

Phil*2000

Philosophy of Biology, 2017

Reflection Question on Dawkins Ch13. The Long Reach of the Gene

Due on Tuesday, February 14th at 1:00 pm

Dawkins frames this chapter as an attempt to address an apparent tension between, on the one hand, the proposal that selection acts exclusively at the level of the gene, and, on the other hand, the obvious fact that organisms are highly integrated entities. This tension emerges when we consider the truly selfish genes (e.g. meiotic drive genes and transposable elements). These genetic elements increase their own rate of replication in ways that, often, harm the organism. If selection acts exclusively on genes, you might ask, why aren't such genes the norm? Why do organisms even exist? For that matter, how did organisms evolve in the first place? You might expect that, if selection always favours selfish genes, then a replicator should always defect from the "cooperative alliance" (the organism) whenever it gets a chance to do so. Chapter 13 is an attempt to answer these sorts of questions.

Questions

- 1) In the first part of the chapter, Dawkins spends quite a bit of energy arguing that "houses" constructed by the caddis fly are no less a part of their genetically coded phenotype than their eyes or legs. What do you take to be his reason for making this point?
- 2) Dawkins provides several examples of genes that impact the behaviour of other species, without having to be embedded in those genomes. Again, please briefly describe what you take to be his reason for mentioning these examples. Do they make the same point as the caddis house?
- 3) Near the end of the chapter, Dawkins compares the life cycle of two imaginary species of seaweed: Bottle-wrack and Splurge-weed. His point, it seems, is to defend the claim that an evolutionary bottleneck is a necessary for the evolution of a cohesive organism. First, reconstruct the steps in Dawkins' argument. Then, in a short paragraph, explain whether you agree with his conclusion (why or why not)?