Chapter 5, Problem 3: Semantics of Number Names

A. The constant predication whose VALUE value is 100 must be on the RESTR list of the lexical entry for *hundred*, as must the times predication and the plus predication.

B. The index of the specifier is identified with the value of the feature FACTOR1 in the times predication, and the index of the complement is identified with the value of the feature TERM1 in the plus predication.

C. The index of the lexical entry for *hundred* is identified with the value of the RESULT feature in the plus predication of its RESTR value.

D. The following covers uses of *hundred* with both a specifier and a complement, e.g. *two hundred five*. Uses without a complement could be handled by a separate lexical entry or by a convention that an unbound value of a TERM feature is taken to be 0.

$$
\left\langle \text{hundred},
\begin{bmatrix}
\text{SYN} &
\begin{bmatrix}
\text{HEAD} & number \\[4pt]
\text{VAL} &
\begin{bmatrix}
\text{SPR} & \left\langle \begin{bmatrix} \text{HEAD} & number \\ \text{INDEX} & l \end{bmatrix} \right\rangle \\[10pt]
\text{COMPS} & \left\langle \begin{bmatrix} \text{HEAD} & number \\ \text{INDEX} & j \end{bmatrix} \right\rangle
\end{bmatrix}
\end{bmatrix} \\[40pt]
\text{SEM} &
\begin{bmatrix}
\text{INDEX} & i \\
\text{MODE} & ref \\[4pt]
\text{RESTR} & \left\langle
\begin{bmatrix} \text{RELN} & times \\ \text{RESULT} & k \\ \text{FACTOR1} & l \\ \text{FACTOR2} & m \end{bmatrix},
\begin{bmatrix} \text{RELN} & constant \\ \text{INST} & m \\ \text{VALUE} & 100 \end{bmatrix},
\begin{bmatrix} \text{RELN} & plus \\ \text{RESULT} & i \\ \text{TERM1} & j \\ \text{TERM2} & k \end{bmatrix}
\right\rangle
\end{bmatrix}
\end{bmatrix}
\right\rangle
$$

E. The semantics of *hundred* has access to the indices of both its SPR value and its COMPS value. They can be combined in whatever way gets the right result. So long as all the necessary semantic information is available, the syntactic structure does not dictate how the semantic pieces have to be combined.