Notes and reminders

• This is due on Mar 17, by 3:15 pm. No late work will be accepted.
• You must submit your work electronically to the usual course address: linguist130a-win1516-staff@lists.stanford.edu
• No collaboration of any kind is permitted. You are, though, free to use your notes and any other reference materials you like.

1 Monotonicity

Recall that a determiner \( \text{det} \) is downward monotone on its first argument if, for all sets \( A, A', \) and \( B \), if \( A' \subseteq A \), then \( \text{det}(A,B) \) entails \( \text{det}(A',B) \). Show that \textit{at most four}, as defined here, is downward monotone on its first argument:

\[
\{ (A,B) : |A \cap B| \leq 4 \}
\]

2 Quantifiers and negation

Many people have the intuition that \textit{most} is true “above 60% and below 100%”. In our terms, that would lead to the following denotation:

\[
[\textit{most}] = \left( \lambda f \left( \lambda g \left( \text{if } 0.6 < \frac{|\{w : f(w) = g(w) = \top\}|}{|\{w : f(w) = \top\}|} < 1, \text{ else } \bot \right) \right) \right)
\]

The issue: what happens when such meanings are negated? Your tasks:

i. Substitute the above lambda expression into the following and perform all possible lambda application steps:

\[
\lambda x \left( \left( [\textit{most}]([\textit{Simpsons}]) \right) \left( \lambda y \left( ([\textit{tease}]y)(x) \right) \right) \right)
\]

ii. Apply the following negation function to the meaning you obtained above and perform all lambda application steps:

\[
\lambda f \left( \lambda z \left( \text{if } f(z) = \top, \text{ else } \bot \right) \right)
\]

iii. Is the function you derived in (ii) true of an entity that teased all of the Simpsons? Your answer here can be a simple “yes” or “no”. You needn’t offer an opinion on whether this outcome is desirable.
3 Partial functions

The following is a partial function over functions defined over the universe \{\(\small\text{\ding{185}}, \small\text{\ding{186}}, \small\text{\ding{187}}, \small\text{\ding{188}}\}\):

\[
\begin{array}{c}
\begin{bmatrix}
\begin{bmatrix}
\text{\ding{185}} & \rightarrow & \text{T} \\
\text{\ding{186}} & \rightarrow & \text{F} \\
\text{\ding{187}} & \rightarrow & \text{F} \\
\text{\ding{188}} & \rightarrow & \text{F}
\end{bmatrix} & \rightarrow & \text{\ding{185}} \\
\begin{bmatrix}
\text{\ding{185}} & \rightarrow & \text{F} \\
\text{\ding{186}} & \rightarrow & \text{T} \\
\text{\ding{187}} & \rightarrow & \text{F} \\
\text{\ding{188}} & \rightarrow & \text{F}
\end{bmatrix} & \rightarrow & \text{\ding{186}} \\
\begin{bmatrix}
\text{\ding{185}} & \rightarrow & \text{F} \\
\text{\ding{186}} & \rightarrow & \text{F} \\
\text{\ding{187}} & \rightarrow & \text{T} \\
\text{\ding{188}} & \rightarrow & \text{F}
\end{bmatrix} & \rightarrow & \text{\ding{187}} \\
\begin{bmatrix}
\text{\ding{185}} & \rightarrow & \text{F} \\
\text{\ding{186}} & \rightarrow & \text{F} \\
\text{\ding{187}} & \rightarrow & \text{T} \\
\text{\ding{188}} & \rightarrow & \text{F}
\end{bmatrix} & \rightarrow & \text{\ding{188}}
\end{bmatrix}
\end{array}
\]

Give the value of the above function for the following separate inputs:

i. \(\begin{bmatrix}
\text{\ding{185}} & \rightarrow & \text{T} \\
\text{\ding{186}} & \rightarrow & \text{F} \\
\text{\ding{187}} & \rightarrow & \text{F} \\
\text{\ding{188}} & \rightarrow & \text{T}
\end{bmatrix}\)

ii. \(\begin{bmatrix}
\text{\ding{185}} & \rightarrow & \text{T} \\
\text{\ding{186}} & \rightarrow & \text{F} \\
\text{\ding{187}} & \rightarrow & \text{F} \\
\text{\ding{188}} & \rightarrow & \text{T}
\end{bmatrix}\)

4 Presuppositional determiner

Give a functional denotation for the presuppositional determiner \textit{neither} as used in \textit{Neither parent smokes}. Use the meaning for \textit{both} from the ‘Presupposition’ handout as a model.

5 Presuppositions

Intuitively, it is odd to use every \(A\ B\) where \(both\ A\ B\) is defined. Use our treatment of every and both to give a Gricean explanation for this intuition. (2–3 sentences)
6 What kind of meaning is this? [4 points]

The handout ‘Diagnosing different kinds of meaning’ provides a flow-chart for classifying meanings as variously at-issue, conventionally implicated, presupposed, or conversationally implicated. For each of the following sentences, classify its associated target meaning according to this rubric. For each test that you need to run (until you reach a decision), provide (i) the example that results from applying the test to the sentence to assess the status of the target meaning, and (ii) a judgment as to what the test example tells us. Examples of complete answers are in section 3 of the handout.

i. Sentence: The zoo has few pandas.
   Target meaning: the zoo has some pandas

ii. Sentence: Carol was forced to sell her computer.
   Target meaning: Carol sold her computer

7 Illocutionary effects [2 points]

In Speaking of Crime, Solan and Tiersma observe that people in police custody often perform the speech act of invoking their right to counsel very indirectly, with utterances like “Maybe I need a lawyer”. Your task: using the properties of illocutionary force given in section 4.2 of the ‘Speech acts’ handout, give two reasons why people in custody might behave in this way. (There are a number of sensible reasons that connect with the illocutionary force properties. You can just pick two. We expect each reason to take 2–4 sentences to describe.)

8 Swearing and the FCC [3 points]

Provide two cogent linguistic or cognitive arguments in favor of the position that swears like the F-word should be subject to different legal restrictions than other kinds of speech. (2–4 sentences per argument; the arguments might not be persuasive to you, but they should make sense!)