# Assignment 4

Chris Potts, Ling 130a/230a: Introduction to semantics and pragmatics, Winter 2022

Distributed Feb 1; due Feb 8

## 1 *neither* vs. *none* [2 points]

In what ways do *neither* and *none* differ? Both seem to have 'negation' about them, but they are not synonyms. Identify two differences between them. These differences can concern your intuitions about syntactic well-formedness or meaning. Notes:

- For each difference, you'll want to present a pair of sentences that differ only in that one uses *neither* and the other uses *none*.
- If well-formedness is the issue, presumably one of the pair will strike you as ungrammatical and the other grammatical. Use the linguist's * to mark the ungrammatical one. In 1–2 sentences, articulate what you see as the nature of the contrast.
- If meaning is the issue, both sentences should be well-formed, but they should differ in what they assume about the context of utterance and/or what they convey. In 1–2 sentences, articulate what you see as the difference(s).

Deciding whether contrasts like these relate to meaning or to form can be challenging and indeterminate. We're open-minded about these categorizations.

If you are interested in doing this problem in another language, write to the staff to discuss that idea – there are lots of options, but we might want to check that you've found a relevant lexical contrast.

## 2 Intersective? [2 points]

Determine whether the phrasal determiner *less than half*, as defined here, is intersective:

$$[\![\textit{less than half}]\!] = \lambda X\left(\lambda Y\left(\mathsf{T} \text{ if } \frac{|X \cap Y|}{|X|} < \frac{1}{2}, \text{ else } \mathsf{F}\right)\right)$$

**Important note**: this is 'intersective' in the sense of the Keenan article and the 'Quantifier properties' handout, not 'intersective' in the sense of the Partee article and our discussion of adjectives.

Required ingredients:

i. Provide a pair of English sentences that supports the classification as intersective or not intersective, along with arrows indicating which entailment relations do and do not hold.

ii. If an entailment relation doesn't hold, use the definitions of intersectivity and $[\![\textit{less than half}]\!]$ to explain why. The key step here is to identify abstract sets $A$ and $B$ for which the entailment fails to hold and use them to construct your argument. You are strongly encouraged to do this in terms of sets like $A = \{a, b, c\}$ rather than in terms of natural language predicates like *student* to ensure that your argument is precise and unambiguous.

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

Consider the hypothetical quantificational determiner *hartig*:

$$[\![hartig]\!] = \lambda X\Big(\lambda Y\big(\mathsf{T} \text{ if } |X| = |Y|, \text{ else } \mathsf{F}\big)\Big)$$

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 $[\![hartig]\!]$ – and explain why those sets constitute a counterexample. Please do not give your argument in terms of English sentences. Since *hartig* is not a real determiner, such sentences don't make sense and so cannot carry the argument.

## 4 Cardinals and universal generalizations [4 points]

Keenan offers the universal generalization "Lexical NPs are always monotonic" (p. 49). Here, "lexical" means just a single word in the intuitive sense, and we assume that Keenan intends to say "always monotonic on their second arguments", since *most* is not monotonic on its first argument.

In light of this generalization, consider the following two analyses of the determiner *three*:

(E) $\lambda X\Big(\lambda Y\big(\mathsf{T} \text{ if } |X \cap Y| = 3, \text{ else } \mathsf{F}\big)\Big)$ ('exactly' semantics)

(A) $\lambda X\Big(\lambda Y\big(\mathsf{T} \text{ if } |X \cap Y| \geqslant 3, \text{ else } \mathsf{F}\big)\Big)$ ('at least' semantics)

**Task 1** For each of (E) and (A), diagnose the second (scope) argument as upward monotone, downward monotone, or nonmonotone, and explain why this holds using the formal definitions given in (E) and (A). (Note: this isn't a question about your intuitions, but rather about what we are predicting with (E) and (A). Thus, it will again be best to give arguments using sets like $A = \{a, b, c\}$ rather than natural language sentences.)

**Task 2** Which of the proposed meanings seems more accurate to you empirically as a meaning for *three*? In a few sentences, say which one you favor and why. (To do this, it might be easiest to show that the one you disfavor gives the wrong results for some particular case or cases.)