5

Evolutionary Biology, Change and Essentialism

Introduction

In the last chapter an attempt was made to show that Scholastic metaphysical principles can be deployed to provide a plausible theory of individuation for living entities, particularly individual organisms. Meeting this challenge in a plausible fashion is crucial because of the pivotal role individual organisms play within evolutionary theory in general. I now move on to consider a particular feature of individual organisms, namely, the fact that organisms undergo a variety of changes. In fact evolutionary theory, as the name itself suggests, is deeply committed to the view that virtually no aspect of the Tree of Life is stable. It is not just that individual organisms undergo changes throughout their careers; different kinds of individuals have appeared on the scene in the great evolutionary transitions. It is also the case that the Tree of Life has changed as species come into and pass out of existence in speciation and extinction events.

That evolutionary theory is committed to change being a feature of the living world is hardly controversial. Indeed, as we saw earlier in our account of the received view of evolutionary theory, this is one of its distinctive claims. But when this frank insistence on the reality of change is combined with the view that biological individuals are not social constructs, but mind-independent, ontologically irreducible entities whose nature is something to be discovered by biological research, a difficulty arises. Ever since Parmenides metaphysicians have been troubled by the idea that real entities can persist through change. Perhaps the easiest way to see the difficulty is as follows: If...
one assumes that an item \(a\) has persisted through a change, then \(a\) prior to the change is the same item as \(a\) at the end of the process (\(a\) at time \(t_1\) is identical to \(a\) at time \(t_2\)). But according to Leibniz's Law, if \(x\) is identical to \(y\) then any property of \(x\) must also be a property of \(y\). But if \(a\) has undergone a change then it must have some property after the change that it previously did not have, or lost a property it previously had. In either case \(a\) at time \(t_1\) does not have the same properties as \(a\) at time \(t_2\); so by Leibniz's Law \(a\) at time \(t_1\) cannot be \(a\) at time \(t_2\), and so \(a\) has not persisted through the change but has been replaced by something else. Generalise this result and one ends up denying that change is possible.

On the back of considerations such as these many metaphysicians have ultimately denied that change as normally understood is in fact possible in real things. They might, like Parmenides, insist that change is an illusion. Another familiar option is to deny that organisms are in fact fully real. Or, advertiting to the notions of perdurance and temporal parts, they might offer a radical reinterpretation of objects and nature of change, and insist that, contrary to common sense, only a part of an object exists at any one moment, rather than maintaining that an object endures by being wholly present at every moment it exists. Setting aside the fact that such theories really amount to the denial that change occurs, and setting aside questions regarding the internal coherence of perdurance theories, those inclined to take evolutionary biology and common sense seriously might think: ‘So much the worse for those who deny the reality of organisms and change as a real feature of the living world. We ought to have more confidence in the biological sciences and common sense than the reflections of metaphysicians’. There is much to recommend this line of thought. But things are not so easy. For the one metaphysical theory that quite deliberately makes room for the endurance theory of change, viz., Aristotelian essentialism, is precisely the metaphysical theory traditionally deemed to be incompatible with evolutionary thinking in general. So unless we are to ignore metaphysics completely – a course I do not believe is open to us as philosophers for reasons outlined in Chapter 2 – it would appear that one must either deny that evolutionary biology is really committed to the reality of change, or find some way of reconciling evolutionary biology and essentialism. As the aporetic method insists that the metaphysician should take the first-order disciplines