Natural Language Processing: Part II
Overview of Natural Language Processing (L90): Part III/ACS
Exercises for lectures 10 and 11

1   Lecture 10

1.1   Pre-lecture

There is an online experiment to collect training data for anaphor resolution at `http://anawiki.essex.ac.uk/phrasedetectives/`. Spending a few minutes on this will give you an idea of the issues that arise in anaphora resolution: there are a series of tasks which are intended to train new participants which take you through progressively more complex cases. Note that you have to register but that you don't have to give an email address unless you want to be eligible for a prize.

1.2   Post-lecture

1. Take a few sentences of real text and work out the values you would obtain for the features discussed in the lecture. See if you can identify some other easy-to-implement features that might help resolution.

2. Try out the Lingpipe coreference system at `http://alias-i.com/lingpipe/web/demos.html`

3. The following text is taken from the Degree Confluence Project (note, it was written by a German speaker and is not fully grammatically correct).

   > 28-Jul-2013 – A trip into the beautiful region Spreewald in the state of Brandenburg gave opportunity to visit the Confluence 52° north – 14° east.
   >
   > By taking the interstate road B87 from southwest you reach the village Biebersdorf about 6 km after leaving Lübben. In Biebersdorf the in the beginning paved "Groß-Luethener Weg" leads quite directly northeast to the Confluence. On unpaved paths you can reach about 180m from the CP.
   >
   > From now on it was walk by foot on a tighter path. The last 78 m must be done by walking through a tight planted pine forest. At luck the distance between the rows is wide enough to walk nearly unobstructed to the point. Only a grass snake and many little white butterfly moths were crossing the way.
   >
   > After all that I reached the Confluence Point at 12.10pm in a dry heat of about 33°C. Despite the blue sky the GPS showed a precision of 5m by use of GPS- and GLONASS-signal. Surely the tight vegetation was the reason for the dilution of precision.
   >
   > On the way back a pleasant visit of the city Lübben with its beautiful island "Schlossinsel" was taken in, instead of a Bratwurst you can have a perfect gherkin (kind of spicy cucumber) there.

   Give rhetorical relations between each sentence pair using the set: NARRATION, BACKGROUND, ELABORATION, CONTINUATION, RESULT, EXPLANATION. Examples of each relation are given below:

   > NARRATION: Klose got up. He entered the game.
   > ELABORATION: Klose pushed the Serbian midfielder. He knew him from school.
   > BACKGROUND: Klose entered the game.The pitch was very wet.
   > EXPLANATION: Klose received a red card. He pushed the Serbian midfielder.
   > RESULT: Klose pushed the Serbian midfielder. He received a red card.
   > CONTINUATION: Klose received a red card. Ronaldo received a yellow card.

   Compare your annotations with the annotations done by one or more other people. What is the percentage agreement? Can you find a way to resolve disagreements?

2 Lecture 11

2.1 Pre-lecture

2.2 Post-lecture exercises

1. Suppose a town is equipped with a sensor system on its major commuter routes which monitors vehicles passing. A NLG system is to be designed to provide brief reports to motorists on current traffic conditions. Describe the tasks involved in such a system, using the categories in the lecture notes, giving appropriate examples.

2. Using the graph representation in the lecture notes, draw appropriate graphs for each of the following expressions and list the entities they match:

   (a) the brown dog
   (b) the white dog
   (c) the dog in the doghouse
   (d) the white doghouse containing the small chihuahua
   (e) the white doghouse next to the large doghouse
   (f) the white doghouse left of the large doghouse

   Assuming each edge costs 1 and that it is obligatory to have a noun edge for each entity, give the cheapest distinguishing graph(s) for d1 and for d3 and corresponding natural language expressions. (NB: the arrows on the arcs are not very visible in the figure in the notes: the 'in' arc goes from d1 to d3 and the 'contains' arc goes from d3 to d1)

3 General questions

3.1 Ambiguity

Many jokes depend on ambiguity: for each of the following examples, specify the type of ambiguity involved and give as detailed an analysis as you can of the different readings.

1. A: Your dog's chasing a man on a bicycle.
   B: Don't be silly, my dog can't ride a bicycle.

2. Drunk man: I'm going to buy a drink for everyone in the bar.
   Other man: That's good of you, but don't you think they'll argue over it?

3. Haughty lady in a post office: Must I stick the stamp on myself?
   Post-office employee: I think you'll accomplish more, madam, if you stick it on the package.

4. Customer: Will my burger be long?
   Waiter: No sir, it will be round and flat.

5. What did the barman say to the ghost?
   Sorry sir, we don't serve spirits here.