Syntactic Theory WS09-10
Assignment 6, LFG
Solutions

19.01.2010

$$\text{IP} \rightarrow \begin{pmatrix} \text{TopicP} \\ (\uparrow \textsc{topic}) = \downarrow \\ (\uparrow \textsc{topic}) = (\uparrow \textsc{TopicPath}) \end{pmatrix} \quad \begin{pmatrix} \text{IP} \\ \uparrow = \downarrow \end{pmatrix}$$

IP → NP I'

I' → (V) VP

VP → V (NP|CP)

CP → (C) IP

NP → (D) (A) N (PP)

PP → P (NP)

TopicP ≡ {NP|PP|VP|AP|CP}

$$\textsc{TopicPath} \equiv \{\textsc{xcomp}| \begin{matrix} \textsc{comp} \\ (\rightarrow \textsc{ldd}) \neq \text{-} \end{matrix} | \begin{matrix} \textsc{obj} \\ (\rightarrow \textsc{tense}) \end{matrix}\}^* \{(\textsc{adj} \in \neg(\rightarrow \textsc{tense}))(\textsc{gf}) \mid \textsc{gf}\}$$

1. Considering the PS-rules presented above. Which of the following expressions would be accepted by the grammar? Explain your answer in one sentence for each excluded sentence.

Answers: (note that (A) has been added to the PS-rules to capture adjectives)

(ii) Chris, David gave his favourite book to.
Answer: The grammar would not accept this sentence, because there is no rule *VP* → *V NP PP*. A tree could be built for this sentence attaching the preposition to the NP, but this would result in an *incomplete* f-structure (make sure you understand why).

(iii) To Chris, David gave his favourite book.
Answer: The grammar accepts this sentence: TopicP = PP, TopicPath = obl.

(iv) Bagels, David claims he saw Chris when he ate.
Answer: This sentence will be rejected. The topic's path would have been comp adj obj. In this case, the constraint adj $\neg(\rightarrow \text{tense})$ applies, which is violated (*when he ate* has tense).

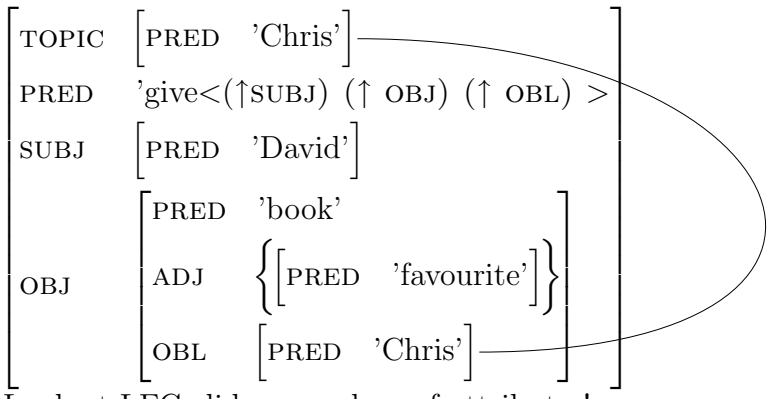
(v) Bagels, David claims he ate when he saw Chris.
Answer: This sentence would be accepted: TopicP = NP, TopicPath = comp obj. Note that the constraint (→ tense) does not apply to obj in this case, since it is the last attribute of the topic path (described by gf in meta-attribute TopicPath).

(vi) To walk, Chris seemed.
Answer: The grammar would not accept this, because it cannot accept *to walk*. It would need a rule such as *VP* → *V (VP)* (if *to* is analyzed as category V).

(vii) Brown hair, Peter saw a girl with.
Answer: The grammar would not accept this: the TopicPath would have been obj obj , where the constraint (→ tense) would have applied to the first obj (note: only to the first, not the second!).

(viii) Daniel, David gave his favourite book to Chris.
Answer: This sentence violates the extended coherence principle: the topic *Daniel* cannot be bound to any function in the sentence.

(ix) Chris, David gave his favourite book to Chris.
Answer: The same as for sentence (viii), but why? What is wrong with (simplified):



Look at LFG slides on values of attributes!

2. The provided PS-rules are clearly not perfect. Can you propose changes to improve this topicalization analysis?
   Answer:
   The grammar currently accepts sentences (iii) and (v). Examples (ii) and (vi) are excluded because of missing PS-rules. Since the rules in question should exist in English, the first improvement is adding:

   $$\text{VP} \rightarrow \text{V (NP) (NP|PP|VP)}$$
   $$\text{PP} \rightarrow \text{P} \quad \begin{pmatrix} \text{NP} \\ \uparrow = \downarrow \end{pmatrix}$$
   $$\uparrow = \downarrow$$

   The grammar now accepts (ii), (iii), (v) and (vi).
   Other improvements based on speaker judgments:

   - Casey accepted (iii), (v) and (vi). We need to exclude (ii). The easiest way to do this would be to remove the brackets around the NP in *PP → P NP*, in which case the c-structure would be rejected.
   - Charles accepts (ii) and (iii). Here the PP rule stays as it was. (v) and (vi) need to be excluded.
     (v) Two possibilities: the constraint (↑ COMP LDD) = - can be added to the lexical entry of *claim*, or disallow extraction from COMP in general (see below for definition of topic path in this case). Further investigation of data would be necessary to find out which option is right.

     $$\text{TopicPath} \equiv \{\text{XCOMP}|\ \text{OBJ}_{(\rightarrow \text{TENSE})}\}^* \{(\text{ADJ} \in)(\text{GF}) \mid \text{GF}\}_{\neg(\rightarrow \text{TENSE})}$$

(vi) Either disallow VPs from being topic in general (by redefining TopicP), or we can disallow xcomp from being extracted (by redefining gf). Data can be used to indicate which option is correct.

- Todd only accepts (ii). All constraints proposed for Casey and Chales should be applied.