(a)  
\[
0 \text{ this boy loves that girl} \\
1 \text{ that} \\
2 \text{ NP D} \\
3 \text{ NP D} \\
4 \text{ V loves V} \\
5 \text{ S NP} \\
6 \text{ D this D} \\
7 \text{ NP D} \\
8 \text{ N boy N}
\]

(b)  
\[
0 \text{ S 0 1 0 1 0 S 0} \\
1 \text{ S NP} \\
2 \text{ V loves V} \\
3 \text{ NP D} \\
4 \text{ NP D} \\
5 \text{ D this D} \\
6 \text{ D this D} \\
7 \text{ NP D} \\
8 \text{ N boy N}
\]

(c)
Two kittens play.

(a)

(b)
It will have been being washed

Will he be talking?

They have finished

Are they gone?

Has he been working?
<table>
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</tbody>
</table>
John Smith

Flu

Influenza

Fever

Normal

Runny

Normal

38-39

Sore

No

Flu_virus

Flu_treatment
John
person
name
John
Smith
#name
#name
gender
gender
male
male
#gender
#gender
profession
profession
doctor
stethoscope
stethoscope
black-bag
black-bag
head
head
hair
hair
#colour
#colour
fair-hair
fair-hair
#colour
#colour
length
length
#hair
#hair
iris
iris
#eyes
#eyes
pupil
pupil
nose
nose
mouth
mouth
chin
chin
beard
beard
#chin
#chin
... 
#head
#head
body
body
legs
legs
voice
voice
#voice
#voice
town
town
Dorking
Dorking
town
town
#person
#person
#john1
...
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<car> <!-- Car Details --></car>

<v4> <!-- Vehicle Details --></v4>

<registration> <!-- Registration Number --></registration>

LMN 888

<engine> <!-- Engine Details --></engine>

<gasoline_type> <!-- Gasoline Type --></gasoline_type>

spark_plugs

<e> <!-- Engine Components --></e>

<fuel> <!-- Fuel Type --></fuel>

gasoline

<capacity> <!-- Capacity --></capacity>

2000cc

<compression> <!-- Compression --></compression>

low
cylinder_block

<load_space> <!-- Load Space --></load_space>

small

<wheels> <!-- Wheels --></wheels>

4

<doors> <!-- Doors --></doors>

4

<seats> <!-- Seats --></seats>

4

</v> <!-- Vehicle Details --></v>

</v4> <!-- Vehicle Details --></v4>

</car> <!-- Car Details --></car>

</vehicle> <!-- Vehicle Information --></vehicle>
Start 43 Does the starter turn the engine?
43 yes 44 Does the starter turn the engine briskly?
44 yes 19 Slowly press throttle to floor, return choke and try again. Does engine start?
19 no 1 Is there a spark at the plug leads?
1 yes 2 Remove and examine plugs.
Are they black, oily or wet?
2 yes 4 Thoroughly clean and dry (plugs), or renew, check gap and re-fit. Try again.
Does engine start?
4 yes 58 Problem is solved.
4 no 23 Check for water in fuel. Drain off to clear.
2 no 5 Clean, check gap and replace plugs. Does engine start?

<p>| | | |</p>
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<td>yes</td>
</tr>
<tr>
<td>2</td>
<td>43 yes 44</td>
<td>yes</td>
</tr>
<tr>
<td>3</td>
<td>44 yes 19</td>
<td>yes</td>
</tr>
<tr>
<td>4</td>
<td>19 no 1</td>
<td>yes</td>
</tr>
<tr>
<td>5</td>
<td>1 no 3</td>
<td>yes</td>
</tr>
<tr>
<td>6</td>
<td>3 no 7</td>
<td>yes</td>
</tr>
<tr>
<td>7</td>
<td>7 yes 8</td>
<td>yes</td>
</tr>
<tr>
<td>8</td>
<td>8 no 9</td>
<td>yes</td>
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</tbody>
</table>

Start 43 yes yes no no no yes no 0
1 Start 43 yes yes no no yes no 1
2 43 yes 44 yes yes no yes 2
3 44 yes 19 yes yes no yes 3
4 19 no 1 yes yes no yes 4
5 1 no 3 yes yes no yes 5
6 3 no 7 yes yes no yes 6
7 7 yes 8 yes yes no yes 7
8 8 no 9 yes yes no yes 8

Start 43 yes yes no no no yes no 0
1 Start 43 yes yes no no yes no 1
2 43 yes 44 yes yes no yes 2
3 44 yes 19 yes yes no yes 3
4 19 no 1 yes yes no yes 4
5 43 yes 44 yes yes no yes 5
6 44 yes 19 yes yes no yes 6
7 19 no 1 yes yes no yes 7
8 8 no 9 yes yes no yes 8

(etc)
bird ------------ bird

Tweety - Tweety
  #name -- #name
  f ------------- f
  canfly
  #f ------------- #f
  warm-blooded
  wings
  feathers
  ...
  #Bd ------------- #Bd
  #Default

(a, p = 0.66)
(b, p = 0.22)
(d, p = 1.0)
C1 small square inside large ellipse;
   D small square inside large circle #C1
C2 small square inside large ellipse;
   E large square above small ellipse #C2
C3 small square inside large ellipse;
   F small circle left-of large square #C3
C4 small square inside large ellipse;
   G small ellipse above large rectangle #C4

(a) 

small circle inside large triangle;
   large circle above small triangle

(b) 

0 1

C2
   small ---- small
circle  square
inside --- inside
large ---- large
triangle  ellipse
; -------- ;
   E
large ---- large
circle  square
above ---- above
small ---- small
triangle  ellipse
   #C2

0 1

(c) 

that boy runs
that girl runs
that boy walks
that girl walks
some boy runs
some girl runs
some boy walks
some girl walks

(a) 

< %2 2 some >
< %2 3 that >
< %1 5 boy >
< %1 6 girl >
< %3 4 runs >
< %3 7 walks >
< 1 < %2 > < %1 > < %3 > >

(b)
To higher-level pattern assemblies

From lower-level pattern assemblies and/or receptor arrays