

Names
HPS 130

Units of Selection and Altruism
Questions for discussion

1. Does the concept of genic selectionism encompass all ideas about selection? Can every unit of selection really be reduced down to the genic level (genic pluralism)?
2. What is the heterozygote superiority argument and does it adequately defend the idea of genic selectionism?
3. Is altruism heritable? Is it only genetically heritable?
4. Would subjects react differently to the prisoner's dilemma if they faced it multiple times? Can the concepts of altruism and collaboration be learned?
5. Is altruism an actual phenomenon or is it all Tit-for-Tat? How can we measure altruism without having a definite timescale for fitness?
6. Consider transposable elements that do not have the capability to reproduce on their own but can dramatically influence the function of genomes. How does this relate to the question of whether we exist for genes or whether genes exist for us?
7. What are MLS1 and MLS2 and how does the difference between the two relate to the levels of selection?
8. What is the diachronic perspective and how does it affect the way philosophers look at the levels of selection?
9. When we talk about selection, we often worry about who benefits from selection. Is it okay to have a beneficiary that does not actually initiate the causal chain that it benefits from? Should we only define the initiator as the beneficiary? What does this say about selection?
10. "If the organisms in a population have too many offspring and drastically deplete supplies of food, the population will crash to extinction" – Sober. Is there a limit to one's fitness? At some point do offspring have a negative rather than positive impact on fitness? What is that point?
11. Does the sequence of genotype, phenotype, survival, and reproduction always occur? Can we only view selection in this way?
12. Germline chimerism is observed in marmosets. This leads to a swapping of gametes in fraternal twins. These populations are known to be more cooperative within families and also across the species. What can we say about this connection?

Is altruism at work here? Does kin selection lead to group selection?

13. Apoptosis (cell death) can be useful for an organism. Where is selection acting here? Is this selection at the level of the cell, the organism, or the genome?