Species Selection and the Individuality Thesis: A Lesson in Ontology from a Tasmanian Wolf

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Abstract

In the ontology of selection processes, units of selection are individuals and units of evolution are classes. In their individuality thesis, Ghiselin and Hull argue that species are individuals. One would therefore expect that proponents of species selection, wherein species are units of selection, would endorse the individuality thesis; however, this is not the case. I argue that this is because the standard of individuality in species selection is in fact incompatible with the standard of individuality in the individuality thesis. Species selection and the individuality thesis imply different ontologies under appropriate conditions. The standard of individuality for units of selection is instantiation of fitness values. I argue that entities come to bear fitness values because of the structure of their parts, and so species would be units of selection only if they had the appropriate internal population structure. The standard of individuality for Ghiselin and Hull is extension: a species is identical with its members. I cite the example of the Tasmanian Wolf (*Thylacinus cynocephalus*), a species whose last member died alone in captivity. By Ghiselin's and Hull's standards *T. cynocephalus* would be identical with the single organism. Species selection's standards imply the opposite: as a unit of selection, *T. cynocephalus* must already be extinct when reduced to a single organism since population structure has broken down. The two standards of individuality therefore identify species with different entities. I use this argument to suggest which species concepts may be appropriate for accounts of species selection.

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