Semantic Theory 2025: Exercise 8 Key

Question 1

Consider the following sentences:

i. *Susan reads an article.*

ii. *The team does not win every match.*

iii. *If someone goes to a casino, they will lose money.*

a. Give DRS representations for each of these sentences. Underlined terms can be treated as named entities.

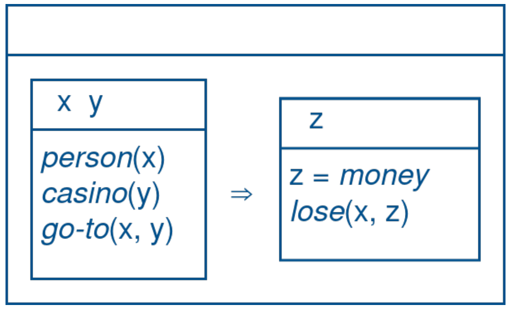
i.

$$\begin{array}{|l|}\hline \text{x y} \\ \hline \text{x} = \textit{susan} \\ \textit{article}(\text{y}) \\ \textit{read}(\text{x, y}) \\ \hline \end{array}$$

ii.

$$\begin{array}{|l|}\hline \text{x} \\ \hline \text{x} = \textit{team} \\ \neg \begin{array}{|l|}\hline \\ \hline \begin{array}{|l|}\hline \text{y} \\ \hline \textit{match}(\text{y}) \\ \hline \end{array} \Rightarrow \begin{array}{|l|}\hline \\ \hline \textit{win}(\text{x, y}) \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array}$$

iii.



b. Determine for each DRS which discourse referents are available for anaphoric reference (i.e. from a subsequent sentence).

i. $\{x, y\}$

ii. $\{x\}$

iii. $\varnothing$

c. Give the truth-conditions for the DRS corresponding to (iii). Use the verifying embeddings to arrive at the model-theoretic interpretation.

The DRS $K = (U_K, C_K)$ is true in a model $M = (U_M, V_M)$ iff there exists $f\colon U_D \nrightarrow U_M$ such that:

1. $U_K \subseteq dom(f)$: $U_K = \varnothing$, so this condition is always (trivially) satisfied.
2. f verifies K in M: $f \models_M K$

Let $K_1 = (\{x, y\}, \{person(x), casino(y), go\text{-}to(x, y)\})$ and $K_2 = (\{z\}, \{z = money, lose(x, z)\})$. Then $f \models_M K$ iff for all $g_1 \supseteq_{U_K} f$ (always trivially true) such that $g_1 \models_M K_1$, there is a $g_2 \supseteq_{\{x,y\}} g_1$ such that $g_2 \models_M K_2$.

i.e. for every $g_1\colon U_D \to U_M$ such that:

1. $g_1(x) \in V_M(person)$
2. $g_1(y) \in V_M(casino)$
3. $(g_1(x), g_1(y)) \in V_M(go\text{-}to)$

there is some $g_2\colon U_D \to U_M$ such that:

1. $g_2(x) = g_1(x)$ and $g_2(y) = g_1(y)$
2. $g_2(z) = V_M(money)$
3. $(g_2(x), g_2(z)) \in V_M(lose)$

Question 2

Formulate the λ-DRSs for the following lexical items:

a. *every*: $\langle\langle e,t\rangle,\langle e,t\rangle,t\rangle$ $\lambda P\lambda R.([x\,|\,\varnothing] + P(x)) \Rightarrow R(x)$

b. *a*: $\langle\langle e,t\rangle,\langle e,t\rangle,t\rangle$ $\lambda P\lambda R.[x\,|\,\varnothing] + P(x) + R(x)$

c. *have*: $\langle e,\langle e,t\rangle\rangle$ $\lambda x\lambda y.[\varnothing\,|\,have(x,y)]$