Notes and reminders

• This is due on Mar 20, by 3:15 pm. No late work will be accepted. (This is also the final due date for all late work.)
• 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 to linguist130a-win1819-staff@lists.stanford.edu. Questions sent to individual instructors won’t be answered.

1 Monotonicity [2 points]

Here is a possible (though not necessarily empirically correct) definition of the quantificational determiner $\text{[}\text{most}\text{]}$:

\[
\text{[}\text{most}\text{]} = \left\{ (A, B) : \frac{|A \cap B|}{|A|} > \frac{1}{2} \right\} = \left\{ (A, B) : |A \cap B| > |A - B| \right\}
\]

Diagnose the first (restriction) argument as upward, downward, or nonmonotone, and explain why this holds using $\text{[}\text{most}\text{]}$. (Note: this isn’t a question about your intuitions, but rather about what we are predicting with $\text{[}\text{most}\text{]}$.)

2 Quantifiers and negation [3 points]

Many people have the intuition that $\text{few}$, as in \textit{Few students danced}, is true if and only if the number of students who danced is greater than 0 and below a small number $n$. In our terms, that would lead to the following denotation:

\[
\text{[}\text{few}\text{]} = (\lambda f \ (\lambda g \ (T \ if \ 0 < |\{w : f(w) = T\} \cap \{w : g(w) = T\}| < n, \ else \ F)))
\]

where $n$ is the small, contextually-determined value. Previously we have assumed that few statements are true in the 0 case.

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:

\[
\lambda x \left( \left( \text{[}\text{few}\text{]} \left( \text{[Simpsons]} \right) \right) \left( \lambda y \left( \left( \text{[tease]}(y) \right)(x) \right) \right) \right)
\]
ii. Apply the following negation function to the meaning you obtained above and perform all lambda application steps:
\[ \lambda f \ (\lambda z \ (F \ \text{if } f(z) = T, \ \text{else } T)) \]

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

3 RSA implicatures

Here is a simple reference game:

<table>
<thead>
<tr>
<th></th>
<th>r₁</th>
<th>r₂</th>
<th>r₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘hat’</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>‘glasses’</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>‘mustache’</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

(a) \n
<table>
<thead>
<tr>
<th></th>
<th>r₁</th>
<th>1/3</th>
<th>r₂</th>
<th>1/3</th>
<th>r₃</th>
<th>1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘hat’</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘glasses’</td>
<td>0.75</td>
<td>0.25</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘mustache’</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) P

(c) C

The basic RSA model can be said to predict that a pragmatic listener will draw a particular conversational implicature given this reference game. Here is the table of conditional probabilities representing that listener (with \( \alpha = 1 \)):

<table>
<thead>
<tr>
<th></th>
<th>r₁</th>
<th>r₂</th>
<th>r₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘hat’</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>‘glasses’</td>
<td>0.75</td>
<td>0.25</td>
<td>0</td>
</tr>
<tr>
<td>‘mustache’</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Your tasks:

i. Say what that implicature is and how it is manifested in this table of conditional probabilities.

ii. What is the effect on this implicature of changing the prior to \( P(r₂) = 0.2 \) and \( P(r₁) = P(r₃) = 0.4 \)? Provide the pragmatic listener table of conditional probabilities for this scenario (with two digits of precision) and make use of it in giving your answer.

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 Partial functions

The following is a partial function over functions defined over the universe \{😊, ☻, ☹, 🎶\}:

\[
\begin{bmatrix}
😊 & ➞ & T \\
☻ & ➞ & F \\
坷 & ➞ & T \\
🎶 & ➞ & F \\
\end{bmatrix} \rightarrow \begin{bmatrix}
😊 & ➞ & T \\
☻ & ➞ & F \\
坷 & ➞ & F \\
🎶 & ➞ & T \\
\end{bmatrix}
\]

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

i. 😊

\[
\begin{bmatrix}
😊 & ➞ & T \\
☻ & ➞ & F \\
坷 & ➞ & F \\
🎶 & ➞ & F \\
\end{bmatrix}
\]

ii. ☻

\[
\begin{bmatrix}
😊 & ➞ & T \\
☻ & ➞ & F \\
坷 & ➞ & F \\
🎶 & ➞ & F \\
\end{bmatrix}
\]

6 every and presuppositionality

On Assignment 4, you gave a Gricean explanation for why it is generally odd for a speaker to say every A B if they know that [A] is not true of any entities. An alternative analysis would be that every actually presupposes that [A] is true of at least one entity. Your tasks:

i. Formulate this presuppositional [every] as a partial quantificational determiner meaning (same kind of meaning as, e.g., [both]).

ii. Articulate what this analysis predicts about the monotonicity properties of every, and explain why it makes these predictions using a technical argument (same format as in question 1 above).
7 What kind of meaning is this?  

The handout ‘Diagnosing different kinds of meaning’ provides a flow-chart for classifying meanings as variously at-issue, conventionally implicated, presupposed, or conversationally implicated. Use that framework to classify meaning \( p \) as expressed in (A).

(A) It’s amazing that Carol ran the marathon.

\( p = \text{Carol ran the marathon} \).

Section 3 of the handout provides model answers. Your own answer could adopt the same format, and we’re looking for a similar level of explanation about the relevant examples.

8 Illocutionary effects  

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.)

9 Swearing and the FCC  

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!)

10 Extra credit: Object quantifiers  

Our theory of composition has (at least) one shocking shortcoming: we are not able to interpret QPs when they are the objects of transitive verbs, but rather only when they are grammatical subjects. We can’t give a meaning to a seemingly simple phrase like *tease every Simpson*! Address the shortcoming by completing the following rule of composition:

\[
(QV) \quad \text{Given a syntactic structure } VP, \quad [VP] = \ \ \\
\quad \quad \quad V \quad QP
\]