

## HOMEWORK 06

### The Beak of the Finch: Chapters 17-20

Answer each question in at least one paragraph (ca. 150-200 words). Refer to the syllabus (section “Written assignments”) for formatting instructions.

1. Edgar Anderson offered some interesting insights regarding hybridization and habitat requirements. Which widely used term did Anderson coin? What does this term mean and why is it *an important evolutionary step*? How is the second generation of hybrids different from the first when it comes to habitat requirements and what role does human disturbance play in this process? What happens when a new habitat opens up? Give some examples mentioned in the book.
2. Why did the giant cactus finch go extinct? Why are the Grants so adamant in making sure they don't bring fire ants on the island?
3. Pesticide use represents a selective pressure for insect species in a similar way the flood/drought on Daphne Major did for finches. What are the four possible ways that insects can survive insecticide spraying? Give an example for each one. What mode of selection is occurring when pesticides are sprayed for cotton pests? (not specifically mentioned in book, extra points for this)
4. What do *E. coli* strains in the human gut have in common with birds in the Galapagos and what is “the Levin Archipelago”? What little study did Levin & his wife do and what did they find? (*When we talk about natural selection, we're not talking about eons (...). It's not just dead dinosaurs.* (p. 259) – what is meant by that statement?
5. How might global warming affect finch evolution in the Galapagos Islands?
6. What are some key innovations in the evolution of humans? Is cultural evolution (the ability to learn from each other) unique to humans? If not, give examples. What did J.B.S. Haldane mean by *psychological polymorphism* in humans and how does this relate to character divergence and the adaptive radiation of humans?

***This concludes the official part of the homework (Happy near-end of the semester!), you will not be graded on the last question but I will appreciate your answer.***

7. How did you like *The Beak of the Finch*, especially in the context of this class? Anything you would change about how the book has been used in the class? Would you have preferred a regular textbook as the main text?