Exam 2

Chris Potts, Ling 130a/230a: Introduction to semantics and pragmatics, Winter 2019

Distributed Mar 14; due Mar 20, 3:15 pm

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 $[\![most]\!]$:

$$\begin{aligned}[\![most]\!] &= \left\{\langle A, B\rangle : \tfrac{|A\cap B|}{|A|} > \tfrac{1}{2}\right\} \\ &= \{\langle A, B\rangle : |A\cap B| > |A - B|\}\end{aligned}$$

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

2 Quantifiers and negation [3 points]

Many people have the intuition that *few*, as in *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:

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

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:

$$\lambda x\left(\left([\![few]\!]\left([\![Simpsons]\!]\right)\right)\left(\lambda y\left(\left([\![tease]\!](y)\right)(x)\right)\right)\right)$$

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

$$\lambda f\ (\lambda z\,(\text{F if } f(z) = \text{T},\ \text{else T}))$$

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 [2 points]

Here is a simple reference game:

	r_1	r_2	r_3
'hat'	0	0	1
'glasses'	1	1	0
'mustache'	0	1	0

(a) $[\![\cdot]\!]$

r_1	1/3
r_2	1/3
r_3	1/3

(b) P

'hat'	0
'glasses'	0
'mustache'	0

(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 $\alpha = 1$):

	r_1	r_2	r_3
'hat'	0	0	1
'glasses'	0.75	0.25	0
'mustache'	0	1	0

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 $P(r_2) = 0.2$ and $P(r_1) = P(r_3) = 0.4$? 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 [2 points]

Give a functional denotation for the presuppositional determiner *neither* as used in *Neither parent smokes*. Use the meaning for *both* from the 'Presupposition' handout as a model.

5 Partial functions [2 points]

The following is a **partial** function over functions defined over the universe $\{\text{☺}, \text{☹}, \text{🕒}, \text{♫}\}$:

$$\begin{bmatrix} \begin{bmatrix} \text{☺} & \mapsto & \mathtt{T} \\ \text{☹} & \mapsto & \mathtt{F} \\ \text{🕒} & \mapsto & \mathtt{T} \\ \text{♫} & \mapsto & \mathtt{F} \end{bmatrix} \mapsto \text{☺} & \begin{bmatrix} \text{☺} & \mapsto & \mathtt{F} \\ \text{☹} & \mapsto & \mathtt{T} \\ \text{🕒} & \mapsto & \mathtt{F} \\ \text{♫} & \mapsto & \mathtt{F} \end{bmatrix} \mapsto \text{☹} \\ \\ \begin{bmatrix} \text{☺} & \mapsto & \mathtt{F} \\ \text{☹} & \mapsto & \mathtt{F} \\ \text{🕒} & \mapsto & \mathtt{T} \\ \text{♫} & \mapsto & \mathtt{F} \end{bmatrix} \mapsto \text{🕒} & \begin{bmatrix} \text{☺} & \mapsto & \mathtt{F} \\ \text{☹} & \mapsto & \mathtt{F} \\ \text{🕒} & \mapsto & \mathtt{F} \\ \text{♫} & \mapsto & \mathtt{T} \end{bmatrix} \mapsto \text{♫} \end{bmatrix}$$

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

i. ☺

ii. $\begin{bmatrix} \text{☺} & \mapsto & \mathtt{T} \\ \text{☹} & \mapsto & \mathtt{F} \\ \text{🕒} & \mapsto & \mathtt{F} \\ \text{♫} & \mapsto & \mathtt{F} \end{bmatrix}$

6 *every* and presuppositionality [2 points]

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 $[\![\textit{every}]\!]$ as a partial quantificational determiner meaning (same kind of meaning as, e.g., $[\![\textit{both}]\!]$).

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? [2 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. Use that framework to classify meaning p as expressed in (A).

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

$p =$ 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 [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.)

9 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!)

10 Extra credit: Object quantifiers [up to 1 point]

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) Given a syntactic structure $[_{VP}\ V\ QP]$, $[\![VP]\!] =$