Semantics Exercises

1. I provided an extensional semantics for a fragment of English that includes the following semantic rules:

\[
\begin{align*}
  \text{John} & \quad \text{SVal}(\text{John}) = \text{John} \\
  \text{Mary} & \quad \text{SVal}(\text{Mary}) = \text{Mary} \\
  \text{barks} & \quad \text{SVal}(\text{barks}) = \text{the set of creatures that bark} \\
  \text{runs} & \quad \text{SVal}(\text{runs}) = \text{the set of creatures that run}
\end{align*}
\]

\[
\text{SVal}(S) = \text{true iff } \text{SVal(name)} \in \text{SVal(IV)}
\]

a. Add semantic rules for the words \textit{Sally} and \textit{jumps}.
b. Add semantic rules for the words \textit{and} and \textit{but}.
c. Add semantic rules for the words \textit{loves} and \textit{hates}.

2. Using the expanded semantic rules that you added for exercise one, show that:

a. \textit{loves} and \textit{hates} are antonyms; that is, show that substituting one of these words for the other in a sentence changes the truth value of the sentence.
b. \textit{and} and \textit{but} are synonyms; that is, show that substituting one of these words for the other in a sentence does not change the truth value of the sentence.

3. We discussed three problems for referential theories of meaning.

a. Show how these three problems apply to a mental image theory of meaning.
b. Show how the three problems apply to a prototype theory of meaning.
c. Show how the three problems apply to a semantic feature theory of meaning.

4. Bowerman used a common set of situations to illustrate differences in the semantic extensions for the English words \textit{in} and \textit{on} and their equivalents in Dutch, Spanish and Berber. Bowerman only sampled a small set of possible topological relationships. Based on the examples that we discussed in class, which words would you predict a Dutch, Spanish and Berber speaker would use for the following situations? Explain your answers.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Dutch</th>
<th>Spanish</th>
<th>Berber</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. in a cloud</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. on the internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. on time</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. The word *intension* is often confused with the word *intention*. While *intension* refers to the concept expressed by a word, *intention* refers to the purpose or design of an action or object. Although *intension* and *intention* have different meanings, identifying the intention for an action or object helps to understand the intension of a word. Consider the following word pairs, and identify what their semantic extensions have in common as well as the differences in the intentions they express.

<table>
<thead>
<tr>
<th>Word Pairs</th>
<th>Shared Semantic Extension</th>
<th>Different Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>break, pick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cover, wrap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fold, crumple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cup, bowl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>separate, divide</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. We discussed the difference between the semantic extension and semantic intension of the words *meter* and *kilogram*. One way to think about the semantic intension of a word is to imagine what the referent would be if you alter an essential feature of its referent. For example, would you still consider something to be a bowl if it was broken or flat? Discuss the difference between the semantic extension and semantic intension of the following words:

a. zebra
b. cup
c. wheat
d. pick
e. but
f. in

7. We looked at the intensional context that propositional attitude verbs create and discussed how to use a substitution test as a way to discover intensional operators. There are many other types of intensional operators. Use the substitution test to decide whether each of the following is an intensional operator:

a. negation, e.g. I did not see Superman in the garden.
b. a modal auxiliary, e.g. I could be the president of the United States.
c. future tense, e.g. The queen of England will launch the ship.
d. *possible*, e.g. It is possible that I saw the Chancellor.
e. imperative mood, e.g. Meet the Dean at the Union.
f. *former*, e.g. Mary is a former student.
8. Larsen (1988:310) describes deixis in K’iche’ Maya in the following table.

<table>
<thead>
<tr>
<th></th>
<th>Near Speaker</th>
<th>Near Hearer</th>
<th>Far Away</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstratives</td>
<td>wa?</td>
<td>la?</td>
<td>ri?</td>
</tr>
<tr>
<td>Definite Articles</td>
<td>wa</td>
<td>la</td>
<td>ri</td>
</tr>
<tr>
<td>Adverbs</td>
<td>waraal ~ chi?</td>
<td>chila?</td>
<td>chiri?</td>
</tr>
<tr>
<td>Pointing</td>
<td>rii?</td>
<td>laa?</td>
<td>rii?</td>
</tr>
</tbody>
</table>

a. How do demonstratives in K’iche’ differ semantically from the demonstratives *this* and *that* in English?

b. How do definite articles in K’iche’ differ semantically from definite article *the* in English?

c. Do demonstratives and the definite article have similar semantic features in English?

d. How do the pointing words in K’iche’ differ from the words *here* and *there* in English?


9. Rotokas, a language spoken in Papua New Guinea, has the following words:

- kaakau ‘dog’
- avuka ‘old woman’
- avuru ‘fly’
- koi ‘bee’
- atari ‘fish’
- isiso ‘grass’
- kokio ‘bird’
- aako ‘mother’
- koko ‘butterfly’
- toru ‘wave’
- tavauru ‘young girl’
- koie ‘pig’

- kaakaukare ‘pack of dogs’
- avukariako ‘group of old women’
- avurupitu ‘swarm of flies’
- kooisipit ‘swarm of bees’
- atarikare ‘school of fish’
- isisokou ‘bunch of grass’
- kokiokare ‘flight of birds’
- aakoriako ‘group of mothers’
- kokopuopitu ‘swarm of butterflies’
- torukou ‘series of waves’
- tavauru ‘group of young girls’
- koiekare ‘herd of pigs’

a. What is the semantic difference between a plural and a group?

b. Which Rotokas group suffixes have similar extensions to group terms in English?

c. Which Rotokas group suffixes have different extensions from group terms in English?

d. What English group terms do you use to refer to a group of boys, crows, clouds, hills?

e. Which English group term do you use when you are unsure? This is a default group term.
10. Consider the following Fijian pronouns.

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>au</td>
<td>1st person singular ‘me’</td>
</tr>
<tr>
<td>iko</td>
<td>2nd person singular ‘you’</td>
</tr>
<tr>
<td>koya</td>
<td>3rd person singular ‘him/her/it’</td>
</tr>
<tr>
<td>kedaru</td>
<td>1st person dual ‘you and me’</td>
</tr>
<tr>
<td>keirau</td>
<td>1st person dual ‘one other (not you) and me’</td>
</tr>
<tr>
<td>kemudrau</td>
<td>2nd person dual ‘you two’</td>
</tr>
<tr>
<td>rau</td>
<td>3rd person dual ‘them two’</td>
</tr>
<tr>
<td>kedatou</td>
<td>1st person trial ‘two others (including you) and me’</td>
</tr>
<tr>
<td>keitou</td>
<td>1st person trial ‘two others (excluding you) and me’</td>
</tr>
<tr>
<td>kemudou</td>
<td>2nd person trial ‘you three’</td>
</tr>
<tr>
<td>iratou</td>
<td>3rd person trial ‘them three’</td>
</tr>
<tr>
<td>keda</td>
<td>1st person plural ‘us’ (more than three, including you)</td>
</tr>
<tr>
<td>keimami</td>
<td>1st person plural ‘us’ (more than three, excluding you)</td>
</tr>
<tr>
<td>kemuni:</td>
<td>2nd person plural ‘you’ (more than three)</td>
</tr>
<tr>
<td>ira</td>
<td>3rd person plural ‘them’ (more than three)</td>
</tr>
</tbody>
</table>

a. What concepts are grammaticalized in the Fijian pronoun system that are not grammaticized in the English pronoun system?

b. What concept is grammaticalized in the English pronoun system that is not grammaticized in the Fijian pronoun system?

11. In place of pronouns, the Mayan language Mam uses noun classifiers such as the following (England 1983:158):

<table>
<thead>
<tr>
<th>Classifier</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>jal</td>
<td>‘nonhuman’</td>
</tr>
<tr>
<td>nu’xh</td>
<td>‘baby’</td>
</tr>
<tr>
<td>xhlaaq’</td>
<td>‘child’</td>
</tr>
<tr>
<td>b’ixh</td>
<td>‘person of the same status, fondly’</td>
</tr>
<tr>
<td>q’a</td>
<td>‘young man’</td>
</tr>
<tr>
<td>txin</td>
<td>‘young woman’</td>
</tr>
<tr>
<td>ma</td>
<td>‘man’</td>
</tr>
<tr>
<td>xu’j</td>
<td>‘woman’</td>
</tr>
<tr>
<td>swe’j</td>
<td>‘old man’</td>
</tr>
<tr>
<td>xhyaa’</td>
<td>‘old woman’</td>
</tr>
<tr>
<td>xnuq</td>
<td>‘old man, respectfully’</td>
</tr>
<tr>
<td>xuj</td>
<td>‘old woman, respectfully’</td>
</tr>
</tbody>
</table>

a. What concepts are grammaticalized in the Mam classifier system that are not grammaticized in the English pronoun system?

b. What concept is grammaticalized in the English pronoun system that is not grammaticized in the Mam classifier system?

12. English has many verbs that refer to features of light. What concepts are lexicalized in the following verbs?

<table>
<thead>
<tr>
<th>glimmer</th>
<th>gleam</th>
<th>glitter</th>
<th>shimmer</th>
<th>flare</th>
<th>flash</th>
</tr>
</thead>
<tbody>
<tr>
<td>glisten</td>
<td>glow</td>
<td>flicker</td>
<td>shine</td>
<td>glare</td>
<td>sparkle</td>
</tr>
</tbody>
</table>

13. English has many verbs that refer to different manners of walking. What concepts are lexicalized in the following verbs?

<table>
<thead>
<tr>
<th>walk</th>
<th>saunter</th>
<th>sashay</th>
<th>strut</th>
<th>stalk</th>
<th>prance</th>
</tr>
</thead>
<tbody>
<tr>
<td>stagger</td>
<td>swagger</td>
<td>wade</td>
<td>mosey</td>
<td>wander</td>
<td>ramble</td>
</tr>
</tbody>
</table>

14. Pye (1996) published a list of breaking verbs in K’iche’ Maya. How do the concepts lexicalized in the following K’iche’ verbs differ from the concepts lexicalized in English breaking verbs?

- **chiko:j** to break by throwing an object, e.g. chest, stool, pot
- **ch’akati:j** to break off a small piece, e.g. bread to feed hens
- **ch’ol** to peel, skin e.g. fruit, vegetables, animals
- **ch’up** to pick a plant from the ground, roots and all, e.g. onions
- **etzalob’a:j** to break down, ruin, e.g. computer, car, zipper
- **jixi:j** to tear leaves along the veins
- **jochopi:j** to break a banana by failing to support the whole bunch
- **jol** to pull entire leaf and part of stem from corn in a downward motion
- **joyopi:j** to break a banana from a bunch of bananas
- **kab’iq** to shell corn by twisting the cob in one's hands
- **k’et** to shell corn with one's thumb—imitating a hen pecking corn
- **mak** to pick small beans, e.g. coffee, beans
- **pachale:j** to smash something with one's foot
- **paq’i:j** to split, e.g. boards, watermelon, balloon
- **paxi:j** to break clay, rock, e.g. glass, plate, cup, rock, pot
- **pitz’itz’e:j** to crush something soft, e.g. clay
- **pi’i:j** to break something soft, e.g. book, tortilla, clay
- **pich’i:j** to squash bugs, e.g. lice, fleas, worms
- **poq’i:j** to pop, e.g. bubble, balloon
- **qasa:j** to break in a downward fashion
- **q’ipi:j** to chip, to make smaller, e.g. break sticks for kindling
- **q’ol** to pick leaves by tearing across the base of the leaf
- **q’upi:j** to break something hard, e.g. bridge, candle, basket, stick
- **rach’aqi:j** to tear, e.g. pants, cloth, paper
- **raqi:j** to smash something hollow, e.g. glass, pot, chest, bubble
- **t’oqopi:j** to sever something long and flexible, e.g. rope, wire, string
- **t’ub’i:j** to tear, e.g. paper, clothes
- **weqi:j** to smash something hard, e.g. pot, wall, mile post
- **xul** to pick something by the stem, e.g. grapes
- **yoji:j** to dismantle something, e.g. table, house, car
- **yokoke:j** to crumple something, e.g. aluminum cans, paper cups

15. Examine the metaphors expressed in the following sets of sentences.

a. She gave him an icy stare.
   He gave her the cold shoulder.
   He exudes a lot of warmth toward people.
   They got into a heated argument.
b. He drops a lot of hints.
   The committee picked up on the issue.
   She dumps all her problems on her friends.
   Although he disagreed, he let it go.
c. the eye of a needle
   the foot of the bed
   the hands of the clock
   the arm of a chair
   the table legs
d. This lecture is easy to digest.
   He just eats up the lecturer’s words.
   Chew on this thought for a while.
   Listen to this juicy piece of gossip.

For each set of sentences determine the basis for each of these metaphor sets. Use the pattern:
“The metaphors in set x describe __________ in terms of __________.”