

Family Life *Dan O'Brien*

In Plato's dialogues, Socrates pushes his companions hard to find the definitions of some of our ethical concepts such as justice, goodness and piety. Surely a concept must have such a definition if it is to have a determinate application or meaning. We can call this the Socratic assumption. I shall suggest, however, that this assumption is not always warranted, and I shall sketch Wittgenstein's alternative account of our grasp of certain concepts. The example that I shall give of a concept that does not have a definition may perhaps be surprising given its scientific nature; the concept is that of 'life', or of what it is to be 'living'. First, though, let us look a little closer at the content of the Socratic assumption.

Philosophical Analysis

Socrates was engaged in philosophical analysis, and this is an activity that has to a greater or lesser extent engaged philosophers ever since. When pursuing such analysis we attempt to define the extension of our concepts, that is, we attempt to draw up rules that specify to what it is our concepts apply. One way of doing this is to lay down necessary and sufficient conditions for the application of a concept. For example, to be Premiership Champions it is necessary that one is a registered football club and that one has a squad of at least eleven players. The sufficient conditions for being so are that such a team must have more points than anybody else. Note, though, that different properties can meet the requirements of the sufficient conditions. To be multilingual, say, it is sufficient to speak French, German and Greek, but other sets of languages will suffice.

Analyses of many concepts are easy to find. One may wonder just what a carburettor is, and in order to work this out we can analyse how we use the term 'carburettor' and thereby discover its definition. In doing so, we can work out that the term refers to the mechanism within an engine that mixes together air and petrol in order that the latter will efficiently combust. This, then, is what a carburettor is. Other analyses, however, are not so forthcoming. Socrates' concern with the nature of justice, say, is something that continues to tax moral philosophers to this day.

A useful philosophical tool for pursuing such analyses is the thought experiment. One can consider how one would apply one's concepts in imaginary or counterfactual situations. And, the intuitions we have about such cases can be used to test our suggested analyses. In order to illustrate this let us consider a simple case. It may be suggested that 'water' refers to whatever liquid it happens to be that falls from the clouds and that fills the oceans. This, then, is an analysis of the concept 'water'. Let us, however, consider an alien world (or a distinct way in which our world could have developed). In such a world the rain and the oceans may consist of ammonia. Now, though, we encounter a problem. Our analysis suggests that 'water' should refer to this substance, but our intuition is that this is simply different stuff; it is not water. We must, then, re-think our suggested analysis; water cannot be defined as whatever liquid it is that happens to fall from the clouds and fills the oceans. If in a particular case the verdict of our analysis does not match our intuitions about the correct use of

our concepts, then we must refine our analysis or reject it completely and start again from scratch. We shall see that this is the kind of procedure that we shall use below to assess a suggested analysis of the concept of 'life'.

Life

There are many clear-cut applications of 'life': sharks are alive and stones are not. But what is it that enables us to apply such a classification? Or, in accepting the Socratic assumption, what definition of 'life' are we using? It was once thought that living organisms contained a certain 'vital spirit', a substance that sparked sharks and not stones into life. Science, however, has found that such a substance does not exist, and accounts of life now focus on the functional or organisational level rather than on the possession of a particular type of substance. To be alive one does not require vital spirits; instead, one needs to perform certain actions or functions. And biologists have detailed just which functional characteristics are necessary and sufficient for life. Living creatures must eat, grow, excrete, move, respire, reproduce, and be sensitive to their environment. It is this definition of life that may be familiar from science classes at school and it is this definition that we shall go on to investigate.

First, we have to be a little careful about how we apply these seven criteria because straightaway we seem to find counterexamples, cases where our intuitions clash with our definition. Mules do not reproduce, my sweet peas do not move very far, and the cactus on my desk does not seem to eat anything, yet we should like to say that all three of these organisms are alive. There are, however, senses in which these organisms do reproduce, move and eat: the body cells of a mule are constantly replicating and being renewed; sweet peas turn their leaves toward the sun and grow towards the light; and, my cactus is taking in carbon dioxide from the environment and metabolising it into sugar which it uses as fuel. In order, then, for the above definition to be adopted we must not think of these criteria in anthropomorphic terms, and the biologist will need to tell us how we should conceive of such functions as reproduction and movement.

Let us next, however, consider some more exotic creatures. We shall conceive of certain organisms that may force us to reject the above definition. Let us imagine a creature that simply has an ongoing metabolism that produces coloured compounds, compounds that help camouflage this creature. We shall call this sea-dwelling creature a 'camouflaged metaboliser'. It is so efficient at this that its continued survival is assured. The metabolites of this creature are internally recycled and thus, there is no need for nutrition or excretion. Its cell structure is also so durable that reproduction is unnecessary, and since it need not eat or reproduce, it has no need for self-directed movement. Its coloured camouflage compounds, however, do degrade over time and therefore ongoing metabolic recycling is required in order to maintain such compounds at the required level for survival. The energy necessary for such recycling is provided by the respiratory processes of the camouflaged metaboliser (the biological conception of respiration being that of a process of oxidation in which energy is transferred from certain energy rich metabolites to those that are more easily utilised by the organism). This is a creature, then, that only respire. And, my claim is that this is a creature that we would want to call alive even though it is not one that is picked out by the suggested definition above.

One response here would be to rethink our analysis. One could, perhaps, focus on the metabolism of creatures and claim that organisms are alive if they have respiration-driven metabolic processes of a certain complex kind. Creatures could then be seen as alive if they satisfied only certain important criteria of the original suggested seven. I, however, shall suggest an alternative response, one based on Wittgenstein's notion of family resemblance, and one that allows distinct living organisms to have no characteristics in common.

Family Resemblance

Wittgenstein argues that there are no necessary and sufficient conditions for the application of at least some of our concepts; we should not assume that the various instantiations of a concept have anything in common. When we look at the use of some of our concepts we do not find such common features. His example is that of the concept 'game'.

Consider for example the proceedings that we call 'games'. I mean board-games, card-games, ball-games, Olympic games, and so on. What is common to them all? - Don't say: 'There *must* be something common, or they would not be called 'games' - but *look and see* whether there is anything common to all. (*Philosophical Investigations* §66)

And, if one looks, one does not find any common features.

Look for example at board-games, with their multifarious relationships. Now pass to card-games; here you find many correspondences with the first group, but many common features drop out, and others appear. When we pass next to ball-games, much that is common is retained, but much is lost. - Are they all 'amusing'? Compare chess with noughts and crosses. Or is there always winning and losing, or competition between players? Think of patience ...(*Philosophical Investigations* §66)

Wittgenstein goes on, and so can we: in looking at the various activities we call games we can see that there is no such thing as the essence of what it is to be a game. All we find is: a complicated network of similarities overlapping and crisscrossing: sometimes overall similarities, sometimes similarities of detail. (*Philosophical Investigations* §66)

And:

I can think of no better expression to characterise these similarities than 'family resemblances'; for the various resemblances between members of a family: build, features, colour of the eyes, gait, temperament, etc. etc. overlap and criss-cross in the same way. - And I shall say: 'games' form a family. (*Philosophical Investigations* §67)

One can illustrate such a family as follows. We can see how it would be plausible to say that the five individuals below are of the same kind or family. Among them they have the properties A, B, C, D and E; and, any two individuals share three properties. There are, however, no properties that are shared by all.

X₁: A B C D
X₂: A B C E
X₃: A B E D
X₄: A E C D
X₅: E B C D

Wittgenstein goes on to draw a further analogy, this time between the members of a family and the fibres of a rope, and this we shall see suggests a more radical construal of family resemblance.

And we extend our concept of [X] as in spinning a thread we twist fibre on fibre. And the strength of the fibre does not reside in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres. (*Philosophical Investigations* §67)

As we saw above, X₁ and X₂ are of the same kind because they share three properties. Let us now, though, introduce X₆ (B C D E). X₆ also shares three properties with X₁ and thus should be seen as of the same kind. We can, therefore, imagine a progression of individuals as follows, each of which shares three properties with his nearest 'relations'.

X₁: A B C D
X₆: B C D E
X₇: C D E F
X₈: D E F G
X₉: E F G H

We should, then, also like to say that these five individuals comprise a family, or that they are of the same kind. One should note, however, that we are now accepting that X₈ is of the same kind as X₁ even though they have no properties in common, just as two widely separated sections of the same rope may have no fibres in common. And, it is important to see that X₈ is only considered to be of the same kind as X₁ because of the existence of the rest of the family, a family that we have come to call by the same name. There may be another individual, X₉₉, who possesses the properties R S T U. This individual is just as different from X₁ as X₈ is - both X₈ and X₉₉ have nothing in common with X₁ - yet only X₈ is of the same kind as X₁ because of the family of intermediates (X₂ to X₇) through which they are related. Two activities, therefore, can both be games even though they have nothing in common, and, I shall argue, two entities can both be alive even though they have no shared properties. Understanding the notion of family resemblance should quell our 'craving for generality' (*The Blue Book*, p. 17).

Why We Might Be Sceptical Of It

There are paradigm cases of life that possess all seven of the characteristics above. I have also argued that there could be living creatures that do not possess all seven, and that we would be prepared to call the camouflaged metaboliser alive even though it only respire. I shall now claim that in a world full of such metabolisers we can come

to see other markedly similar systems as living, yet these creatures may have nothing in common with our camouflaged metabolisers.

In a world inhabited by camouflaged metabolisers we would also come to say that mock-metaboliser is alive. Mock-metaboliser has the same outwardly camouflaged appearance as our camouflaged metabolisers but it does not respire in order to maintain its metabolism. It does not have a metabolism. Its durable cell structure simply provides a safe haven for certain coloured compounds, compounds that would otherwise be broken down by the acidic nature of the alien seas. Such coloured compounds diffuse in and remain there shielding the structure from the eyes of predators. As its load of such compounds increases so does its density, and thus it sinks lower into the seas where it so happens that its colouring no longer acts as camouflage. Down in the depths certain deep-dwellers start to nibble away at these now conspicuous compounds, thus decreasing its density and allowing this structure to float upwards into safety and to restock 'itself' with the coloured compounds it 'requires'. This structure can thus be seen as pursuing a strategy to prolong its existence in that it periodically rises and sinks in the ocean in a constant 'effort' to 'avoid' its prey. In a world of mules, sharks and sweet peas, such a structure may be seen as merely an interesting object of the seas. However, if such forms of alien life as our camouflaged metaboliser had previously helped clarify our conception of life then the mock-metaboliser could also be seen as living.

There may be other objects that we do not consider to be alive, yet they may be just as different from sharks as our mock-metabolisers are. It is the existence of the family member camouflaged metaboliser, however, that allows mock-metabolisers into the fold and not the others (just as X_8 was allowed in but not X_{99}). My claim, then, is that one can conceive of 'alive' as a family resemblance concept. This entails that we will not be able to find a definition or a set of necessary and sufficient conditions for the application of the concept 'life'. (Note that the suggestion to pursue an analysis focused on the important process of respiration is now ruled out because mock-metaboliser does not respire.)

Biology

definition that captures all instantiations of the concept 'life'. Nevertheless, the concept is perfectly meaningful; it is simply that the search for a definition is unnecessary. '[T]his does not [however] leave us with nothing to do; instead it invites us to trace out relationships, and this should be done with whatever degree of rigor the subject matter allows' (Wittgenstein, p. 138). Exploration can always throw up distinct manifestations of life and the biologist's task is then to catalogue the various properties that we see shared among our growing family of living organisms and trace the relations between them. She can also, of course, go on to investigate these properties and answer questions concerning how it is that certain family members move and what it is that enables some of them to respire. But importantly, the properties she investigates will not be those that are shared by all living creatures, but rather, they are those that ground the application of our concept in particular cases. The main aim of this paper has been to illuminate the concept of family resemblance, and to show how in certain cases it can undercut the pursuit of philosophical analysis and the Socratic Assumption. In doing so, we have also come to reflect on the ontology of biology. Biological entities are those that are alive; that is the criterion

that separates the subject matter of biology from that of the other physical sciences such as chemistry. We concluded that the biologist should not aim to give a unifying theory of what it is to be alive, but that she should instead simply provide a catalogue of living creatures and note the various features that underlie her classification

Dan O'Brien
University of Birmingham

References

R. Fogelin, *Wittgenstein* (London: Routledge and Kegan Paul, 1976)

L. Wittgenstein, *The Blue Book in The Blue and Brown Books* (Oxford: Blackwell, 1958)

L. Wittgenstein, *Philosophical Investigations* (Oxford: Blackwell, 1958)