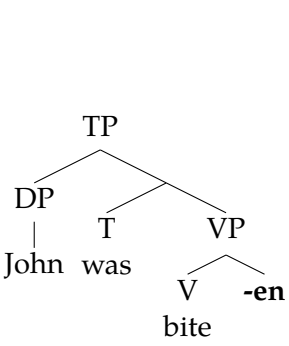
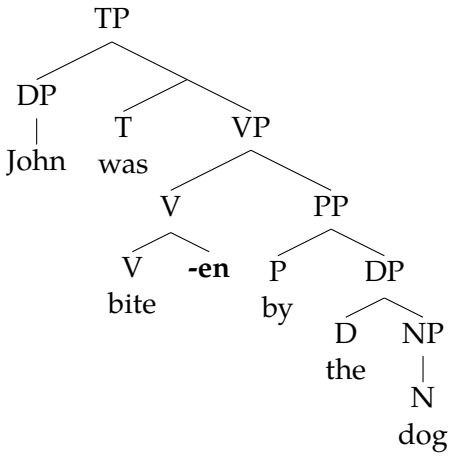
Problem Set 4

Due September 26 at noon. Submit on IVLE > Files > Student Submission > PS4.

1. **Passivization:** Choose one of the trees below. Propose a semantics for the passive morpheme ⟦-en⟧ for the tree. ("bite-en" is pronounced "bitten.")





Then compute the truth conditions for this sentence, giving semantic types, denotations, and the rule used for each node. (If you choose the second tree, assume ⟦by⟧ = Id, an identity function.)

Suggestion: Start by writing the denotation for ⟦bite⟧ as in "The dog bit John," and then write the truth conditions for ⟦John was bitten⟧ or ⟦John was bitten by the dog⟧, and work backwards.

2. ***Fake*:** The semantics for adjectives that we have developed has the following property: if an individual is a [Adj N] then it is a N. In general this is fine. For example, the entailment in (1) is true.

   (1) Kara is a black cat. ⇒ Kara is a cat.

   However, this is a problem for adjectives like *fake*.

   (a) First assume ⟦fake⟧ = λx . x is fake . Compute the truth conditions for (2). Remember to give a tree and then for each node, give its semantic type, denotation, and what rule was used.[1] Show that the truth conditions you derived for (2) entails that (3).

   (2) This is a fake diamond.

   (3) This is a diamond.

[1] Assume ⟦this⟧ ∈ D_e. Its identity is not important here.

(b) Write a different semantics for ⟦fake⟧ which does not run into this problem. Then recompute the truth conditions for (2), again showing all steps.

Hints: The entailment that "(2) ⇒ (3)" will be predicted as long as Predicate Modification is used to compose "fake" and "diamond." So another rule must be used. Then what type must ⟦fake⟧ be?