13.e - Finishing Experimental Design

1) Quick Recap of Diagrams
2) Critically Looking at Assignment
3) What Makes a "Good Experiment"
4) Blood pressure Activity
24 dogs (4 of each breed)

- Akita Dogs
- Beagle Dogs
- Collie Dogs
- Dalmatians Dogs

Group 1: 2 dogs
Group 2: 2 dogs
Group 3: 2 dogs
Group 4: 2 dogs

→ Treatment 1
   - Exercise

→ Treatment 2
   - Calcium

→ Treatment 3
   - Control

→ Treatment 1
   - Exercise

→ Treatment 2
   - Calcium

Compare change to average

Pg. 312, #13, 14, 35, 37, 38

a) exchange assignment papers

b) create critical and constructive comments
   - don't be afraid, you are trying to make your partner a better experiment designer

c) try to include the comment on the paper where applicable or make it "footnote" style

d) Should take about 3 minutes and make at least 2 comments per problem
What Makes a Good Experiment

"If we are to infer causation, we must TRY to ensure that the only possible explanation for any difference in outcomes is the difference in treatments"

Follow the "Four Principles"
A) Control
B) Randomization (of treatments)
C) Replication (during and "again")
D) Blocking (if appropriate and necessary)

Remember: The Best Experiments are Usually
- Randomized
- Double-Blind
- Comparative
- Placebo-Controlled

Other Things To Keep in Mind

* Clearly define your response variable and how you will evaluate it

* Decide "how big is big enough" with both results and sample/subject group size

* Blocking allows us to isolate the variability attributable to the differences between the blocks

* If we cannot control something, we try to Block for it otherwise, we randomize to limit it.
Assignment (Due Wednesday, December 9)

1) Finish Blocking Dogs Packet

2) Finish Blood Pressure Activity

3) Complete p. 312 all 3 parts

*Quiz 13 will be on Wednesday, Part III Test will be on Thursday and Friday

*IT #13 will be given on Wednesday and Due on Monday