

Computational NL Semantics (320541) Spring 2015

Assignment 5: Treatment of Adjectives

– Given March 18., Due March 21. –

Types and translations for adjectives:

Recall the properties of adjectives like *blue*, *French*, *happy*, *forgetful*: If something is a blue diamond, then it is blue and it is a diamond. If someone is a French journalist, then she is French and she is a journalist. The next task is to give types and translations for adjectives of this kind. However, there is more than one way to do this, so you will get to explore a couple of options. We assume throughout that attributive adjectives combine with CNPs.

Problem 5.1 (Adjectives Version 1)

Assume, as we have so far, that the translation of a branching node is arrived at by function application. Specify the type for attribute adjectives in NPs such as *the blue diamond*. Then give a translation of this type for such adjectives. 10pt

Problem 5.2 (Adjectives Version 2)

Now assume that the type of the translation of attributive adjectives is $\iota \rightarrow o$. Try to come up with an alternative way of specifying the translation of the CNP node under this assumption, to give the same results as you obtained in Version 1. 10pt

Problem 5.3 (Predicative adjectives)

Our fragment generates sentences of the form *Jane is happy*, *The diamond is blue*. Assume that predicative *be* denotes the identity function. (Alternatively, you can say that it is invisible to the translation rules.) Can either of the analyses you have given be extended directly to adjectives in this construction? If not, what modifications need to be made? 20pt

Problem 5.4 (Some more complicated cases)

Not all adjectives behave quite as nicely as the ones you just analyzed. Consider these: *big*, *small*, *tall*, *short*. Note that if something is a big ant, then it must be an ant but is not normally what we call big. However, it must be big for an ant. Similarly, if something is a short skyscraper, it must be a skyscraper, but is probably not something we would normally call short. However, it must still be short for a skyscraper. 20pt

Consider whether these adjectives are best treated along the lines of Problem 5.1 or Problem 5.2 above. Make a choice, and then offer a translation for *big*. If you don't see a way to translate it which will directly predict its behavior, simply translate it as big and specify the desired denotation for this constant.

Problem 5.5 (And yet more complications)

A fake diamond is not a diamond; an alleged murderer is not necessarily a murderer. Suggest a way of treating either of these adjectives. 10pt