

Bio 45 -- Journal #4 -- Due Friday, 15 November 2002- in class

BRAINSTORMING

You should continue making behavioral observations, but we will now work more on thinking -- description and analysis of your ideas and the ideas of others about behavior. You will explore your own answers to questions you have about observations, lectures and readings. Create and play with your own ideas or those of others. There are two thinking projects here. See the web discussion for some great examples!

Conceptual or abstract thinking: Think while you write for a while. Take an idea that attracts or confuses you and present it in a different way. Stay within the realm of behavioral ecology and its language. Keep the problems simple. Tell us what you think about the theory or concepts you are learning. Analyze them or apply them. Strike out on your own. Take a different perspective and see how far you can push it. Play with a discussion question at the end of a chapter in Alcock. Tell Waage a better way to explain some concept or present an issue so that it would be clearer. Anything goes. I want you thinking and contributing your own ideas. Remember to write while you think, not just think a while and write a few sentences (see assignment details).

Doing experiments in your mind: You have accumulated a large number of questions from observations, discussion sections, readings and lectures. Pick an interesting but fairly simple question and try to identify all the possible answers (hypotheses) to it. Do not worry at first about plausibility -- try any idea that comes to mind. You can eliminate 'silly' ones later. Look for an appropriate null hypothesis.

Then try the "how might we test this" game. Think about ways to test one hypothesis against another or against a null hypothesis. First try to figure out the ideal test -- let your imagination roam. What data you would ideally like to have? Then see if you can modify the ideal to fit the practical or allowable. You may have to re-trace your steps at times. Perhaps you have too many hypotheses to test among. Try a different version of the original question or observation. See if it gives you fewer hypotheses. Suppose you are stuck with a single hypothesis. Try to test it by subjecting it to an experiment (or predictions derived from it) that will at least allow you to conclude it was a false hypothesis. Try not to simply support it. The experiments you design should go beyond simply collecting more data to confirm a pattern you think you see.

ASSIGNMENT: It adds up to 7 hours for the next 2 weeks

1) Continue your observations of animals (at least 2 hours total). If you are good at getting at details, back off a bit and look for general patterns which in turn raise questions to brainstorm about. Try to tie observations into the themes in the course Ask questions, think up answers, design experiments (even if you cannot do them). **Clearly mark one observation** that reveals your progress, or that you want feedback on.

2) Do some conceptual or abstract thinking (at least 3 hours total). Choose an idea or concept from lecture or readings. Write down the author and page number. Tell us what you think about the idea. Try to: (1) adopt another perspective, (2) disagree outright, (3) play with tangents to the idea, or (4) ask and answer questions in relation to the idea. Do your best to come up with several pages of exploration. Then focus three of these explorations into one coherent page of legible writing -- or better -- typing for each. **Mark two for us to read.** Good ideas get further if they are clearly expressed.

3) Design an experiment (at least 2 hours total. Follow the procedures outlined above. Start with a question from your observations or lecture or your readings. Again, you **should do this with several questions** and chose one (about a page) for us to read.

Typing parts two and three will be greatly appreciated. Just paste or tape or staple the pages in your journal -- do not put lose pages in the journal!

Observing will get more difficult as day length and available animals change. Use the time you gain for brainstorming and use some of the brainstorming for studying for the exam. Share your journal with others in the course! Invite their comments. If you post a brainstorm on the Web discussion, include it and any responses as one of your journal entries -- just copy the web postings and paste them in the journal.