Chapter 11, Problem 7: Passive and Extraposition

A. Note that because we generalized the second argument of *tv-lxm* from [HEAD *noun*] to [HEAD *nominal*], *assume* can be an *stv-lxm*.

$$\left\langle \text{assume} , \begin{bmatrix} \textit{stv-lxm} \\ \text{ARG-ST} & \langle\, [\text{INDEX } i] \,,\, [\text{INDEX } \boxed{1}] \,\rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{assume} \\ \text{SIT} & s \\ \text{ASSUMER} & i \\ \text{ASSUMED} & \boxed{1} \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

B. The third rule is the Constant Lexeme Lexical Rule, and the order is:

1. Passive LR
2. Constant Lexeme LR
3. Extraposition LR

C. Output of Passive LR:

[Note that there is no *by* PP in this lexical sequence. All lexical rule outputs are fully resolved, and (PP[FORM by]$_i$) denotes a kind of underspecification (between having the PP and not having it). Here we have resolved that underpsecification to NOT having the PP, as is appropriate for the use of *assume* in sentence (i).]

$$\left\langle \text{assumed} , \begin{bmatrix} \textit{part-lxm} \\ \text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} \\ \text{FORM} & \text{pass} \\ \text{PRED} & + \\ \text{AGR} & \boxed{2} \end{bmatrix} \\ \text{VAL} & \left[\text{SPR} \quad \langle\, [\text{AGR } \boxed{2}] \,\rangle\right] \end{bmatrix} \\ \text{ARG-ST} & \langle\, [\text{INDEX } \boxed{1}] \,\rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{assume} \\ \text{SIT} & s \\ \text{ASSUMER} & i \\ \text{ASSUMED} & \boxed{1} \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

Output of Constant Lexeme LR:

$$\left\langle \text{assumed} , \begin{bmatrix} \textit{word} & \\ \text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} & \\ \text{FORM} & \text{pass} \\ \text{PRED} & + \\ \text{AGR} & \boxed{2} \end{bmatrix} \\ \text{VAL} & \left[\text{SPR} \quad \langle\, \boxed{3}[\text{AGR } \boxed{2}] \,\rangle\right] \end{bmatrix} \\ \text{ARG-ST} & \langle\, \boxed{3}[\text{INDEX } \boxed{1}] \,\rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{assume} \\ \text{SIT} & s \\ \text{ASSUMER} & i \\ \text{ASSUMED} & \boxed{1} \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

Output of Extraposition LR:

$$\left\langle \text{assumed} , \begin{bmatrix} \textit{word} & \\ \text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} & \\ \text{FORM} & \text{pass} \\ \text{PRED} & + \\ \text{AGR} & \boxed{2} \end{bmatrix} \\ \text{VAL} & \begin{bmatrix} \text{SPR} & \langle\, \boxed{4}\text{NP}[\text{FORM it}] \,\rangle \\ \text{COMPS} & \langle\, \boxed{3}\text{CP}[\text{AGR } \boxed{2}] \,\rangle \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST} & \langle\, \boxed{4} , \boxed{3}[\text{INDEX } \boxed{1}] \,\rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{assume} \\ \text{SIT} & s \\ \text{ASSUMER} & i \\ \text{ASSUMED} & \boxed{1} \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

D.