Chapter 11, Problem 5: Optional *That*

A. ⟨ NP[CASE nom] , S[FORM fin] ⟩

B. *s-comp-verb-lxm* : $\left[\text{ARG-ST} \quad \langle\ \text{X} , \text{S[FORM fin]}\ \rangle\right]$

C. Optional *That* Lexical Rule

$$\left[\begin{array}{ll} \textit{d-rule} & \\ \text{INPUT} & \left\langle \boxed{1} , \left[\begin{array}{l}\textit{tv-lxm}\\ \text{ARG-ST} \quad \langle\ \boxed{2} , \text{CP[INDEX } \boxed{3}\text{]}\ \rangle \oplus \boxed{A}\end{array}\right]\right\rangle \\ \text{OUTPUT} & \left\langle \boxed{1} , \left[\begin{array}{l}\textit{s-comp-verb-lxm}\\ \text{ARG-ST} \quad \langle\ \boxed{2} , \text{[INDEX } \boxed{3}\text{]}\ \rangle \oplus \boxed{A}\end{array}\right]\right\rangle \end{array}\right]$$

The specification CP on the second ARG-ST element of the input resolves [HEAD nominal] on the type tv-lxm. This makes transitive verbs that can only take NP complements incompatible with the input of the rule.

D. Even with the addition of the Optional *That* Lexical Rule, the grammar will not license the ungrammatical example in (vi). While both the Optional *That* Lexical Rule and the Passive Lexical rule are *d-rule*s and thus lexeme-to-lexeme, neither can apply to the other's output. They both require the feature structure of the INPUT to be of type *tv-lxm*, and they both specify an incompatible type on the output.