

# Wilkerson on Natural Kinds

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While I certainly do not intend to discourage the drawing of inspiration from the works of Aristotle, when one's aim is to illuminate the practice and metaphysics of contemporary science such inspiration must surely be tempered by a passing acquaintance with the deliverances of, say, the last hundred years of scientific inquiry. T. E. Wilkerson's paper, 'Natural Kinds' (*Philosophy* 63 (1988) 29–42) falls regrettably short of this desideratum. Wilkerson makes a number of points about sortal terms, and proposes a number of distinctions between types of such terms. Much of this seems useful and unobjectionable. My concern here is solely with what he considers to be natural kinds and natural kind terms.

Wilkerson's primary concern is with the question what it is to be a natural kind. He does not appear to see any difficulty about the question what are instances of natural kinds. The main point of this note is to claim that if Wilkerson's conception of what it is to be a natural kind is correct, then they are much harder to find than he seems to think. As to the first question, Wilkerson considers a natural kind to be a kind characterized by a real essence, and also one that provides a suitable subject for scientific investigation (p. 29). Presumably this scientific investigation will deliver 'precise' laws, since this is what is said to be impossible for non-natural kinds such as nations and banknotes (p. 30). Finally, and consequently, natural kind predicates are inductively projectible: 'If I know that a lump of stuff is gold, or that the object in front of me is an oak, I am in a position to know what it is likely to do next, and what other things of the same kind are likely to do' (p. 30).

All the examples of natural kinds offered in Wilkerson's paper are chemical or biological, the majority biological. I shall discuss only the latter.<sup>1</sup> Examples include tigers, oaks, sticklebacks, elms, beeches, wolves, narcissi, and others. The real essences that these kinds are supposed to have are particular genetic constitutions (oaks, p. 29; wolves, p. 37). My point about these cases is a very simple one: as is

<sup>1</sup> Though see D. H. Mellor, 'Natural Kinds', *British Journal for the Philosophy of Science* 28 (1977), 299–312, for criticism of naive essentialist assumptions about essences of chemical kinds. The points about biological kinds are developed in much more detail in my 'Natural Kinds and Biological Taxa', *Philosophical Review* 90 (1981), 66–90.

very widely agreed by almost everyone slightly acquainted with contemporary (post-Darwinian) biological theory,<sup>2</sup> it is not remotely plausible that any such terms name kinds with real essences.

To begin with, there is a problem about the relation of the everyday terms Wilkerson cites to the terms of a real scientific taxonomy. Wilkerson remarks that the notion of a real essence must be tied to 'a systematic taxonomy in biology, or to a physics and chemistry of the fine structure of things' (p. 41). Since the overwhelming consensus of contemporary biologists is that taxonomy should be grounded in evolutionary relationships rather than structural or morphological facts, there is no reason to expect that biological kinds can satisfy both these disjuncts. More strongly, it is indisputably false that a place in a systematic taxonomy will guarantee that a kind has a real essence. Systematic taxonomies classify biological entities hierarchically (species, genus, family, etc.). And while it is still occasionally supposed that the lowest level, the species, might be definable by a real essence, since the existence of species is at least widely supposed to be an objective matter, neither of these suppositions is tenable for higher taxa.<sup>3</sup> The importance of this is that for terms in ordinary language such as Wilkerson cites, even when—which is by no means always the case—there is a genuine correlate in 'systematic taxonomy', this is generally not a species.

Thus consider some of the actual examples cited. Oaks correspond pretty accurately to the genus *Quercus*. The various species (of which even Britain is generally supposed to possess two) have similarities and differences. The Wilkersonian inductivist who, on the basis of observation of, say *Quercus robur* (a British oak), spent an autumn waiting for the leaves to fall from, say a Cork oak or Holm oak, would be frustrated, since the latter are both evergreen. Tigers are a species, though with distinct subspecies. Again, though, I would be sceptical whether, on the basis of knowing that something in front of me was a tiger, I could predict what it would do next. I shall certainly leave others to find out. Sticklebacks may perhaps be coextensive with the family

<sup>2</sup> Ernst Mayr writes: 'The concepts of unchanging essences and of complete discontinuities between every *eidos* (type) . . . make genuine evolutionary thinking well-nigh impossible' (*Populations, Species, and Evolution* (Harvard University Press, 1970), 4). For a more detailed and more philosophical treatment, see D. L. Hull, 'The Effect of Essentialism on Taxonomy: 2000 Years of Stasis', *British Journal for Philosophy of Science* **15** (1965), 314–326; **16** 1–18.

<sup>3</sup> The issue is a little more complicated than I suggest, since some biologists do believe that divisions between higher taxa should represent phylogenetic matters of fact. This does nothing to encourage the view that such kinds might have essences, however.

## Discussion

*Gasterosteidae*. Elms, beeches, and narcissi are also fairly plausible genera. *Canidae* species commonly referred to as wolves<sup>4</sup> include the familiar timber wolf (*Canis lupus*), the red wolf (*Canis rufus*), the maned wolf (*Chrysocon grachyurus*), and, regrettably now extinct, the Falkland Islands wolf (*Dusicyon australis*). Thus there are species of the genus *Canis* that are not wolves (e.g. jackals, such as *Canis aureus*), and wolves that belong to other genera. Wolves do not, I would judge, comprise a very systematic subset of the family which includes them. (Indeed, the common assumption affirmed by Wilkerson (p. 35) that the Tasmanian wolf is not a wolf, though it may be a useful way of making a point, seems to me quite questionably motivated by the false supposition that 'wolf' names a natural kind.)<sup>5</sup>

The above points should not be taken to imply that where there is a species corresponding to a biological kind term there is a real essence, still less that, as Wilkerson suggests, this is a genetic structure. Darwin's great achievement was to realize that the essence of species, so to speak, was their variability. This is as true of their genetic structures as of their morphological characteristics, perhaps even more so. Genetic variability, after all, is a central precondition of the possibility of evolution by natural selection. Thus, to summarize, the terms that Wilkerson cites generally do not refer to kinds considered real by systematic taxonomy; and even when they do there are no plausible candidates for their real essences.

How much does all this matter? Perhaps all I have shown is that Wilkerson's category of natural kinds is too broadly conceived, and should be narrowed down to only the chemical examples? I think there are more important issues at stake. First, I think that the notion of a natural kind does have some importance.<sup>6</sup> As indicated at the beginning of this note, I am quite sympathetic to many of the points Wilkerson makes in distinguishing them from artificial, superficial, etc. kinds. And this goes beyond offering a special—and rather questionable—status to the occasional samples we encounter of pure chemicals. (I do think, on the other hand, that even natural kinds have a good deal more to do with human interests than Wilkerson allows (p. 36), though I cannot argue that point here.) What is needed, I would suggest, is a characterization of the notion of a natural kind emancipated from the wholly unhelpful and misleading metaphysics of essences.

<sup>4</sup> See G. B. Corbet and J. E. Hill, *A World List of Mammal Species* (London: British Museum (Natural History), 1986).

<sup>5</sup> Various other similar examples can be found in my 'Natural Kinds and Biological Taxa' (op. cit.).

<sup>6</sup> I have offered qualified support for a modest conception of natural kinds stripped of their essentialist connotations in 'Sex, Gender, and Essence', *Midwest Studies in Philosophy* 11 (1986), 441–457.

And finally, I think the issue has even more important consequences for our general philosophical perspective on science. The idea that our everyday transactions with the world involve our encountering readily identifiable kinds of things just waiting to be slotted into fundamental scientific laws belongs with a naive view of science that deserves wholesale rejection.<sup>7</sup> And even the more scientifically serious kinds that may result from real attempts at scientific investigation are not generally usefully conceived as instantiating real essences. Biology, for example, manages quite nicely with nothing of the sort. If anyone seriously wants to resurrect such a picture either of everyday experience or of science, they should at least take the trouble to look at actual scientific practice and see whether the picture has any application. In most cases, I suspect, the trouble would be richly rewarded by the hasty abandonment of the essentialist project.

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<sup>7</sup> I have discussed and criticized this and other elements of a broader picture of which it is typically part in 'Materialism, Physicalism, and Scientism', *Philosophical Topics* (1988).