

**Darwin, The Origin of Species**  
**Chapter VII "on Instinct"**

Read these questions & keep them in mind as you read the chapter.  
Answer these questions & bring them to class with you to turn in (hard copy)

1. Identify instances of anthropomorphism in Darwin's writing.
  2. Make a short list of a few important facts that you know that Darwin did not know. Explain how he would have used these facts in support of his theory of evolution.
  3. Why (do you suppose) Darwin stated, early in the chapter "*We are concerned only with the diversities of instinct and of the other mental faculties in animals of the same class.*"
  4. Find three questions in this chapter that Darwin was unable to answer.
  5. Identify a few examples of what we now call "the phylogenetic comparative method". (look this up on Wikipedia if you don't know what it means)
  6. Identify at least one passage in which Darwin describes a concept that we now refer to as "a fitness landscape". (again look it up if you don't know what it means)
  7. What would Darwin have to say about Stephen J. Gould's theory of "punctuated equilibrium" or Goldschmidt's idea of "hopeful monsters" as applied to instinct? (look these terms up if you aren't familiar with them)
  8. Describe the example of "mathematical modeling" from the chapter on instinct and explain the role of empirical research in that collaboration.
  9. Identify one passage in which Darwin describes a process that we now refer to as "exaptation". (again look it up if you don't know what it means)
  10. Note instances of "Alternative Reproductive Tactics" that are briefly mentioned. (again look it up if you don't know what it means)
  11. Do some outside reading to learn what Darwin refers to as "the well-known doctrine of inherited habit advanced by Lamarck"
  12. Describe one instance where Darwin discusses an experiment that he performed.
- Extra ::: This is where we will be going next week.....
13. Identify one passage in which Darwin invokes what we now refer to as "group selection" and discuss the prevailing preferred explanation (kin selection).
  14. Describe what you know about Altruism and Mutualism with regard to animal relationships using terms of natural selection. Then explain, why Darwin was wrong to consider the aphid/ant relationship as a case of Altruism.