Notes and reminders

• This is due on Mar 2, by 10:30 am Pacific. No late work will be accepted.
• You must submit your work electronically via Canvas.
• No collaboration of any kind is permitted. You are, though, free to use your notes and any other reference materials you like.
• Please submit questions on the Ed forum or to the staff email address. Questions sent to individual instructors probably won’t be answered.

1 Scalar adjective experimental predictions [1 point]

On the theory developed by Syrett et al., what is the expected pattern of behavior (for children and adults) for the prompt ‘Hand me the bent one’ in an experimental condition in which the subject is presented with two rods, both clearly bent, with one bent noticeably more than the other? (1–2 sentence response.)

2 A (non-existent) non-conservative determiner [2 points]

Consider the hypothetical quantificational determiner llarof:

\[ [[\text{llarof}]] = \{ \langle A, B \rangle : B \subseteq A \} \]

Thus, \text{llarof hippos skateboard} would be true just in case the set of hippos was a superset of the set of skateboarders. Show that this hypothetical determiner is not conservative. To do this, you just need to find a counterexample – sets \( A \) and \( B \) that fail the conservativity test when given as arguments to \( [[\text{llarof}]] \) – and explain why those sets constitute a counterexample.

3 Characteristic set [1 point]

What is the characteristic set of the following function?

\[
\begin{array}{c}
\{a, b\} & \rightarrow & T \\
\{a\} & \rightarrow & T \\
\{b\} & \rightarrow & F \\
a & \rightarrow & T \\
b & \rightarrow & F \\
\end{array}
\]
4  Functional application  

Reduce the following expressions by applying the necessary application and substitution steps. You should reduce the expressions as far as is possible, including subexpressions.

i. \((\lambda x (x > 4 \text{ and } x < 10))(5)\)

ii. \((\lambda y (\lambda x (y > x)))(4)\)

iii. \((\lambda f (\lambda x (x < f(4))))(\lambda y (y - 1))\)

5  Functional quantifier  

Give a functional denotation for the quantificational determiner at least seven. (For examples of such denotations, see section 5.7 of the ‘Semantic composition’ handout.)

6  Compositional analysis  

For the top (root) node in the following tree, provide (i) the name of the rule you used to derive that meaning from its constituent parts, according to the handout ‘Semantic composition’, and (ii) the meaning itself after all the allowable substitutions from functional applications.
7 Where ever can appear

The English adverbial particle ever has a highly restricted distribution. On the basis of the following examples (where * marks ungrammatical cases, as usual), formulate a generalization in terms of the monotonicity properties of determiners about where ever can appear:

(7) a. No [NP students who have ever taken semantics] [VP have been to Peru]
   b. No [NP students] [VP have ever been to Peru]
   c. *Some [NP students who have ever taken semantics] [VP have been to Peru]
   d. *Some [NP students] [VP have ever been to Peru]
   e. At most three [NP students who have ever taken semantics] [VP have been to Peru]
   f. At most three [NP students] [VP have ever been to Peru]
   g. Exactly three [NP students who have ever taken semantics] [VP have been to Peru]
   h. Exactly three [NP students] [VP have ever been to Peru]
   i. Every [NP student who has ever taken semantics] [VP has been to Peru]
   j. *Every [NP student] [VP has ever been to Peru]

Please restrict your attention to this set of examples when formulating your generalization, and accept the grammaticality judgments as given (even if you disagree with them).

Note: I’ve used square bracketing to indicate the basic syntactic structure of these cases. In all cases, the string inside [NP ...] corresponds to the restriction of the determiner semantically, and the string inside [VP ...] corresponds to the scope of the determiner semantically.

8 Novel compounds

In Levin et al.’s free-response comprehension experiment, 19/20 responses for salad glove were coded as ‘Purpose’. (The one other response was ‘Color’.) Is this expected under their account? Say why or why not. In writing your answer, make sure to (1) classify the modifier, the head, and the compound itself as artifact or natural kind, and (2) make meaningful use of the relevant core hypothesis from their paper. 3–4 sentences should suffice.
9 Quantifiers, entailments, and implicatures [2 points]

A classic Gricean argument is that *few* is semantically consistent with *no* but tends to exclude it pragmatically because of a quality–quantity interaction. (If the speaker of *few* knew that the corresponding *no* statement was true [quality], they would have said so, because it is more informative [quantity].) This argument depends on the semantic claim that *no* entails *few*. Your task is to support this claim, assuming the following set-theoretic meanings (your argument will carry over immediately to the functional view):

- \([\text{few}] = \{ \langle A, B \rangle : |A \cap B| \leq k \cdot |A| \}\) (where \(0 < k < 1\); \(k\) is a pragmatic free variable)
- \([\text{no}] = \{ \langle A, B \rangle : A \cap B = \emptyset \}\)

In this context, a determiner meaning \(D_1\) entails another determiner \(D_2\) if and only if \([D_1] \subseteq [D_2]\). Thus, your task is simply to show that \([\text{no}] \subseteq [\text{few}]\).

10 Extra credit: PNs as quantifiers [up to 1 point]

In our current semantic grammar, the VP meaning applies to the subject meaning when the subject is a PN, whereas the VP meaning is the argument of the subject meaning when the subject is a QP. Some people find this mixed directionality unsatisfying. The simplest way to address it is to raise the type of PNs so that they take VP meanings as arguments, which makes them QPs (and allows us to use rule Q2 with them). Your task: describe such a quantificational meaning for the proper name *Lisa*. This meaning should be a function from functions into truth values, it should deliver truth conditions that are identical to the ones we obtain in the current grammar, and it should immediately generalize to other PNs.