Typology I: Solution to Homework for Lecture 6

(All of these could be exam questions.)

1. **Find a word in your native language which is very vague or polysemous, and write down as many English translations as you can think of. (If English is your native language, find synonyms instead). Do some of your translations in turn have back-translations/synonyms in your native language which do not share a meaning with the word you started with?**
   nett → nice, kind, enjoyable, fair
   nice → *hübsch*, *schön*, *lieb*, *fein* (all of these overlap with *nett*)
   kind → *freundlich*, *lieb*, *gütig* (overlap in all cases)
   enjoyable → *angenehm*, *amüsant*, *erfreulich* (*erfreulich* is questionable)
   fair → *gerecht*, *ausreichend*, *hell* (all three are quite different from *nett*!)

2. **A group of psychologists claims to finally have found a universal pattern in the mental representation of economic transactions. Participants with an impressive variety of native languages were tested in years of work. The language sample consists of the following languages: English, French, Italian, Spanish, German, Dutch, Swedish, Polish, Russian, Finnish, Hungarian, Turkish, Persian, Arabic, Hindi, Mandarin Chinese, Korean, and Japanese. Do you see any problem with this particular set of languages, given the exposure you have had to the analysis of color adjectives and number systems?**
   The language sample only contains languages of Eurasia, and only major languages of nation states. In the cases of the color adjectives and the number systems, we have seen that all of the world's major languages have virtually identical systems (11 colors, decimal system) across language family and culture boundaries, whereas the languages of other continents and smaller communities often show a great diversity of different patterns. If claims about universal mental representations are possible, they must take into account languages from all continents, with different numbers of speakers, and from cultures at different levels of technology.

3. **If a language has only three color categories, which ones do you expect according to Berlin & Kay (1969)? What is the problem with assigning English color names as translations to these adjectives? What will be the relation of the three adjectives to color space?**
   The first two universals established by Berlin & Kay would predict that the three color terms denote the colors Black, White, and Red. The problem with using the English names is that they are usually used as part of an 11-color system, and are therefore inadequate for naming the color categories. For instance, it would be problematic to say that our three-color language "does not know the color Blue", or that "there is no word for Yellow". In reality, the language does have a color category for every point in the color space, the categories are just less fine-grained than in English. The only justification for calling the three colors "black",

"white", and "red" is that the protoypes of the three color categories coincide with their English counterparts.

4. **Here is some (simplified) dictionary data from five languages. Your task is to build both a semantic map and the polysemy network representing the described portion of the semantic space. Are there any interesting patterns already in this small dataset? Where do the two networks differ?**

   Basque:
   aditu: hear; listen; understand
   entzun: hear; listen

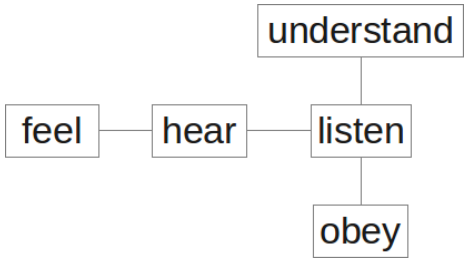
   German:
   hören: hear; listen
   zuhören: listen

   Italian:
   ascoltare: listen; hear
   sentire: hear; feel

   Nahuatl:
   caqui: hear; listen; obey; understand

   Turkish:
   dinlemek: listen
   duymak: feel; hear

   We start by deriving the **semantic map**, which will consist of five concept nodes: *feel*, *hear*, *listen*, *obey*, *understand*. The criterion is that all words in our dataset must be mapped to connected regions in the map. We can discard all entries for which only one translation is given, since they do not lead to any connections. Words with two translations are a good starting point, because the two translations must be connected in the semantic map. These entries give us links *hear-feel* and *hear-listen*. This leaves us with only **aditu** and **caqui** to account for. *understand* can be linked to either *hear* or *listen* to accomodate for **aditu**, so let us add a link *listen-understand*. To accomodate for **caqui**, we still need to append *obey* to one of the three other translations, and we choose to append it to *listen*. As a result, we get the following semantic map:



A quick check of the relevant entries shows that indeed, all words now cover connected regions in the graph.

The derivation of the **polysemy network** can be done a lot more mechanically: we simply go through the entries and draw pairwise connections between all the translations of each entry. If we want to draw a weighted network, we can just make a line thicker every time we need to draw it. If we take over the node layout from the semantic graph, the result will look roughly like this: