# Exam 1

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

Distributed Feb 12; due Feb 14

## Notes and reminders

- This is due on Feb 14, by 10:30 am. 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 Piazza or to the staff address: `linguist130a-win1819-staff@lists.stanford.edu`. Questions sent to individual instructors probably won't be answered.

## 1 Scalar adjectives [3 points]

On the theory developed by Syrett et al. (2009, 'Meaning and context in children's understanding of gradable adjectives'), what is the expected pattern of behavior (for children and adults) for the prompt 'Hand me the full one' in an experimental condition in which the subject is presented with two cups, one noticeably fuller than the other but neither full in any absolute sense? Are the results of their experiment 1 consistent with this expectation? (2–3 sentence response.)

## 2 Functional application [3 points]

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. $\Big(\lambda x\big(x > 4 \text{ and } x < 10\big)\Big)(5)$

ii. $\Big(\lambda x\big(\lambda y\,(x > y)\big)\Big)(4)$

iii. $\Big(\lambda f\,\big(\lambda x\,(x < f(5))\big)\Big)\big(\lambda y\,(y+1)\big)$

## 3 Monotonicity [2 points]

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

$$[\![\textit{few}]\!] = \{\langle A, B\rangle : |A \cap B| \leqslant n\}$$

where $n \geqslant 0$ is a pragmatic free variable (presumably set to a very small integer, though the size might depend on the nature of $A$ and $B$). Diagnose the first (restriction) argument as upward, downward, or nonmonotone, and explain why this holds using $[\![\textit{few}]\!]$. (Note: this isn't a question about your intuitions, but rather about what we are predicting with $[\![\textit{few}]\!]$.)

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

Consider the hypothetical quantificational determiner *sizele*:

$$[\![\textit{sizele}]\!] = \{\langle A, B\rangle : |A| < |B|\}$$

Thus, *sizele hippos skateboard* would be true just in case the set of hippos had smaller cardinality than 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 $[\![\textit{sizele}]\!]$ – and explain why those sets constitute a counterexample. We advise using abstract sets like $\{x, y, z\}$ rather than trying to reason about real properties.

# 5 Functional quantifier [2 points]

Give a functional denotation for the quantificational determiner *exactly seven*. (For examples of such denotations, see section 5.7 of the 'Semantic composition' handout.)

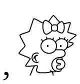
# 6 Compositional analysis [4 points]

For each of the top (root) nodes in the following trees, 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. Thus, for example, given the tree on the left, the answer at right would be complete and accurate:

VP

V — loves

PN — Maggie

Rule (TV) derives $\lambda x \Big($ T if $\langle x,$  $\rangle \in \{\langle a, b\rangle : a \text{ loves } b\}$, else F $\Big)$

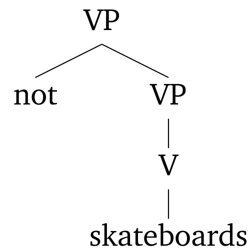
## 6.1

QP

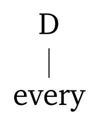
D — a

NP — N — parent

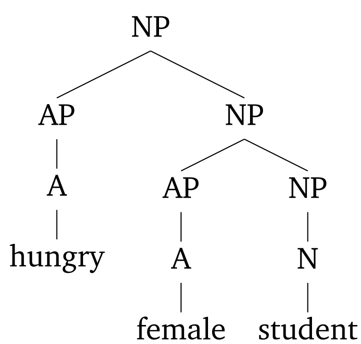
### 6.2




### 6.3




### 6.4




## 7 Where *ever* can appear [2 points]

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 [$_{\text{NP}}$ students who have ever taken semantics ] [$_{\text{VP}}$ have been to Peru ]
b. No [$_{\text{NP}}$ students ] [$_{\text{VP}}$ have ever been to Peru ]
c. *Some [$_{\text{NP}}$ students who have ever taken semantics ] [$_{\text{VP}}$ have been to Peru ]
d. *Some [$_{\text{NP}}$ students ] [$_{\text{VP}}$ have ever been to Peru ]
e. At most three [$_{\text{NP}}$ students who have ever taken semantics ] [$_{\text{VP}}$ have been to Peru ]
f. At most three [$_{\text{NP}}$ students ] [$_{\text{VP}}$ have ever been to Peru ]
g. Exactly three [$_{\text{NP}}$ students who have ever taken semantics ] [$_{\text{VP}}$ have been to Peru ]
h. Exactly three [$_{\text{NP}}$ students ] [$_{\text{VP}}$ have ever been to Peru ]
i. Every [$_{\text{NP}}$ student who has ever taken semantics ] [$_{\text{VP}}$ has been to Peru ]
j. *Every [$_{\text{NP}}$ student ] [$_{\text{VP}}$ 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 $[_{\text{NP}} \ldots]$ corresponds to the restriction of the determiner semantically, and the string inside $[_{\text{VP}} \ldots]$ corresponds to the scope of the determiner semantically.

## 8 A surprising indefinite [2 points]

It's common to knock on the door of a locked public restroom and hear (1a) uttered from inside the restroom. Use Grice's maxims to explain why this response is favored over each of (1b) and (1c). (Be sure to argue that it is superior to each of them separately.)

(1) a. "Someone's in here."

b. "*X* is in here!" (where *X* is the speaker's name)

c. "Albania's chief export is chrome!" (or something else arbitrary in the language of the speech community)

## 9 Optional extra credit: Earn up to 1 point or more [1 point]

One often hears phrases of the form *up to X or more*, as in "Bonus up to $100 or more" or "Up to two weeks or more". First, provide a meaning for *up to 10 or more* as a quantificational determiner (i.e., as a set of pairs of sets), as in *Up to 10 or more students danced*. Second, for a universe $U$, how does the meaning you defined relate to the set of all pairs of subsets of $U$ (often given as $\wp(U) \times \wp(U)$, where $\wp(U)$ is the power set of $U$ and $A \times B = \{\langle a, b\rangle : a \in A \text{ and } b \in B\}$).