Problem Set 3

Due September 15 before class. Submit on IVLE > Files > Student Submission > PS3.
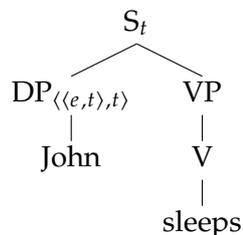
Note: Whenever you're asked to "compute the truth conditions for [complex structure with tree]," for each node in the tree, you need to give (a) its semantic type, (b) its denotation, and (c) the rule that you used (TN, FN, NN, etc.). Show your work.

1. **Type equations:** Do exercise 6 on Winter page 92. *Write your answers using Heim & Kratzer* $\langle \tau, \sigma \rangle$ *notation for types.*

2. **Higher-type DPs:** So far we have treated proper name DPs as being type e.

   (a) Give a semantics for "John" of type $\langle \langle e, t \rangle, t \rangle$.

   (b) Compute the truth conditions for "John sleeps" using this new semantics for "John":[1]

$$
\begin{array}{c}
S_t \\
\diagup \quad \diagdown \\
DP_{\langle \langle e,t \rangle, t \rangle} \qquad VP \\
| \qquad\qquad | \\
John \qquad\quad V \\
\qquad\qquad\quad | \\
\qquad\qquad sleeps
\end{array}
$$

3. **Conjunction(s):** For each example, draw its tree and compute its truth conditions.[2] Use type e meanings for the names, "John," "Mary," "Kara," and "Tama."

   (1) John sits and Mary stands.

   (2) Kara sleeps and likes Tama.

   For (1), use the following denotation for "and":

   (3) $[\![\text{and}]\!] = \lambda p \in D_t \, . \, \lambda q \in D_t \, . \, p = 1$ and $q = 1$

   For (2), you will have to define a different denotation for "and." (Hint: start by computing types using the triangle method.)

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[1] We ignore the internal syntax of the DP "John."

[2] The syntax can be simple as in class with sentences as S nodes (no need for T/Infl) with subject and VP daughters. Don't worry too much about syntactic category labels.