 Prune Branches

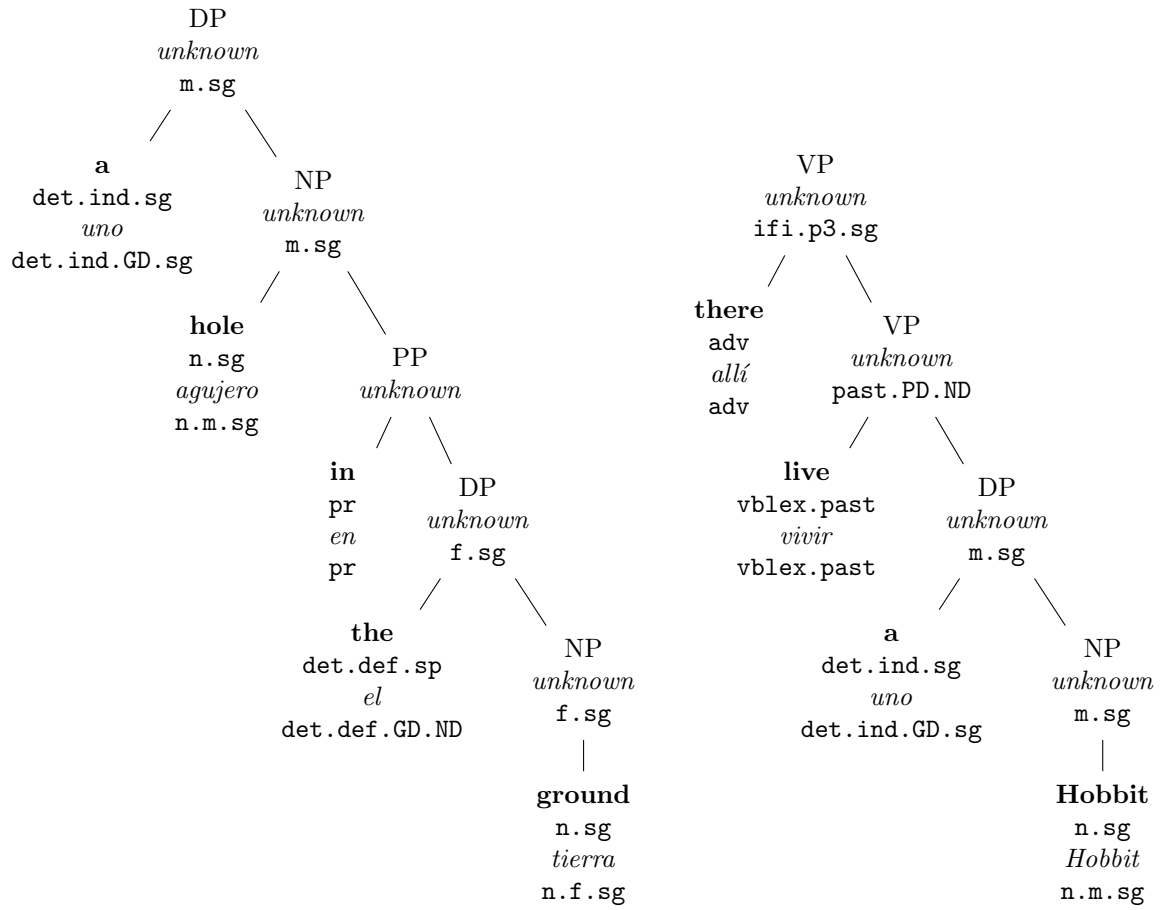


## 4 The Output

### 4.1 Output Step for VP → PP VP



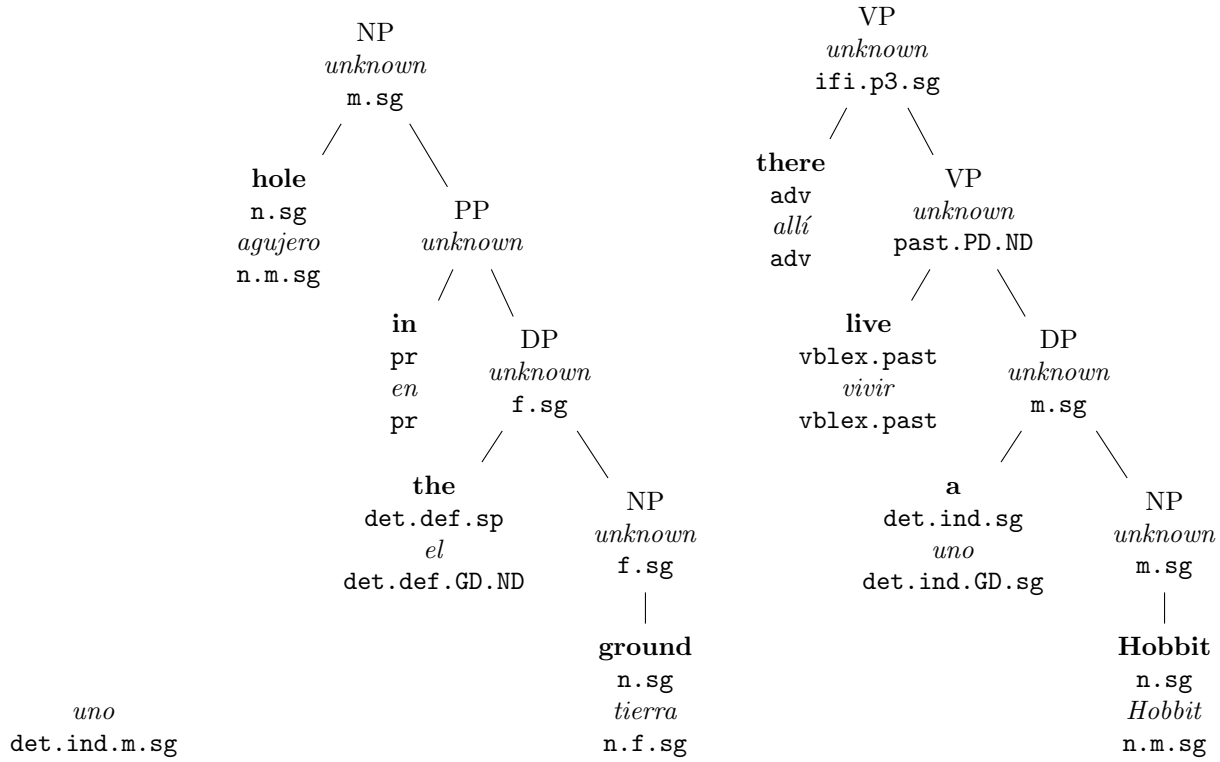
## 4.2 Output Step for PP → pr DP



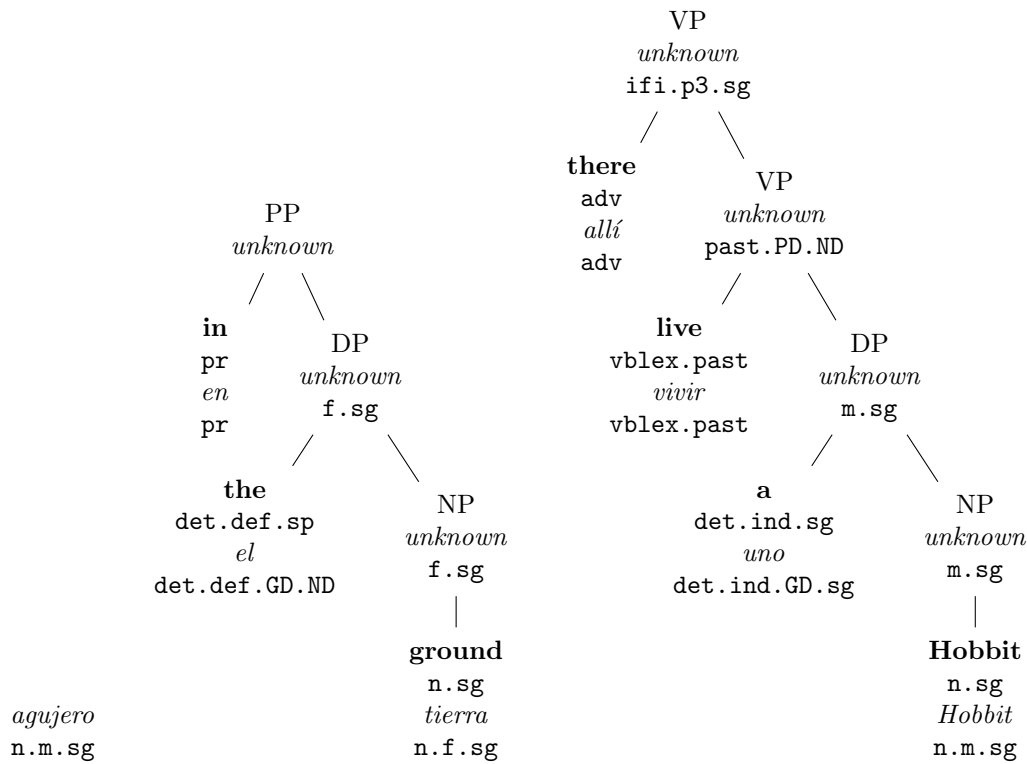
En  
pr



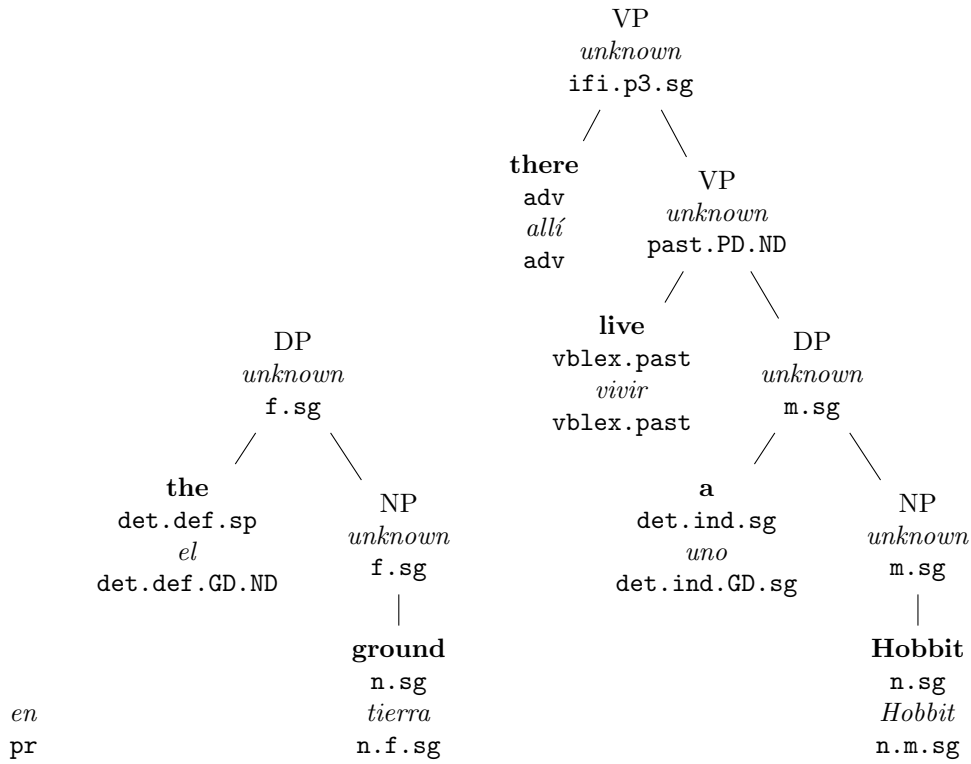
#### 4.3 Output Step for DP → det NP



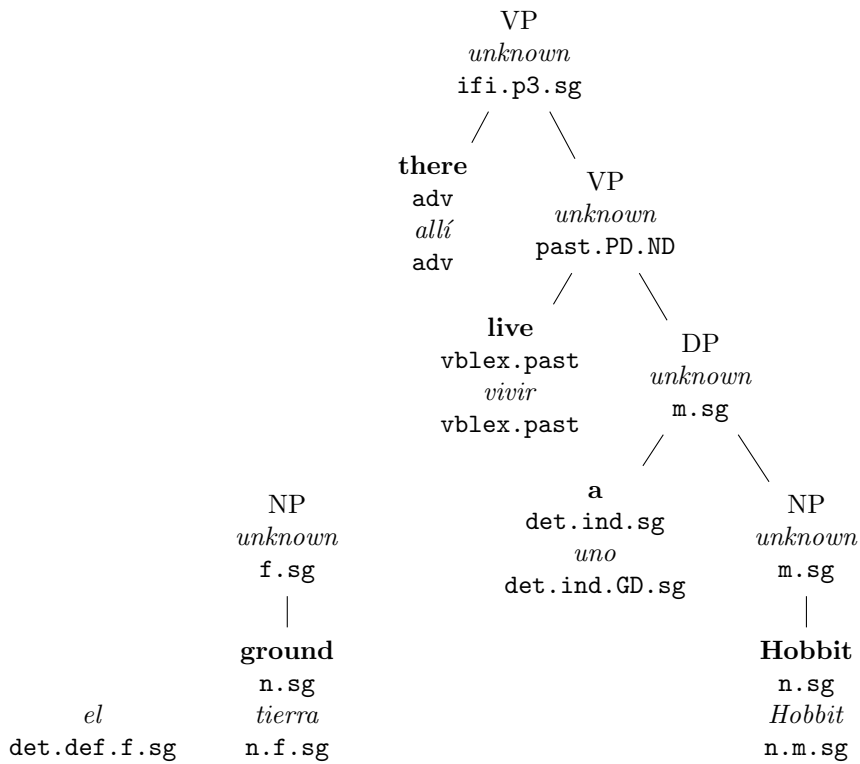
#### 4.4 Output Step for NP → n PP



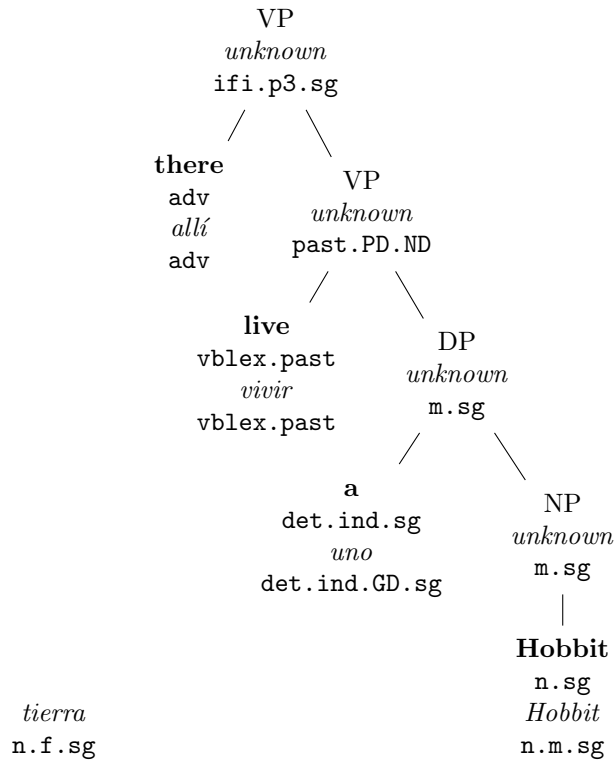
#### 4.5 Output Step for PP → pr DP



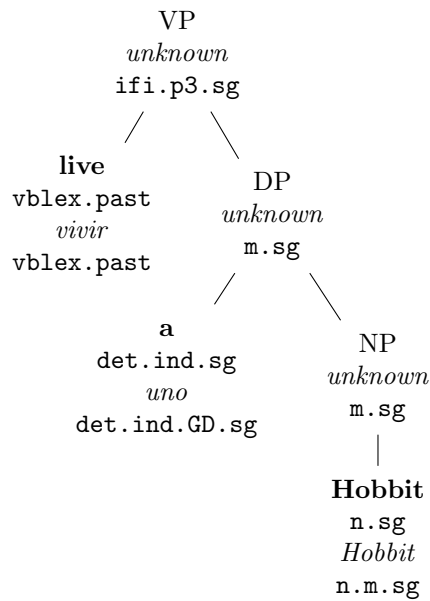
#### 4.6 Output Step for DP → det NP



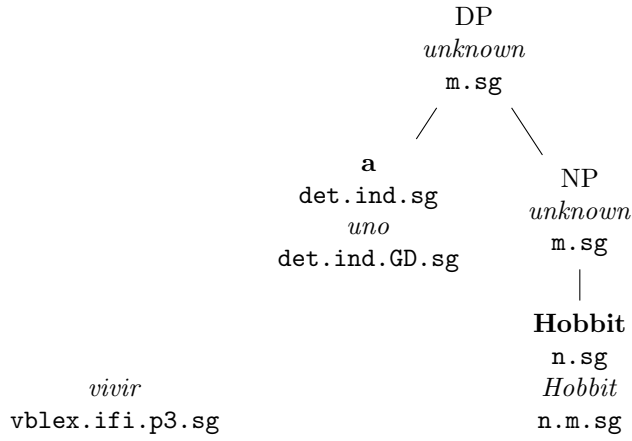
#### 4.7 Output Step for NP → n



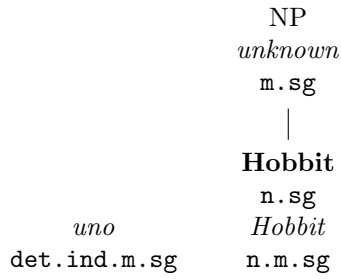
#### 4.8 Output Step for VP → adv VP



#### 4.9 Output Step for VP $\rightarrow$ vblex DP



#### 4.10 Output Step for DP $\rightarrow$ det NP



#### 4.11 Output Step for NP $\rightarrow$ n

*Hobbit*  
n.m.sg

### 5 The Result

The immediate result:

```
^En<pr>$ ^uno<det><ind><m><sg>$ ^agujero<n><m><sg>$ ^en<pr>$ ^el<det><def><f><sg>$ ^tierra<n><f><sg>$
^vivir<vblex><ifi><p3><sg>$ ^uno<det><ind><m><sg>$ ^Hobbit<n><m><sg>$^.<sent>$^.<sent>$
```

Final output:

En un agujero en la tierra vivió un Hobbit.