

## Study questions for Dugatkin. Chapter 5. Social Learning

Ethology and Behavioral Ecology  
Spring 2008

1. There are a couple of famous examples of social learning in macaques that set the tone for the chapter; enjoy them.
2. Note Romanes (when did we consider him before).
3. What is **culture**? Know the definition given in the book. In your mind, distinguish between culture and society – one thing to think about when you read this chapter is does a society require culture. You may want to look up several definitions of society, as applied to animals. Anyway, keep this question (and your answer) in your mind, as many important phenomena will revolve around these two concepts.
4. What is the principal way that culture learning differs from what individual learning? Also contrast the rate at which adaptive responses can be spread through a population by innate response, individual and cultural learning (p151-2 – these are softballs, but know them).
5. You should know the definitions of **social learning, local enhancement, social facilitation, contagion, imitation, copying** and Caro and Hauser's definition of **teaching**. All will be discussed in some detail in class.
6. Know the differences between vertical, horizontal and oblique social transmission and examples from animals for each. This is a straightforward section and will not be discussed in class. One comment – on p163 consider the so-called maladaptive behavior of fish learning a long path to food. Please keep in mind that this is unlikely to happen in nature. Think about why nervous systems in guppies might be wired to "respect" horizontal transmission and what would usually happen in nature in regards to the adaptiveness of this behavior. Moreover, think about this sort of thing and the idea of the optimal design of a learning system. Will such a design catch all mistakes? Why or why not.
7. The section on interaction of cultural and genetic transmission is interesting. In regards to the work of the Grants on Galapagos finches, note that a system designed to learn a song is based on an "expectation" of a particular environment – in this case, hearing the correct male sing. Also note the problem with the biological species concept in this example. Finally, the whale example (Whitehead) while interesting is to me ultimately unsatisfying or nothing more than a curiosity because we are dealing with neutrally adaptive trait's (mtDNA sequences) being driven by cultural factors. I guess my response is "So what?" What do you think? -- and don't be afraid of the big bad bear. – Do you think this would work with adaptive traits unrelated to social systems? Does he oversell the case by invoking genetic linkage or is that a nice device to explain Whitehead?

8. Think about the differences between genes that influence society and genes for cultural transmission (question 2). This is a very important section, especially in the nature-nurture context we considered at the start of the course. And, is he saying that genetic factors might have nothing at all to do with cultural transmission. Think about this and talk it over with each other.

9. Know the cultural transmission/brain size example. Does this make intuitive sense? Why or why not?

10. The interview with Prof. Jeff Galef is well worth the read – especially if you spend some time thinking about why he is working on non-primates in regards to the broader animal-human culture investigations. Also especially worth thinking about is what he says about "animal rights".