

Philosophy of Biology: Essay One

Requirements

You are to submit one 8–10 page research paper on Monday 10 March, addressing one and only one of the questions listed below. An electronic copy of the paper must be submitted by email to bradley.weslake@rochester.edu.

Guidelines

Essay guidelines are available here: <http://goo.gl/jrx25>

Questions

- Describe the *propensity theory of fitness* (Mills and Beatty 1979) and explain and evaluate the central argument against the theory given by Sober (2000).
- The most important argument in Fodor (2008) is the following:
 - i) Explaining the distribution of a phenotypic trait in a natural population requires a notion of ‘selection for’ a trait.
 - ii) If T_1 and T_2 are coextensive traits, the distinction between selection for T_1 and selection for T_2 depends on counterfactuals about which of them would be selected in a possible world where the actual coextension doesn’t hold.
 - iii) The truth makers for such counterfactuals must be laws about the relative fitness of having the traits.
 - iv) There are no laws of relative fitness.
 - v) Therefore, the theory of natural selection can’t explain the distribution of phenotypic traits in natural populations.

Explain and evaluate this argument (Sober 2010).

- Explain and evaluate the argument made by Forber (2005) that natural selection can explain the origin of a novel trait in a population only when the trait is affected by multiple factors.

- Matthen and Ariew (2002) argue that natural selection and drift should not be conceptualised as forces acting on populations (Sober 1984; Stephens 2004). Explain and evaluate their arguments for at least two of the following claims:
 - There is no zero-force law of evolution.
 - Drift is not a cause of evolutionary change.
 - There is no general principle for determining the way in which different causes of evolutionary change combine with each other.

References

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