Assignment 3
L245
Due Wednesday, February 15

1. Do question #6 in chapter 2 of the textbook, wherein you have to design a test suite of sentences with and **without** errors (p. 66). There are some modifications to the question, however:

   - I want about half of your examples to be spelling errors and about half to be **grammar** errors.
   - I want you to use multiple spelling checkings
     (a) A standard spelling corrector for text editing: HunSpell, aspell/ispell, Microsoft Word, etc.;
     (b) A smartphone or instant messaging corrector;
   - As with previous assignments, I stress that good organization of your examples is critical. In this case, it could help to see things organized somewhat like this:

		MS Word		iPhone	
Example	Purpose	Flagged	Suggestion	Flagged	Suggestion
Who loves pork <u>cops</u>?	semantic/n-gram error	No	n/a	Yes	chops
...	...	...	...	...	...

     I am only suggesting one way to organize things: feel free to play around with the best presentation of examples (e.g., including intended corrections).
   - For a new part (e), discuss why you observed different behavior amongst the different correctors.

2. Top-down parsers posit a rule based on the current node *before* looking at the next word to be parsed. Consider a sentence like *The mouse in the corner is staring at me*, and a rule which says NP → NP PP. Explain how this rule could lead a top-down (but not a bottom-up) parser to posit an infinite number of analyses.

3. Interview someone taking a language course here at Indiana.

   (a) What course are they taking? How far along do they say they are in their acquisition of this language? How are they determining their proficiency?
   (b) Identify a problematic area in their language learning. In particular, walk me through at least two example sentences where they received corrective feedback and explain what they were doing right or wrong. Brainstorm with them as to what led them to do things the way they did.
   (c) Design an exercise that would address their need(s). Consider the following in designing it:
     - What kind of exercise best addresses their particular problem?
     - What kind of feedback would be appropriate and helpful?
     - What level of users would this be appropriate for?
     - Can this be implemented on a computer, and if so, what technology is needed? Specifically, what kind of NLP technology is needed?

4. (a) Do question #1 on p. 87 of the textbook involving characterizing one aspect of child language.
   (b) Do question #2 on p. 87 of the textbook, involving a search through CHILDES.
   (c) Do question #3 on p. 87–88 of the textbook, involving part-of-speech tagging.

5. **Bonus:** Download this grammar checking tool and become comfortable using it: `https://www.languagetool.org`. Then, identify two grammar rules that you think could be added to LanguageTool and write them. Include: a) a description of how you came up with the rules; b) the XML snippet encoding your rules, and c) some analysis of sentences where it is (or isn't) working.

   - This *three-minute introduction* is probably the best place to start: `http://wiki.languagetool.org/development-overview#toc0`
   - When I refer to your code snippet, see the `BED_ENGLISH` case of converting *bed* to *bad* for an example.