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BIOLOGICAL ESSENTIALISM

Michael Devitt

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Michael Devitt

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There is a story told over history and philosophy of biology campfires of a terror that once roamed these parts and scared biologists and philosophers alike: the essence monster. This was an ironic name, since if things have essences, monsters are the things that don't, so the philosophers especially appreciated the paradox. However, like a good number of campfire stories, it is a fairy tale, mostly useful for scaring younglings. The essence monster is supposed to have killed progress in biology until Darwin freed us from the misperception that it was real. After that, the essence monster was itself killed off by the knights of the modern synthesis, until Michael Devitt revived it. Or so the new story goes. But you shouldn't believe everything you hear over a campfire.

Around 2008 and onwards, the essence monster story was challenged by historians.¹ Ironically, shortly before, various 'new' essentialisms were formulated by philosophers. In this book, Devitt acknowledges the new essentialism centring around the essays in Rob Wilson's edited book *Species: New Interdisciplinary Essays* ([1999a]), but argues against them all in presenting his own new intrinsic biological essentialism, though he more recently added 'partial' as a preposition to his view. Partial intrinsic biological essentialism avoids what he sees as the shortfalls of the new essentialisms in Wilson's volume. Much of this book is an emendation of his prior papers on the subject from 2008 onwards, but the chapters have cross-referencing that makes interpretation much easier. Rather than listing each chapter and its contents, I will attempt to summarize his arguments and their context.

First he defines essentialism²: roughly, that something is an essential property if its bearer is the kind it is partly in virtue of that property, and the essence of that bearer is the sum of its essential properties. Furthermore, in Devitt's view, essential properties, and therefore essences, can be either partly intrinsic to the bearer or extrinsic. When Paul Griffiths ([1999]) argues that species have historical essences, or a relationship with a common ancestor, this is an extrinsic essence; and Richard Boyd's ([1999]) and Rob Wilson's ([1999b]) HPC accounts are both intrinsic (in terms of developmental essences) and extrinsic (in terms of the properties that keep lineages homeostatic).

A word about this. Devitt is completely right about the traditional logic of essentialism, but I think not of its scope of application. An essence, in the medieval usage taken from the Arabic logical writings of Ibn Sinna and others, is what he says, so far as I know (but see Benevich [2022]). But historically, contrary to the big bad essence monster story, it was never really applied to anything other than semantic and syntactic philosophy (Wilkins [2013a], [2013b], [2018]; Zachos [2016]). It most certainly was not a core feature of classification within natural history, not even by Linnaeus. So, the anti-essentialists he takes as his foils are simply wrong when they say, with John Dupré ([1999], p. 59), 'Darwin's theory of evolution rendered untenable the classical essentialist conception of species'. It may very well have been formally inconsistent with the classification of living things, but that was true well before Darwin, and indeed well before Linnaeus. I'll return to this.

His argument for partial intrinsic biological essentialism is that generalizations require an explanation (but only some—not generalizations like 'predator' or 'parasite', following Mayr), and essences provide this. He is interested in taxonomic, not functional, essences (unlike Aristotle); and in first order questions about properties, not questions or explanations about properties of properties. Unexpectedly, and I think unsupportably, Devitt holds that Linnaean taxa are essential kinds, including (in his [2022] paper) higher taxa. Since Linnaeus himself held that his scheme was artificial, and his use of the *character essentialis* as a diagnostic sign was little more than a Lockean nominal kind, I find it hard to accept this view.

In Chapter 2 he introduces the claim that such essences are at least partly genetic and renames his view 'partial intrinsic taxon essentialism' (substituting 'taxon' for 'biological'). Apart from that, this chapter is devoted to a series of critiques of those who are critics of his view. His responses are sometimes withering and other times rather thin. For example, he responds to Matt Barker ([2010]) on the grouping criteria of reproductively isolated species by rejecting that the onus is on him to show that species have explanatory essences by saying that the onus is on Barker to show that relations explain the properties of a (typical) member of a species. This is at best jejune. Barker's claim is that we group first and then seek common explanations, if any. One doesn't win a point by saying that the other person must adopt one's grounds, at least without good argument. His responses to Godman and Papineau's ([2020]) critique, on the other hand, are more nuanced and effective. In a chapter in a Festschrift for Devitt, they argue that extrinsic properties of a historical nature are the best kind of essentialism. Devitt defends a partial intrinsic essentialism, as we noted. This is meat and drink to analytic philosophers. He and they trade rebuttals and analyses of a kind well known in journals on language and logic.

Chapter 3 expands his critique of historical essentialism (Griffiths [1999]), both full and partial. He discusses here three hypotheses for historical essentialism and considers authors like de Queiroz ([1998]), Laporte ([2018]), and of course Hennig ([1966]) (or, rather, interpretations of Hennig). His replies rely on Putnamesque semantics and he concludes that a partial rather than a full historical essentialism is all that is necessary.

Chapter 4 considers further the notion of individual essences: 'if an individual organism belongs to a taxon it does so essentially'. This is Aristotelian, I believe, in that it considers of an organism the 'what-it-is-to-be' of a particular (Aristotle [1933], Z.4). This discussion is very interesting and employs Kripkean ideas of substance. In an analogy to his partial intrinsic taxon essentialism, he argues for a view of individuals as being constituted by partly intrinsic and partly historical individual essences.

In Chapter 5, Devitt addresses the type specimen issue, arguing against Hull and Levine that type specimens are modally unnecessary, and against Laporte that type specimens require a causal (or 'rigid designation') theory of names. The discussion here is overtly linguistic.

In Chapter 6, the final chapter, Devitt considers races and, in particular, race realism, which has been revived by some bad actors. He takes the case for partial intrinsic taxon essentialism with species as an analogy. The issue is whether race is a real biological essence, or a social essence, or something else. He argues for race category realism in humans, but not that social usages are denoting anything real. The realism he has in mind seems to be underwritten by the explanatoriness of taxa and kinds in general.

If one must be a biological essentialist, then Devitt's is perhaps the best alternative, although Brian Ellis ([2001]) has proposed a more general essentialism in science. But the requirement he makes that a generalization in science is one that must offer explanations (why a species is the way it is, why organisms are members of their species, why traits occur, and so on) is overly, well, generalized. It relies on a semantic notion of taxa, rather than Barker's view that we classify first and then do the explaining (although I tend to think species do not fare well with common ancestry or monophyly as the explanans), but what motivates this? Is it the linguistic turn of the twentieth century? Is it the deterministic view that theories regulate and indeed determine the collective kinds that we see? Why can we not just accept that

biology clumps together, and that we humans, being fairly proficient at pattern recognition, put labels on the clumps we find salient and seek to explain those clumps later on?³ That certainly matches my reading of the history of classification. A generalization (in any science) can be formulated approximately empirically and theory can precisify it as well as making explanations. This is the difference between Devitt's essentialism and Barker's empiricism. Devitt's epistemology is what Bealer and Strawson ([1992]) called a 'moderate rationalism'. It is neither an idealist rationalism nor an empiricist positivism, but something in the middle. But treating kinds as essences in substances inverts the way biological heuristics generally go. Likewise, Barker is not a strong empiricist, nor are the majority of those who oppose essentialism.

The idea that a taxonomy explains anything is somewhat hard to argue in science, though some have (Fitzhugh [2005], [2009]), but it follows naturally from moderate to strong rationalism. If taxa are natural kinds, and kinds have substances, which is the logical consensus, then essential substances explain the taxa and the members of it. But this rests on a misunderstanding of the complexity of the origins of generalizations, especially in biology and the other 'idiographic' sciences (Rieppel [2006]). These sciences of the particular use generalizations the way a geographer uses mountain peaks, as reference points for navigation. We do not need essences for map-making, although the general principles of tectonics and erosion explain much of the maps we make.

I find essentialism exists on a spectrum, from strong to moderate (Devitt's version) to weak. The weak one is little more than repeating Aristotle's phrase, what it is to be something (what is something), and is harmless. The strong one inverts scientific heuristics for linguistic reasons. The moderate one? Well, it depends on one's purpose. Biologists do not need it, I am certain. Those less acquainted with the realities of biology, who learn it as I once did from philosophers and not scientists, and who rely upon Wikipedia and dictionaries for their information, may find it congenial. And technical metaphysicians might like it most of all.

We may wonder whether biological taxa even are natural kinds, despite being used for two millennia to illustrate kinds in nature. And we may wonder why it is that these kinds offer any theoretical basis for explanation. Darwin's ([1859], chap. 12, p. 433) problem was initiated by 'group under group', not by any theory. When he said that Malthus gave him a theory by which to work (Darwin [1958]), common descent was already his explanandum. Devitt's partial intrinsic biological (or taxon) essentialism is a solution to a non-problem, even philosophically, unless we need a thick account of biology where a philosopher legislates how science should be done. Nevertheless, the book is worthy of the attention of philosophers of science.

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