Term Project

As I mentioned in class, there are two general ways of starting a research project: the species or the question. However, at some point all projects must become about a question or set of specific questions. So, for example, you might have always been fascinated by black widow spiders, so you might choose to do your project on them. However, there must be SOMETHING that fascinates you in particular, and that becomes the topic of your study. Alternatively, you might have always been interested in sexual behaviour, particularly post-coital cannibalism, and you might then be interested on the BWS as a test subject. Actually, you would probably end up with a different system because this behaviour is not as common in the BWS as then name would suggest.

The quality of the work expected is somewhere between what a high school kid would produce and what an M.Sc. student would produce. Something that would be near publication quality, or that with some additional work might lead to something publishable, will be deemed "excellent". ALL studies have SOME flaws and could be improved upon, even mine. The key here is to do something that is interesting, innovative, and reasonably original while at the same time being DOABLE given our constraints (temporal, financial, spatial, legal, etc).

A good topic/question is one that is not obvious ("are larger crayfish dominant?") or generally accepted knowledge ("do females prefer more colourful males?). You might start with one of these but you must then change it to make it a little more interesting ("are larger crayfish always dominant?" - I do not know, you might envision situations where they would not be, maybe). It is important to come up with a genuine question; something that actually interests you and has not already been asked and answered a hundred times. This requires a little reading, some guidance on my part and ….. creativity!

A good test of what constitutes a good idea is the following: once you have a hypothesis and some specific predictions, if I am willing to bet $ 200 on what the answer is going to be, then your hypothesis is probably a little too obvious and falls in the realm of a "demonstration", not a test.

Another good test of whether an idea is worth pursuing is the "so what?" test. Even if you have 2 alternatives, A and B, one of which is not necessarily obvious, assume for a moment that the answer is A. So what? What are the implications of it being A and not B? Does it make you think of your topic or your system differently? Does it raise other questions? If you cannot answer your "so what?" then your question is probably not all that exciting.

I could set up a schedule whereby I could insist that you hand in a proposal by a given date; have you data collected 3 weeks thereafter, etc. I will not. I will assume you will schedule your time accordingly but I will insist that you run your project by me BEFORE you get too engrossed in your project. It would be best if you have done this about 2 weeks hence.

As I mentioned in class, it would be useful to you to have a tangible proposal (yes, even with a brief intro and methods) written BEFORE you start collecting data. It would be useful to think of HOW data will be analysed before collecting any (yes, statistics). It would be a good idea to

include some time for “trials” that would not be included as part of your final data, just to make sure data collection goes smoothly. Finally, it would be ideal if you finish collecting your data WEEKS, not days, before the due day. I am available for consultation at any time, not just during lab hours or office hours (well, half hour before the lecture is probably not a good time, but any other time is usually okay). I do not know the natural history of every species within a 100KM radius, but I do know a little about science and behaviour.

There are many species/systems that we could use. In the lab we have crayfish, guppies, isopods, crickets, cichlids and neon tetras. I am sure it would be relatively easy to obtain and house other invertebrates and small fresh-water fish. Outdoors we have bees (not for long), ants perhaps, a zillion other insects (maybe someone could so something with that beetle that is decimating BC forests! – if it is good, it might turn into a very-well funded and practical M.Sc. project), and many types of birds and mammals. Mammals, cute as they might be, are usually impractical, indoors or outdoors. Large outdoor mammals might not be common enough (although you might examine consequences of their behaviour, if not the behaviour *per se*), and little ones are often too furtive for behavioural studies. Studying mammals indoors is possible but a lot of paperwork is required to be able to keep them. Outdoor birds however, are highly conspicuous and often easy to manipulate, but it is important to select the right question. For example, during the winter you will not be able to study mating or parental behaviour, but predator avoidance and foraging might be easier to study. Read a little about the natural history of your system before you get too committed.

People tend to gravitate towards studies with humans. There is a natural tendency to be most interested about your own species, and humans are also very conspicuous and abundant. This is not, however, a course in psychology or anthropology. I do not want to exclude humans, but I will limit them to the 2 most interesting proposals. Whatever ideas you have for humans can be tested with other species. In case you are not one of the “chosen few” or “chosen two”, people who have humans in mind should also consider other species/systems.

A few ideas/systems you might consider:

Crayfish and .. as previously described
Chickadees and foraging/predation risk
Foraging bumblebees
Marginal value theorem
Humans and …
Guppies and .. so many possibilities.
Convict cichlids…and parental care
Crickets and mate choice (do we have sound recorders?)
Schooling in neon tetras
Dogs/cats in the pound.. ideas? Up to you!

Some that you SHOULD NOT even waste any time thinking about:

-badger mating behaviour.- people can work with badgers for YEARS and not see one, never mind their mating behaviour