Metaphysics // Fall 2017

Handout 19

Natural kinds: Quine, Dupré

Remark 1. Background readings: Goodman, *Fact, Fiction, and Forecast*, ch. III, Hempel, "Studies in the logic of confirmation", Putnam, 'Meaning and reference'.

Confirmation revisited. Quine begins by rehearsing themes from Goodman and Hempel. In 115
the paradox of confirmation we discovered that green leaves should confirm the hypothesis 'All ravens are black', at least if we follow the formal treatment of confirmation. In the new riddle of induction we saw that our evidence can be compatible with any number of predictions, reformulated with the aid of gruesome predicates.

The paradox of confirmation can be seen as a special case of the new riddle. Projectible predicates are exactly the ones that can feature in the confirmable hypothesis 'All Fs are Gs.' Only if F and G are projectible their instances will confirm the hypothesis. We learn now that the complements ($\sim F$) of projectible predicates need not be projectible themselves. So green leaves will not confirm:

All non-black things are non-ravens, (19-1)

since the predicates in this hypothesis are not projectible. But this leaves untouched the claim that a lawlike hypothesis can involve non-projectible predicates. For example, (19-1) is still lawlike, because it is equivalent to:

All ravens are black.

All we can say is that a hypothesis is lawlike if it is logically equivalent to some hypothesis that only includes projectible predicates.

Similarity. Why do we, as a matter of fact, expect the next emerald to be green rather than grue? 116
It seems due to intuitive similarity between them. Grue emeralds are similar to each other only if one
of them is green. Well, but how to cash out similarity? Quine observes some linguistic connotations 117
drawing 'similarity' and 'kind' close to each other. Perhaps 'similarity' should be explicated as 'being of the same kind'? This project is doomed because of the troubles with comparative similarity.

Perhaps the contrary: we should try to define 'kind' in terms of 'similarity'. Here we again have 119
troubles with comparative similarity. Suppose 'red' were a kind (plausible, we say). But red things can be similar and dissimilar in all sorts of ways, depending on their other salient properties (shape, size etc.). A more sophisticated attempt by Carnap along these lines was refuted by Goodman.

So nothing promising so far: similarity and kind are fundamental categories, but resist a formal explication. To see how fundamental similarity is, look at language acquisition. We see the world as a collection of kinds of objects, immediately classifying objects into members of different kinds.

This in turn shows how primitive learning utilises induction. We form expectations on the basis 121
of our (innate) capacity for classifying perceptual data into similar and dissimilar patches, into kinds.

Induction and naturalism. Interestingly, Quine dismissed out of hand one problem about induction: why there are regularities at all. This, he says, has been established by science.

Question 2. Reflect on this claim of Quine's.

There is another, legitimate problem of induction: why our subjective groupings are in sync with objective regularities, so as to make induction successful. Quine offers an evolutionary sketch: *we* are equipped with better prediction capacities because those who were not are no longer with us.

Quine immediately forestalls any attempt to reject this idea on the basis of circularity. Of course the evolutionary theory itself is based on induction. But there is no higher demand of reasonableness of our inductive expectations that can be asked from outside of science. We can only ask how we, the human species, have come to form better than average expectations. And that is what the evolutionary theory can teach us.

THE PERILS OF CLASSIFICATION. A correct classification must tell us about the nature of things comprising different kinds or categories. It is true that we also would like to have 'neat' classifications, but the two desiderata, informativeness and neatness, do not always intersect. If we classify things merely by their size or weight, we can get neat classifications, but hardly informative. The reverse does not hold either. The division of musical genres into masses, operas, symphonies, concertos, trios, sonatas is informative. Yet often there is overlap, as in sinfonia-concertante (or in Prokofiev's *Symphony-Concerto*) or in choral symphonies (e.g., Mahler's Eighth), or when a mass has the texture of an opera (Verdi's *Requiem*).

If, therefore, classifications should be informative, then there probably should be a cleavage between spurious classifications of the vernacular and the genuine classifications offered by science. The rationale is that scientific taxonomies should have unification as one of their primary goals.

Example 3. Observing two birds (a 'magpie' and a 'crow'), looking fairly different, we, *as ornithologists*, learn that they both belong to the same family. We can then expect them to share morphological traits, diet, reproductive patterns.

By contrast, the vernacular, reflecting the approach of common sense, does not aim at unification. It seemingly goes in the opposite direction, by increasing our awareness of the diversity of nature. Now Dupré himself admits that common sense 'imposes order' on the chaotic flow of perceptual experience. Why cannot this very order be an instance of unification? I think the answer is that there is unification of observational data, but, within the confinement of common sense, there is no further attempt at conceptual unification.

ESSENCES AND DIVISION OF LABOUR. If we accept the gap between commonsensical and theoretical taxonomies of biological kinds, how are the two related? Perhaps by approximation: common sense gives a rough idea what the theoretical taxonomy should look like. For example, a common mistake is to refer to whales as fish due to their superficial mutual similarity. Looking a bit deeper, we duly note the crucial differences between them, along with the similarities between whales and mammals.

This view echoes the Lockean distinction between nominal and real essences. Nominal essences correspond to our verbal distinctions at the level of the vernacular. Thus we might define 'fish' as an 'animal living in water, having a skeleton, bearing superficial resemblance to an exemplar X' (the last clause to rule out lobsters, for example). But there might not be any real distinction in nature in terms of fish. That is, for instance, whales and fish would not share real essences. Those essences are determined by a microphysical structure which, according to Locke, remains unknowable.

Remark 4. Real and nominal essences diverge in the case of material objects. But they coincide in the case of mathematical objects and in the case of abstract objects generally, such as those used in moral philosophy.

Question 5. Reflect on Remark 4.

Later views, developed in particular by Kripke and Putnam, challenged Locke's pessimism. Science is able to, or at least aims to, discover real essences, the microstructure of material objects. In the vernacular, we use taxonomies based on so-called 'stereotypes', whereby objects are grouped together on the basis of their perceptual similarity. (I.e., in Lockean terms, in everyday life we work use nominal essences for classifying things.) Yet the reference of the general terms of the everyday taxonomy is determined by a scientific taxonomy, based on the microphysical structure of objects. They have this reference even in the vernacular, since the users of the vernacular defer to the authority of the science language users.

Example 6. Suppose I say, 'Magpies are birds.' 'But what is a bird?', you ask. The question can be taken in two ways. You may be asking how to identify birds perceptually. Then I would appeal to some nominal essence, as in Example 3. Or you may be asking what birds really are. Then, as a layman, I am supposed to say, that birds are whatever ornithologists say birds are. My use of the term 'bird' is in this sense parasitic on the use of that term in the scientific community.